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School-based sex and relationship education

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SCHOOL-BASED SEX AND RELATIONSHIP EDUCATION

Towards a positive sexual self-esteem

Gaby de Lijster-van Kampen

School-based sex and relationship education

Towards a positive sexual self-esteem

COLOPHON
School-based sex and relationship education
Towards a positive sexual self-esteem
Gaby de Lijster-van Kampen

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School-based sex and relationship education

Towards a positive sexual self-esteem

PROEFSCHRIFT

ter verkrijging van de graad van doctor aan de Universiteit Maastricht,
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1

GENERAL INTRODUCTION

This dissertation deals with school-based sex and relationship education, and in particular with the prevention of adolescent sexual harassment behavior. This dissertation wants to contribute to the development of future preventive interventions, and consequently to adolescents' positive sexual health development, by establishing which determinants are associated with the intention to reject and to stop committing sexual harassment; to what degree preventive school-based interventions follow a planned process of development; and whether school-based programs have an effect on adolescent sexual harassment behavior, or on the determinants of the behavior.

For the purpose of this PhD research, two school-based interventions were evaluated: *Benzies & Batchies* and *Boys. Benzies and Batchies (*Felten and Janssens 2014) is an interactive school-based program developed in the Netherlands to prevent male and female adolescent sexual harassment behavior in secondary school students aged 12-16 years by combining a peer-led theatre play with skills lessons given by trained instructors. The name of the program was derived from street slang for "pimp cars" and "scantily dressed girls". *Boys* (Van Ardenne et al. 2008) is a school-based program aimed at male students aged 12-16 years from vocational-streamed schools to prevent adolescent males' sexual harassment of girls and women. The program consists of five consecutive lessons – each constituted around a specific subject (i.e., sex, girls, men, love, and boundaries with regard to sexual behavior) – intended to teach adolescent male students skills with regard to relational and sexual behavior. Both programs were developed in the Netherlands out of the need to address not only victims but also perpetrators of sexual harassment.

Both interventions were developed at a time when much attention was paid to the prevention of adolescent sexual harassment behavior in the Netherlands. They were among the first school-based programs aiming at sexual harassment, and were implemented in Dutch secondary schools. Both interventions were examples of good practice and used an innovative approach in educating adolescents of lower educational level in the Netherlands on sex and relationship skills. In addition, they were included in a national program of promising interventions for the development and evaluation of sexual health programs for adolescents. The initial developers of both *Benzies and Batchies* and *Boys* wanted to know the effects of their intervention and initiated research into the effects of their program.

This chapter discusses in brief adolescent sexual harassment behavior. In addition, it discusses the challenges that intervention developers encounter in developing school-based programs that aim to prevent adolescent sexual harassment behavior, and consequently, that contribute to the positive sexual health development of adolescents. The Intervention Mapping

framework is used as a theoretical background. The chapter ends with a description of the outline of this dissertation.

Adolescent sexual harassment behavior

Experimenting and flirting behaviors are part of adolescent sexual development. At the age of 15 almost all boys and girls have had experience with falling in love, and over two-thirds with a steady relationship (De Graaf et al. 2012). As they grow older, the number and type of their sexual experiences increase; whereby most young people follow a progressive sexual trajectory from less intimate sexual behaviors (such as holding hands and kissing) to more intimate ones (such as fondling and sexual intercourse) (De Graaf et al. 2009). There is, however, a thin line between healthy sexual behavior and sexual harassment behavior.

There is no clear definition of what sexual harassment behaviors entails. Depending on the definition of sexual harassment that researchers use, the age of the respondents involved, their ethnicity and educational level, and timeframe of the study, the estimated prevalence of sexual harassment in young people 12-18 years of age varies (McMaster et al. 2002; Young et al. 2009; Hill and Kearl 2011; AAUW 2001; De Graaf et al. 2012; Witkowska and Menckel 2005; De Bruijn et al. 2006). In Western populations, the prevalence rates for girls as victims lie between 45% and 56% (vs. 40-55% for boys as victims). For girls as perpetrators, they lie between 7% and 21% (vs. 13-36% for boys as perpetrators) (McMaster et al. 2002; Hill and Kearl 2011; Li et al. 2010). For adolescents of both sexes, these prevalence rates change with age: while 12 to 13-year-old male students reported more sexual harassment victimization than those aged 17 to 18, older female students reported more sexual harassment victimization than their younger counterparts (Hill and Kearl 2011).

Kuyper and colleagues (2009) distinguished two types of sexual harassment behaviors: a type that includes sexual harassment with physical contact, such as touching, kissing and sexual intercourse; and one type that includes behavior without actual physical contact, such as making sexual comments and showing sexual images. In both types one of the parties opposes the behavior or indicates that it should stop. These two types of harassment behaviors can then be further broken down into tactics that are used with regard to the way a person persuades someone into such a situation or gets persuaded. For situations with physical contact, it concerns verbal manipulation (i.e., whining, gossiping, getting angry), abuse related to the situation (i.e., having sex with a drunken partner who would normally not do such thing), and sexual coercion (i.e., threatening, using violence, drugging someone). For situations without physical contact, it concerns direct – the people involved are physically present – experiences and behaviors (i.e., making sexually explicit remarks or masturbating in a person's presence), and indirect – media

related – experiences and behaviors (i.e., making sexually explicit remarks or using the webcam) (Kuyper et al. 2009).

Adolescent victims of sexual harassment encounter negative health effects, such as higher risks of suicidal thoughts, suicidal ideation and feeling unsafe at school (Chiodo et al. 2009; Exner-Cortens et al. 2013). Whereas female victims have higher risks of self-harm, eating problems, lower self-esteem, increased heavy episodic drinking, depressive symptomatology, and smoking, male victims of sexual harassment have higher risks of antisocial behavior and marijuana use (Goldstein et al. 2007; Chiodo et al. 2009; Exner-Cortens et al. 2013). In addition, increased rates of alcohol, drug use, smoking, depression, fear, and thoughts of suicidal ideation occur (Timmerman 2005; Exner-Cortens et al. 2013).

For the purpose of our research we used a broad definition of adolescent sexual harassment behavior, namely 'any sexual behavior against someone's will'. We incorporated both the victim's and perpetrator's perspective of the harassment behaviors, as well as rejection behaviors, which we defined as 'saying no' to the harassment behavior at hand.

Determinants of adolescent sexual harassment behavior

In order to prevent adolescent sexual harassment, it is essential to know which underlying factors – determinants of behavior - influence the behavior (Peters 2014). It is therefore important to ask questions which can provide clarification on why the adolescents exhibit sexual harassment behavior and thereby increase their risk of negative health effects. Changing or modifying determinants of behavior through interventions can influence the way adolescents think about their behavior, or their capacity to change it; intervening on factors that do not cause the behavior seem to be useless (Bartholomew Eldredge et al. 2011).

The literature shows that sexual behavior – both risky and non-risky – of adolescents is influenced by various factors, which can be classified according to determinants of the target behavior, including intention to have sex (Buhi and Goodson 2007), attitude towards the behavior (Li et al. 2010), perceptions of peer sexual behavior (Buhi and Goodson 2007), and self-efficacy (Li et al. 2010); and additional determinants of behavior, including risk perception (Drouin et al. 2013), knowledge of sexual health (Guse et al. 2012), prototype images (Gerrard et al. 2008; Jewell and Brown 2013), attitudes towards gender roles (De Bruijn et al. 2006), and sexual self-esteem (Hensel et al. 2011; Rostosky et al. 2008). To date, little attention has been paid to determinants of behavior in research on adolescent victimization and perpetration. More research is therefore needed on determinants in the specific case of sexual harassment behavior.

Following the Reasoned Action Approach (Fishbein and Ajzen 2010), sexual behavior (e.g., kissing a date) is predicted by the individual's intention to perform the behavior (e.g., 'I intend to

kiss my date'). This behavioral intention is predicted, in turn, by determinants attitude towards the behavior (e.g., 'I like kissing my date'), perceived norm (e.g., 'my friends are okay with me kissing my date') and perceived behavioral control (e.g., 'I am able to kiss my date'). Research shows that adolescents are as capable of logical reasoning and of perceiving risk as adults are. However, when it comes to action, they engage in risky behaviors more than adults, especially when peers are present (Gardner and Steinberg 2005). Webb and Sheeran (2006) then suggest that attention should also be paid to the social context in which health risk behavior, including sexual harassment, takes places. As adolescence is a turbulent period in which the adolescent finds himself in social interaction with peers, his actions may not follow in a reasonable, or consistent manner, but as a reaction to the social-environmental situation at hand. The determinant perceived norm of the Reasoned Action Approach takes into account the influence from the social environment. The Prototype Willingness Model (Gerrard et al. 2008) may add to our understanding of peer influences. One of the assumptions of the Prototype Willingness Model is that adolescents have clear cognitive representations or social images (prototypes) of the type of person their age who engages in specific risk behaviors (Gibbons et al. 2004; Connor and Norman 2005). It may therefore be relevant to study adolescents' images of prototypes of victims and perpetrators of sexual harassment (e.g., 'I think a perpetrator of sexual harassment is bad').

Preventing adolescent sexual harassment

According to the World Health Organization (2006) all persons have the right to sexuality education. However, national sex education policies influence the content of school curricula, ranging from comprehensive sex education to abstinence-based programs (Weaver et al. 2005). Results from a review of reviews on characteristics of effective interventions in improving adolescents' sexual health showed that interventions were more effective when they were appropriately matched to the biological, cognitive and social developmental stage of the adolescents (e.g., by ensuring language and content of the intervention to be age-appropriate), and targeted younger age groups compared to young people that were already sexually active (Poobalan et al. 2009).

According to Kocken and colleagues (2007) little attention is paid to sexual harassment within sexual health preventive programs. Moreover, the effectiveness of adolescent dating violence prevention programs on sexual behavior has been mixed. A Cochrane meta-analysis on randomized controlled trials (RCT) in educational and community settings showed no convincing evidence for a reduction in violence or for positive changes in attitudes, skills and behaviors related to relationship and dating violence (Fellmeth et al. 2013). However, two RCT studies on the school-based dating violence prevention intervention *Safe Dates*, that were not included in the Cochrane meta-analysis due to insufficient data availability, did demonstrate significant

short and long term effects on sexually violent behavior and the factors that influence it (Foshee et al. 1998; Foshee et al. 2004). Besides, interventions that took a gender-strategic approach or addressed a single-gender audience (all-female or all-male) seemed to reduce adolescent dating violence and improved attitudes, intention and knowledge more effectively than mixed gender-programs (Wolfe et al. 2009; Vladutiu et al. 2011).

Although school-based programs can be used to prevent adolescent sexual harassment behavior, such programs should be systematically developed, and based on theoretical evidence. Consequently, this will lead to more successful and effective interventions. Intervention Mapping provides a six-steps framework to health promotion program planners in order to make effective decisions at each step in the development and planning of an intervention, implementation and evaluation thereof (Bartholomew Eldredge et al. 2011) (see figure 1).

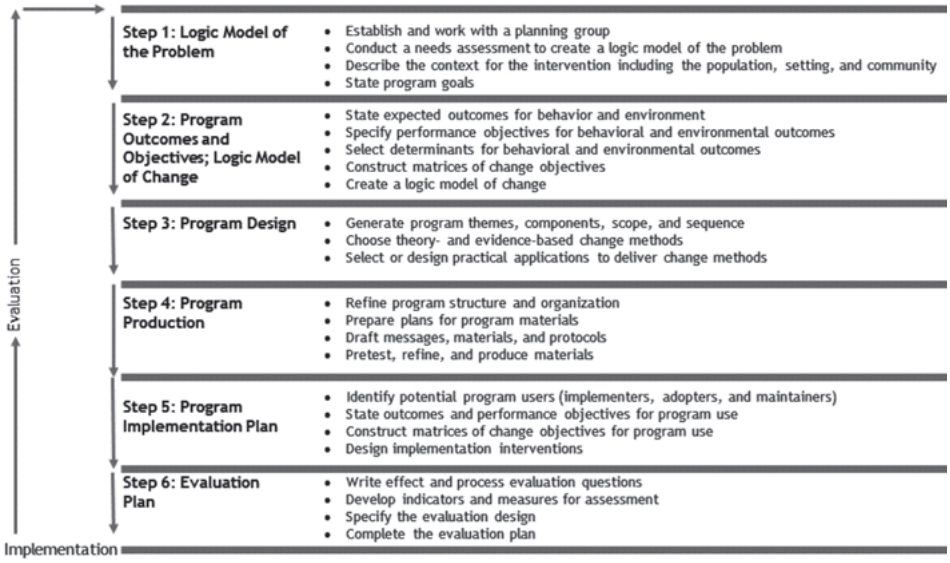

Fig. 1 The six steps of Intervention Mapping

The goal of the first step of Intervention Mapping (IM) is to conduct a needs assessment in order to develop a logic model of the problem, i.e., the factors that cause or influence the health problem on which the intervention will focus. The second step's goal is the development of a logic model of change: program planners have to specify what needs to change in behavior and the environment in order to improve health and quality of life. The goal of the third step is to design the program based on theory and evidence. Building on the input gathered in steps one to three, the program's production is the goal of step 4 of IM. The goal of step 5 is to develop an implementation plan to enable adoption, implementation and maintenance of the health

promotion program. In the sixth and final step of the IM process, program planners will develop and complete an evaluation plan.

The IM framework can help developers of school-based interventions to follow a planned process for the development, implementation and evaluation of their intervention; and to identify the strengths and weaknesses in their intervention.

Dissertation outline

The aims of this PhD research were 1) to gain insight into the determinants of adolescent sexual harassment behavior; 2) to evaluate the process of development of *Benzies & Batchies* and *Boys*, two existing school-based programs for the prevention of adolescent sexual harassment, by using the Intervention Mapping Framework; and 3) to gain insight into the short and longer term effects of these programs by using controlled research designs and multivariate statistical techniques for data analysis.

Chapter 2 describes a cross-sectional study in adolescents aged 12-16 years (N = 571; 52% girls) at 25 schools providing secondary education, which aimed to establish which determinants from the Reasoned Action Approach (Fishbein and Ajzen 2010) contributed to adolescent's intentions to reject or to stop sexual harassment. We also examined which additional determinants that the literature deemed as important – risk perception, knowledge, prototype image, sexual self-esteem, and sexual harassment behavior in the past six months – were associated with adolescent's intentions to reject or to stop sexual harassment. Finally, we explored which beliefs underlying all eight of these determinants, should be selected when developing a program to prevent adolescent sexual harassment behavior.

Chapter 3 presents the results of a study that evaluated the process of development, in retrospect, of two existing school-based programs for the prevention of adolescent sexual harassment, *Benzies & Batchies* and *Boys*, using the Intervention Mapping framework (Bartholomew Eldredge et al. 2016; Godin et al. 2007). The two interventions were among the first school-based programs aiming at sexual harassment, and were implemented in Dutch secondary schools. Both interventions were developed in practice, yet little was known about the process of their development, and the theoretical rationale of the programs. The aim of the study was to evaluate the strengths and weaknesses of *Benzies & Batchies* and *Boys*, to be able to contribute to the development of practice based interventions.

In **chapter** 4 a cluster-randomized controlled design study (experimental condition n = 14 schools, 431 students, 51% girls; control condition n = 11 schools, 384 students, 51% girls) is described which aimed to establish any effects of *Benzies & Batchies* on adolescent sexual harassment behavior (victimization and perpetration) and five determinants: attitude, perceived

social norm, self-efficacy, intention, and prototype; and on three distal factors: attitude towards gender roles, attitude towards media influence and sexual self-esteem. We also examined whether any effects to be found would differ with regard to the adolescents' gender, educational level and ethnicity.

Chapter 5 presents the findings of a quasi-experimental design study (experimental condition n = 15 schools, 159 male students; control condition n = 14 schools, 132 male students) which aimed to establish the effects of *Boys*, a school-based program to prevent adolescent males' sexual harassment of girls and women, on sexual harassment behaviors and its determinants, aimed at male students aged 12-16 years from vocational-streamed schools.

Finally, **chapter 6** summarizes and discusses the main results of the four studies. Moreover, implications for practice and future development of school-based sex and relationship education programs are presented, together with implications for future research.

1

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WHICH DETERMINANTS CONTRIBUTE TO AN ADOLESCENT'S INTENTION TO REJECT OR TO STOP ADOLESCENT SEXUAL HARASSMENT BEHAVIORS?

De Lijster, G.P.A., Taal, E.M., Gebhardt, W.A., Crutzen, R., Kok, G., & Kocken, P.L. (2018). To be submitted.

Abstract

As a growing number of adolescents encounter sexual harassment (i.e., sexting, sexual remarks, and dating violence), there is a need for effective, theory-based preventive interventions. To establish which determinants contribute to an adolescent's intentions to reject or stop sexual harassment behavior, we conducted a cross-sectional study in adolescents aged 12-16 years (N = 571; 52% girls) at 25 schools providing secondary education. Besides determinants such as attitude and sexual self-esteem for distinct behaviors, we found that perceived behavioral control and sex were significantly associated with rejecting and stopping sexual harassment overall.

To develop effective preventive sexual harassment interventions, we recommend that attention is paid to sexual self-esteem, behavioral determinants, and to the various beliefs and cognitions between sexes.

Introduction

Sexual harassment behavior, both severe and less severe, is a growing problem in society. Many adolescents encounter these unwanted behaviors, as victims, perpetrators, or both. While these behaviors are manifested in different forms, three categories are often distinguished: verbal (such as sexual remarks); non-verbal (such as sexting, i.e., using electronic means to send, receive or forward sexually explicit messages, images or photos to others); and physical (such as dating violence). Estimates of the prevalence of sexual harassment vary, depending on the definition. For example, 37% girls in middle school and 51% girls in high school were victim of unwanted kissing, hugging or touching. It was also reported that 10% of adolescents sent messages with sexually suggestive texts or photos, while 16% of adolescents received such messages (Young et al. 2009; Klettke et al. 2014). Girls appear to be more likely to be victims of sexual dating violence than boys (Leen et al. 2013). These facts call for the design and implementation of effective programs for preventing adolescent sexual harassment.

The effectiveness of adolescent dating violence prevention programs has been mixed. A Cochrane meta-analysis on randomized controlled trials in educational and community settings showed no convincing evidence for a reduction in violence or for positive changes in attitudes, skills and behaviors related to relationship and dating violence (Fellmeth et al. 2013). The researchers argued that this lack of effect may have been underlain by a failure to transfer lessons learned to real-life situations, in other words, when faced with sexual harassment in their own lives, participants had been unable to apply their newly acquired knowledge and skills. However, more recent studies, and studies that were not included in the Cochrane meta-analysis, did demonstrate significant effects on sexually violent behavior and the factors the influence it. Three examples are *Benzies & Batchies*, *Shifting Boundaries*, and *Safe Dates*, all school-based dating violence prevention interventions (De Lijster et al. 2016; Taylor et al. 2013; Foshee et al. 1998; Foshee et al. 2004). It is also the case that interventions that took a gender-strategic approach or addressing a single-gender audience (all-female or all-male) reduced adolescent dating violence and improved attitudes, intention and knowledge more effectively than mixed gender-programs (Wolfe et al. 2009; Vladutiu et al. 2011). These results require further exploration of conditions for effectiveness.

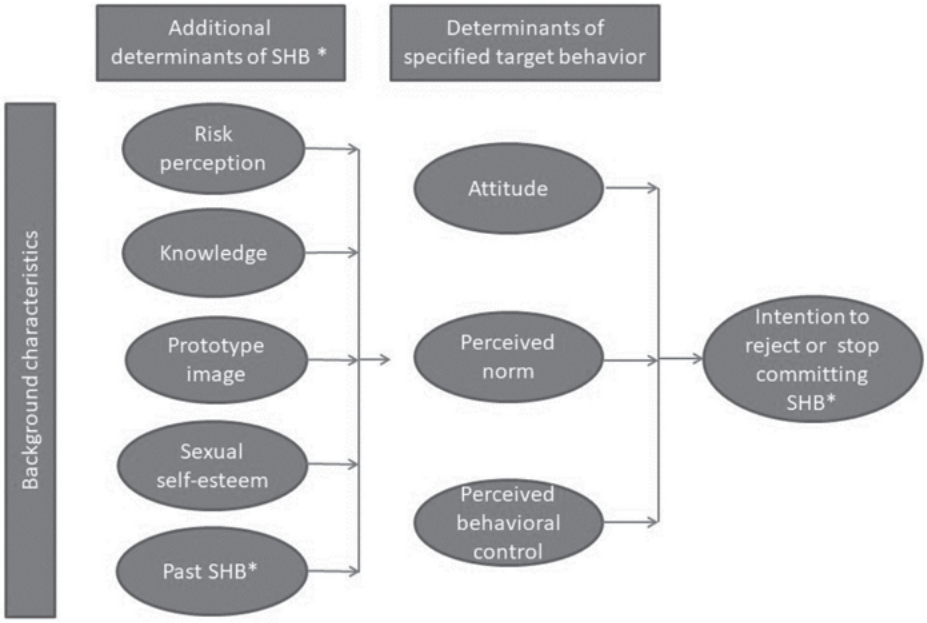
To date, research on adolescent victimization and perpetration has focused either on motivations to engage in sexual harassment or on risk factors, such as child maltreatment, hostile friendships, and problematic substance use; and also on protective factors such as grade point average and empathy (Chiodo et al. 2012; Vagi et al. 2013; Langhinrichsen-Rohling et al. 2012; Cooper et al. 2016). However, less attention has been paid to determinants of behavior. Within the context of preventing adolescent sexual harassment, it is essential to know which underlying factors influence the behavior (Peters 2014). To design effective interventions, it is also

essential to select the most relevant determinants of behavior, i.e., those that are important and changeable (Crutzen et al. 2017). To design effective interventions, it is then essential to establish which intervention methods are most likely to positively influence not only these determinants, but also the conditions under which they will arise.

Intention to have sex and perceptions of peer sexual behavior are stable predictors of adolescent sexual behavior (Buhi and Goodson 2007). Risk perception and past sexual behaviors also seem to be predictors of adolescents' sexual activities (Drouin et al. 2013; Temple and Choi 2014). While the origins of these behavioral determinants lie in cognitive decision-making paths (Fishbein and Ajzen 2010), the decisions adolescents make are not only driven by a cognitive path, but are also strongly influenced by a social-reaction path. Research shows that adolescents are as capable of logical reasoning and of perceiving risk as adults are. However, when it comes to action, they engage in risky behaviors more than adults, especially when peers are present (Gardner and Steinberg 2005). Their decisions are also influenced by their mental images of a person performing certain risk behaviors, so-called prototype images (Gerrard et al. 2008; Jewell and Brown 2013). For example, adolescents who view the prototype of people engaging in sexting more favorably will themselves be more willing to engage in sexting (Walrave et al. 2015). A role in sexual decision-making is also played by knowledge of sexual health, and by sexual self-esteem (Guse et al. 2012; Rostosky et al. 2008). Adolescents with positive feelings about themselves as sexual beings report a greater ability to control key aspects of a sexual situation or interaction, and a greater ability to control their own behavior in the context of an interpersonal relationship, what is termed greater sexual self-efficacy (Rostosky et al. 2008).

Current Study

To provide empirical data that would support the use of theoretical models in the development of preventive interventions, this study focused on the associations between determinants of behavior and adolescent sexual harassment. More specifically, we wished to establish which determinants of the Reasoned Action Approach - attitude, perceived norm and perceived behavioral control (Fishbein and Ajzen 2010) - are associated with the intention to reject or to stop adolescent sexual harassment (see Figure 1). We also examined whether our understanding of the dependent variables would be amplified by five additional determinants deemed to be important in the literature: risk perception, knowledge, prototype image, sexual self-esteem, and sexual harassment behavior in the past six months. Finally, we explored which beliefs underlying all eight of these determinants, should be selected when developing a program to prevent adolescent sexual harassment behavior.



* Sexual harassment behavior

Fig. 1 Behavioral model

Method

Participants and Procedure

We conducted a cross-sectional study in 25 schools for pre-vocational and senior general secondary education in urban areas in the Netherlands (Government of the Netherlands n.d.). The study group consisted of male and female urban adolescents aged 12-16 from various ethnic backgrounds. In total, 683 students filled out a pen-and-paper questionnaire in the classroom in the presence of a research assistant. Complete data were available for 571 respondents.

A passive consent procedure was applied. The protocol was approved by the Research Board of the Netherlands Organisation for Applied Scientific Research (TNO).

Measures

Please also see Appendix A.

Behavioral intention

This study had three central outcomes: (1) the intention to reject sexting (i.e., sexually explicit pictures or messages); (2) the intention to reject sexual remarks; and (3) the intention to stop kissing someone against his/her will (i.e., dating violence). For the purpose of this research, three imaginary scenarios were devised, each depicting a situation drawn from a real-life example involving adolescent sexual harassment (see Appendix A). Scenario A, rejecting sexting, involved letting a friend know that you did not want to receive sexually explicit pictures or messages through the internet or in a SMS text message. Scenario B, rejecting sexual remarks, involved telling a friend that he or she should not shout 'hot chick/hunk' to someone. Scenario C, stopping committing dating violence, involved stopping kissing someone against his or her will. After each scenario had been presented one question targeting the intention to reject or to stop committing the described behavior was asked (Fishbein and Ajzen 2010). For example: "In future, do you intend to say 'no' if someone wants to show you such sites?". Responses were on a five-point scale, ranging from "not at all" (1) to "totally" (5).

Determinants of behavior

Three determinants - attitude, perceived norm and perceived behavioral control - were measured on the basis of the Reasoned Action Approach (RAA; Fishbein and Ajzen 2010). Per scenario, i.e., rejecting sexting, rejecting sexual remarks, and stopping committing dating violence, corresponding questions targeting these three determinants were asked. One question targeting the attitude towards the described behavior was asked. For example: "State your opinion of the following: someone sends you a sexually explicit picture through the internet. You click away the message and reply 'not interested'". One corresponding question targeting perceived norm was asked. For example: "State what your friends would think of this: someone sends you a sexually explicit picture through the internet. You click away the message and reply 'not interested'". One question targeting perceived behavioral control to reject or to stop committing the described behavior was asked. For example: "Do you think you'd be able to state clearly that you don't want to see that site?". For each question, responses were on a five-point scale, ranging from "not at all" (1) to "totally" (5).

Additional determinants of behavior

Four additional determinants of behavior were measured: risk perception, knowledge, prototype image, and sexual self-esteem. Risk perception was assessed on the basis of two

questions on a five-point scale (1 = “absolutely no chance”; 5 = “big chance”) (Weinstein 1988). Respondents were asked to rate the chance of receiving sexually explicit pictures or messages and also to rate the chance that someone would force them to have or allow sexual contact. To create a risk perception scale, scores were summed (Pearson r = .39). Knowledge of appropriate behavior regarding the perpetration or rejection of sexual harassment was assessed on the basis of three multiple-choice questions. For example, response options to the question “If you don’t want to have sex yet, how would you deal with it?” were (a) “Say nothing and hope your friend will forget”; (b) “You don’t have to state that; someone will notice automatically”; and (c) “At the right time, state clearly that you’re not ready to have sex yet”. Scores were summed to form a general knowledge measure (score range 0 – 3). Prototype image of a victim was assessed by presenting two separate descriptions of an adolescent victim of sexual harassment, one male and one female, on the basis of the Prototype Willingness Model (Gibbons et al. 2004; Walrave et al. 2015). Respondents were asked to state their opinions of the prototypes depicted, i.e., whether they thought of the male and female victims as being either tough (undesired image; (1)) or weak (desired image; (5)); and as being either bad (desired image; (1)) or good (undesired image; (5)). For example: “State your opinion of the following: I think that a boy who allows sex (such as kissing, fondling or having sexual intercourse), when he doesn’t want to, is strong / is weak”. Scores on the two weakness’ items were summed to create a scale (Pearson r = .83). The same was done with the two items on badness (Pearson r = .70). Prototype image of a perpetrator was assessed by presenting two separate descriptions of an adolescent perpetrator of sexual harassment, one male and one female. Respondents were asked to state their opinions of each of the prototypes depicted, i.e., whether they thought of the male and female perpetrators as being either tough (undesired image; (1)) or weak (desired image; (5)) and being either bad (desired image; (1)) or good (undesired image; (5)). Scores on the two weakness’ items were summed to create a scale (Pearson r = .78). The same was done with the two items on badness (Pearson r = .62). Sexual self-esteem was assessed using a scale consisting of seven items on the basis of earlier research that had been adapted for this purpose (Rostosky et al. 2008). For example: “When it comes to sex, I know how far I want to go (for instance holding hands, kissing, fondling or having sexual intercourse)”. Responses were on a five-point scale, ranging from “totally agree” (1) to “totally disagree” (5). Cronbach’s alpha of the scale was .88.

Past sexual harassment behavior

Items targeting sexual harassment behaviors during the past six months were based on questionnaires used in Dutch research and adapted for this purpose (De Graaf et al. 2005; Kuyper et al. 2009). Separate questions were presented with regard to the rejection and perpetration of sexting, of sexual remarks and of dating violence; and with regard to being a victim of sexting,

of sexual remarks and of dating violence. For example, with regard to victimization: “In the past six months, did you let a friend know you didn’t want to receive sexually explicit pictures or messages?” (rejection); “In the past six months, has someone sent or shown you sexually explicit pictures or messages, even though you didn’t want them to?”; and with regard to perpetration: “In the past six months, have you sent or shown someone sexually explicit pictures or messages, even though that person didn’t want you to?”. For each question, the response options were “never” (1), “once” (2) and “more than once” (3).

Background characteristics

The questionnaire comprised questions on demographic variables (sex, age, ethnicity, educational level); being in a relationship; and having sexual experience (either with or without intercourse). The adolescents’ ethnicity was determined on the basis of the parents’ country of birth: if both parents had been born in the Netherlands, ethnicity was categorized as native, and otherwise as non-native.

The questionnaire was pretested among students of various educational levels and ethnic backgrounds.

Data Analysis

We checked for completeness of the data by inspecting missing items per respondent regarding background characteristics, behavioral determinants and scales of the additional determinants. If a respondent’s data were incomplete (i.e., if one or more of the items or scales were missing), the respondent’s data were excluded from the analyses.

We obtained descriptive statistics relevant to the following items: demographic characteristics, being in a relationship, having sexual experience without intercourse, having experience of sexual intercourse, and frequencies of sexual harassment behaviors in the past six months (rejection, victimization and perpetration). As well as using crosstabs to test for differences between boys and girls, we used descriptive statistics and Student’s t-tests to analyze differences regarding the intention to reject sexually explicit pictures and sexual remarks, and regarding the intention to stop dating violence.

Next, per scenario, we inspected Pearson’s correlation coefficients for behavioral intention, behavioral determinants, additional determinants, past sexual harassment behavior matching the scenario, and background characteristics (Peters 2014). Items on attitude and perceived norm regarding scenario B and C were recoded, with higher scores indicating a more negative attitude towards the described behavior.

For each of the three scenarios, we used hierarchical linear regression analysis to examine relationships between the determinants and behavioral intention, controlling for other

determinants and background characteristics. In the first block we entered the three behavioral determinants attitude, perceived norm and perceived behavioral control (Franssens et al. 2009). In the second block we entered, per scenario, additional determinants that had been shown by the bivariate analyses to have a significant association with intention, and past sexual harassment behavior. In the third block we entered background characteristics which had been significantly correlated in the bivariate analyses. To gain an understanding of the degree to which the determinants contributed to the target behavior (Peters 2014), we obtained the explained variance of the final model for each scenario by means of R^2. A significance level of .05 was used. Statistical analyses were performed using SPSS Statistics 23 (IBM SPSS Statistics 23.0).

To select beliefs that may be relevant to future preventive interventions on adolescent sexual harassment, we used the Confidence Interval-Based Estimation of Relevance (CIBER) approach (Crutzen et al. 2017). CIBER is a method that makes it possible to process a large amount of information on means, confidence intervals and correlation coefficients of questionnaire items regarding beliefs on behavior. The CIBER approach uses data visualization to map the data onto spatial dimensions, and to indicate the relative width of sampling distributions and the subsequent variation that occurs in estimates over samples (Moinester and Gottfried 2014; Peters and Crutzen 2017). In the visual representations used in the CIBER approach, confidence intervals are represented using the diamond shapes commonly used for the aggregated effect size in meta-analyses. In other words, the CIBER approach acknowledges that, for data to become valuable information, several metrics, correlation coefficients, means, and the confidence intervals of both, need to be combined and interpreted. As the prevalence rates of sexual harassment behaviors differ between sexes, we used the R package Userfriendlyscience (R Development Core Team 2014; Peters 2017) to apply the CIBER approach separately for boys and girls to the data on beliefs about sexual harassment for each of the three scenario's.

Results

Respondents' Characteristics

Of the students, 112 failed to fill out one or more questionnaire items on background characteristics, behavioral determinants and additional behavioral determinants. With regard to age, ethnicity, sex and educational level, these respondents did not differ significantly from those who filled out the whole questionnaire.

The mean age of the remaining 571 participants was 14.37 years (SD=0.76). Ethnically, nearly half of the respondents were considered to be Dutch natives, as both parents were born in the Netherlands. One third of the respondents attended schools for pre-vocational secondary education. While one fifth reported being in a relationship, nearly half reported having had

sexual experience without intercourse (such as kissing and fondling). Eleven percent reported experience of sexual intercourse (once or more) (see Table 1).

A quarter of the total group of respondents reported any victimization (e.g., someone had sent them sexually explicit pictures or messages), one third reported having rejected any form of sexual harassment behavior once or more in the past six months (e.g., they had let a friend know they did not want to receive sexually explicit pictures or messages); and 14% reported any form of perpetration (e.g., they had sent sexually explicit pictures or messages).

There were significant differences between the sexes: more girls had rejected any form of sexual harassment (41%) than boys (27%); and more had been a victim of it (33% vs. 20%). Significantly more boys (21%) than girls (8%) reported perpetration of any sexual harassment. More detailed analysis of the various behaviors within the total group of respondents showed that, at 15% the highest frequencies were those for having received sexual remarks from someone once or more in the past six months (victimization), whereas the lowest (1%) were those for having forced someone to have or allow sexual contact (perpetration).

For the total group, mean scores for behavioral intentions to reject sexual harassment behavior and to stop committing it were relatively high, with overall statistically significant higher mean scores for girls than for boys (see Table 1).

Correlations

Appendices B, C and D show the results of the correlations between behavioral intention, behavioral determinants, additional determinants, past sexual harassment behaviors and background characteristics. At univariate level, the three main behavioral determinants were significantly positive correlated with the intention to reject sexual harassment behavior (scenarios A and B) and with the intention to stop committing it (scenario C). The additional determinants risk perception, both prototype images of a victim (bad-good; weak-strong), and sexual self-esteem, were significantly positive correlated with the intention to reject sexually explicit pictures or messages (scenario A) and sexual remarks (scenario B). Knowledge was significantly positive correlated with the intention to reject sexual remarks. In addition, knowledge, both prototype images of a perpetrator (bad-good; weak-strong), and sexual self-esteem were significantly positive correlated with the intention to stop unwanted kissing (scenario C).

With regard to the background characteristics, we found that sex (i.e., being female) was significantly correlated with the behavioral intentions in all three scenarios; that age (i.e., being older) and ethnicity (i.e., being native) were significantly correlated with the intention to reject sexually explicit pictures or messages (scenario A); and that educational level (i.e., having a higher educational level) was significantly correlated with the intention to stop unwanted kissing (scenario C).

Table 1. Respondents' background characteristics

		total group	boys	girls	p[3]
		(N = 571[1])	(n = 273[1])	(n = 298[1])	
		M (SD)	m (sd)	m (sd)	
Age in years		14.37 (0.76)	14.38 (0.81)	14.36 (0.72)	ns
		N (%)[2]	n (%)[2]	n (%)[2]	
Ethnicity	native	244 (43)	110 (40)	134 (45)	ns
	non-native	326 (57)	162 (60)	164 (55)	
Educational level	pre-vocational (vocationally oriented and mixed learning pathways)	198 (35)	83 (30)	115 (39)	*
	pre-vocational (theoretical learning pathway)/senior general	373 (65)	190 (70)	183 (61)	
Currently in a relationship	yes	110 (19)	45 (17)	65 (22)	ns
	no	459 (81)	226 (83)	233 (78)	
Sexual experience without intercourse (such as kissing, fondling)	never	301 (53)	144 (53)	157 (52)	ns
	once	55 (10)	32 (12)	23 (8)	
	more than once	215 (37)	97 (35)	118 (40)	
Had had experience of sexual intercourse	never	505 (89)	241 (88)	264 (89)	ns
	once	17 (3)	10 (4)	7 (3)	
	more than once	46 (8)	21 (8)	25 (8)	
Sexual harassment victimization (in the past 6 months)	never	419 (73)	219 (80)	200 (67)	**
	once, or more	152 (27)	54 (20)	98 (33)	
- someone had sent the respondent sexually explicit pictures or messages	never	490 (86)	242 (89)	248 (83)	ns
	once	56 (10)	22 (8)	34 (12)	
	more than once	25 (4)	9 (3)	16 (5)	

Table 1. Continued

		total group	boys	girls	p[3]
- someone had made sexual remarks about the respondent	never	485 (85)	248 (91)	237 (80)	**
	once	48 (8)	12 (4)	36 (12)	
	more than once	38 (7)	13 (5)	25 (8)	
- someone had forced the respondent to have or allow sexual contact	never	551 (97)	270 (99)	281 (94)	**
	once	12 (2)	2 (1)	10 (4)	
	more than once	8 (1)	1 (0)	7 (2)	
Rejection of sexual harassment (in the past 6 months)	never	372 (66)	198 (73)	174 (59)	**
	once, or more	195 (34)	75 (27)	120 (41)	
- respondent had let a friend know that he/she did not want to receive sexually explicit pictures or messages	never	480 (84)	244 (89)	236 (79)	**
	once	51 (9)	18 (7)	33 (11)	
	more than once	40 (7)	11 (4)	29 (10)	
- respondent had told a friend that he/she should not shout 'hot chick/ hunk' at someone	never	484 (85)	235 (86)	249 (84)	ns
	once	47 (8)	20 (7)	27 (9)	
	more than once	40 (7)	18 (7)	22 (7)	
- respondent had let a friend know that he/she did not want to go any further in sexual activity	never	483 (85)	261 (95)	222 (75)	**
	once	49 (9)	10 (4)	49 (13)	
	more than once	36 (6)	2 (1)	36 (12)	
Sexual harassment perpetration (in the past 6 months)	never	490 (86)	215 (79)	275 (92)	**
	once, or more	81 (14)	58 (21)	23 (8)	
- respondent had sent sexually explicit pictures or messages to someone	never	552 (97)	262 (96)	290 (97)	ns
	once	12 (2)	6 (2)	6 (2)	
	more than once	7 (1)	5 (2)	2 (1)	

Table 1. Continued

		total group	boys	girls	p[3]
- respondent had made sexual remarks about someone	never	503 (88)	224 (82)	279 (94)	**
	once	39 (7)	24 (9)	15 (5)	
	more than once	29 (5)	25 (9)	4 (1)	
- respondent had forced someone to have or allow sexual contact	never	566 (99)	269 (99)	297 (100)	ns
	once	1 (0)	1 (0)	0 (0)	
	more than once	4 (1)	3 (1)	1 (0)	
		M (SD)	m (sd)	m (sd)	p[4]
Intention to say 'no' when someone wanted to show the respondent sexually explicit websites	range 1 – 5	4.13 (1.13)	3.75 (1.25)	4.47 (0.87)	**
Intention to tell someone making unwanted sexual remarks that he/she was annoying the respondent	range 1 – 5	3.74 (1.28)	3.52 (1.34)	3.95 (1.18)	**
Intention to stop kissing someone when he/she resisted	range 1 – 5	4.17 (1.09)	3.93 (1.19)	4.39 (0.94)	**

** $p < 0.01$; * $p < 0.05$

[1] Total number of respondents

[2] Not all background characteristics were available or could be determined

[3] Chi square test

[4] Student's *t* test

None of the intentions were significantly correlated with the following: sexual harassment victimization, rejection or perpetration in the past six months; being in a relationship; or sexual experience without intercourse.

Perceived behavioral control was the variable most strongly correlated both with the intention to reject sexual harassment behavior (reject sexually explicit pictures or messages, r = 0.42; reject sexual remarks, r = 0.51), and with the intention to stop committing it (stop unwanted kissing, r = 0.43).

Hierarchical Regression Analyses

Tables 2 and 3 show the results of the hierarchical regression analyses of the intentions to reject sexual harassment behavior (scenarios A and B). Of the three behavioral determinants, perceived behavioral control was found, after control for the other behavioral determinants, to be significantly associated with the intention to reject sexually explicit pictures or messages, and the intention to reject sexual remarks (i.e., having more confidence in being able to reject sexual harassment). The intention to reject sexually explicit pictures or messages was also predicted by two behavioral determinants: attitude (i.e., having a more positive attitude towards rejecting the pictures or messages) and perceived norm (i.e., thinking your friends would approve of you rejecting the pictures or messages).

With regard to the additional determinants of behavior, risk perception (i.e., rating as low the chance that you might yourself become a victim of sexual harassment) and prototype image of a victim (i.e., rating the image of victim of sexual harassment as bad) were both significantly associated with the intention to reject sexually explicit pictures or messages. Having a higher sexual self-esteem was significantly associated with the intention to reject sexual remarks. Finally, sex (i.e., being female) was significantly associated with the intention to reject sexually explicit pictures or messages and with the intention to reject sexual remarks. Age (i.e., being older) was associated with the intention to reject sexually explicit pictures or messages.
In both scenarios, the greatest part of the explained variance was constituted by the behavioral determinant(s) entered in step 1. Small contributions were made by the additional determinants (entered in step 2) and by the background characteristics (entered in step 3). The explained variance in the final models was moderate (34% for scenario A and 30% for scenarios B).

Table 2. Prediction of intention to reject sexual harassment behavior

scenario A: reject sexual pictures or messages

		model 1 ß [a]	model 2 ß [a]	model 3 ß [a]
RAA factors				
Attitude		.150	.124	.101
Perceived norm		.238	.196	.157
Perceived behavioral control		.342	.307	.299
	R^2	.278		
Additional determinants of behavior [b]				
Risk perception			.102	.101
Prototype image; victim (bad - good)			.132	.115
Prototype image; victim (weak - strong)			ns	ns
Sexual self-esteem			ns	ns
Rejection of sexual harassment (in the past 6 months)			ns	ns
	R^2		.313	
Background characteristics [b]				
Sex (1=boy, 2=girl)				.148
Ethnicity (1 = non-native, 2 = native)				ns
Age				.114
	R^2			.344

[a] all reported standardized Beta's are significant $p < 0.05$
[b] shown by the bivariate analyses to have a significant association with intention

N = 571

Table 3. Prediction of intention to reject sexual harassment behavior

scenario B: reject sexual remarks

		model 1 ß [a]	model 2 ß [a]	model 3 ß [a]
RAA factors				
Attitude		ns	ns	ns
Perceived norm		ns	ns	ns
Perceived behavioral control		.494	.455	.453
	R^2	.273		
Additional determinants of behavior [b]				
Risk perception			ns	ns
Knowledge			ns	ns
Prototype image; victim (bad - good)			ns	ns
Prototype image; victim (weak - strong)			ns	ns
Sexual self-esteem			.083	.077
Rejection of sexual harassment (in the past 6 months)			ns	ns
	R^2		.297	
Background characteristics [b]				
Sex (1=boy, 2=girl)				.082
	R^2			.303

[a] all reported standardized Beta's are significant $p < 0.05$
[b] shown by the bivariate analyses to have a significant association with intention
N = 571

Table 4 shows the results of the hierarchical regression analyses of the behavioral intention to stop unwanted kissing (scenario C). The intention to stop unwanted kissing was significantly associated with the following: behavioral determinant perceived behavioral control (i.e., having more confidence in being able to stop unwanted kissing); additional determinant sexual self-esteem (i.e., having higher sexual self-esteem); and with two background characteristics: sex (i.e., being female), and educational level (i.e., having a higher educational level). The final model explained 26% of the variance, which was relatively low.

Table 4. Prediction of intention to stop committing sexual harassment behavior

scenario C: stop unwanted kissing

		model 1 ß [a]	model 2 ß [a]	model 3 ß [a]
RAA factors				
Attitude		.087	ns	ns
Perceived norm		.108	ns	ns
Perceived behavioral control		.403	.364	.342
	R^2	.209		
Additional determinants of behavior [b]				
Knowledge			ns	ns
Prototype image; perpetrator (bad - good)			ns	ns
Prototype image; perpetrator (weak - strong)			ns	ns
Sexual self-esteem			.141	.137
Sexual harassment perpetration (in the past 6 months)			ns	ns
	R^2		.242	
Background characteristics [b]				
Sex (1=boy, 2=girl)				.097
Educational level (1 = low; 2 = high)				.088
	R^2			.256

[a] all reported standardized Beta's are significant $p < 0.05$
[b] shown by the bivariate analyses to have a significant association with intention
N = 571

Analyses Following the CIBER Approach

In each scenario, results for boys and girls differed with regard to beliefs showing room for improvement (i.e., lower mean scores) and relevancy (i.e., low or medium correlation) with regard to behavioral intention. Per scenario, figures 2 – 4 show the results of the CIBER approach analyses for boys, each plotted in a separate figure comprising two panels. The left-hand panel depicts the mean score per belief and its 99.99% confidence interval as a diamond, and the item score per respondent as dots around the diamond. The further the position of the diamond towards the left of the panel, the lower the mean score, which implies room for improvement with regard to the concerning belief. In the right-hand panel, each diamond represents the strength of the association (including its 95% confidence interval) between the belief and the behavioral intention with regard to each scenario. The further the position of the diamond from the middle, the greater the association between the belief and behavioral intention, and the greater the relevance of the belief in question.

In boys, beliefs concerning attitude and perceived social norm had lower mean scores and low correlations with regard to the intention to reject sexually explicit pictures or messages

(scenario A) (see Figure 2). Also in boys, beliefs concerning perceived behavioral control had lower mean scores and low correlations with regard to the intention to reject sexual remarks (scenario B; see Figure 3), and the intention to stop unwanted kissing (scenario C; see Figure 4). Boys' mean scores on the remaining beliefs were high. Per scenario, there were otherwise nearly no correlations between the remaining beliefs and behavioral intention.

For girls, higher mean scores (implying no room for improvement) and/or correlations close to zero (implying no relevancy) were found in the beliefs and behavioral intention in all three scenario's (see Figures 5 – 7).

Discussion

Sexual harassment behaviors occur in various forms, and many adolescents encounter them, as victims, perpetrators or both. Knowledge of the individual beliefs that underlie this behavior can help build effective interventions for preventing sexual harassment (Bartholomew Eldredge et al. 2016). In this study we examined the associations between determinants of behavior and the intention to reject or to stop committing sexual harassment in adolescents aged 12-16 years. We also collected data on adolescent victims and perpetrators of sexual harassment behaviors.

Our results show that significantly more girls than boys reported having been a victim of sexual harassment, and particularly of having received sexual remarks and being forced into sex. Boys, on the other hand, reported significantly more perpetration behaviors in the past six months than girls, particularly having made sexually focused remarks about someone. This is consistent with earlier research, which reported similar proportions of female victims and male perpetrators of sexual harassment (Leen et al. 2013; Jewell and Brown 2013). While the relative proportions of boys and girls who sent or received sexually explicit pictures or messages were not significantly different – which is also consistent with the results of a recent meta-analysis on the topic (Madigan et al. 2018) – significantly more girls than boys had rejected sexual harassment behavior once or more in the previous six months. Overall, the mean scores we found with regard to the intention to reject and the intention to stop committing sexual harassment were significantly higher for girls than for boys.

Fig. 2
Means and associations with intention of boys to reject sexually explicit pictures/messages (R^2 = [.24; .43])

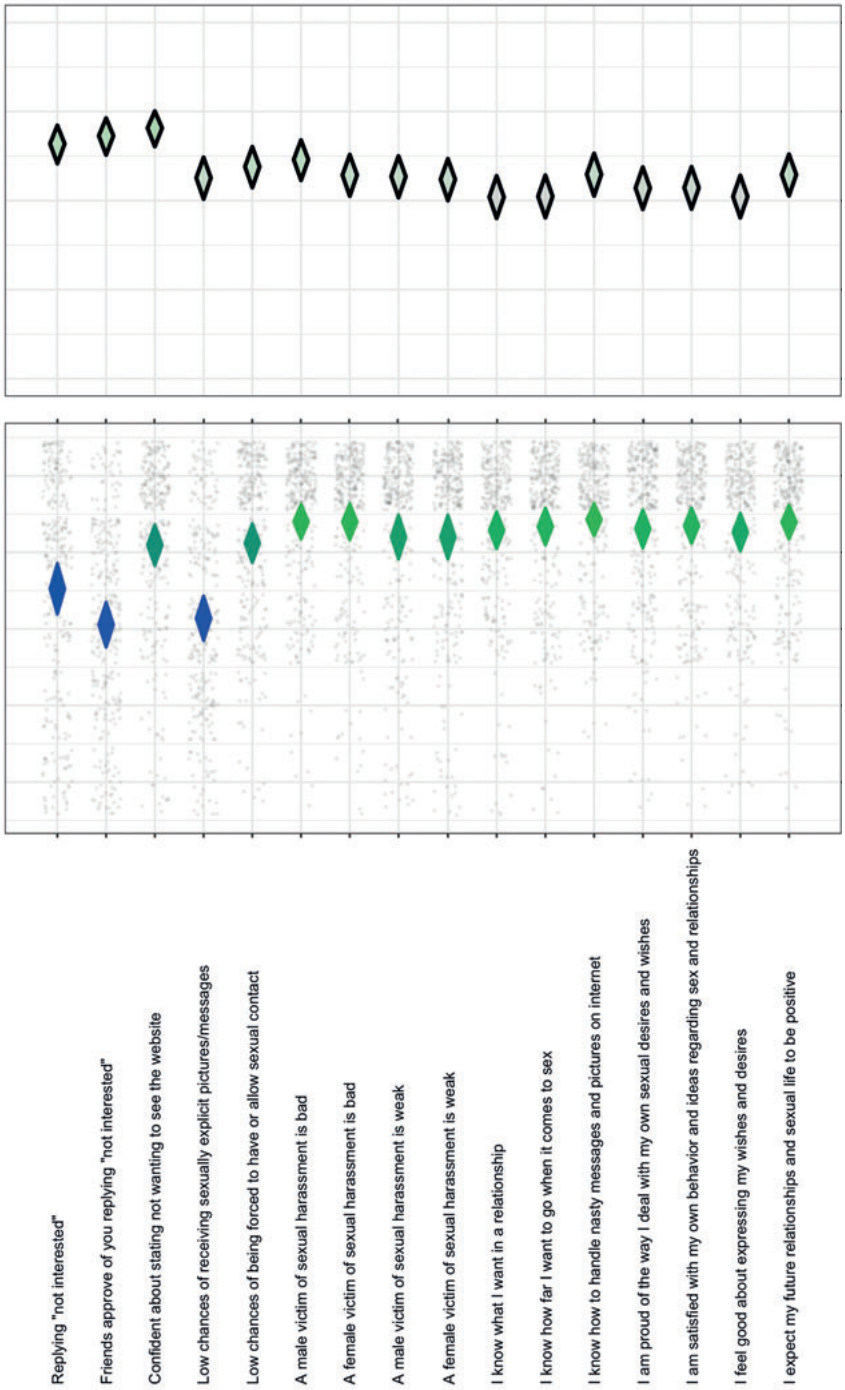


Fig. 3

Means and associations with intention of boys to reject sexual remarks (R^2 = [.26; .45])

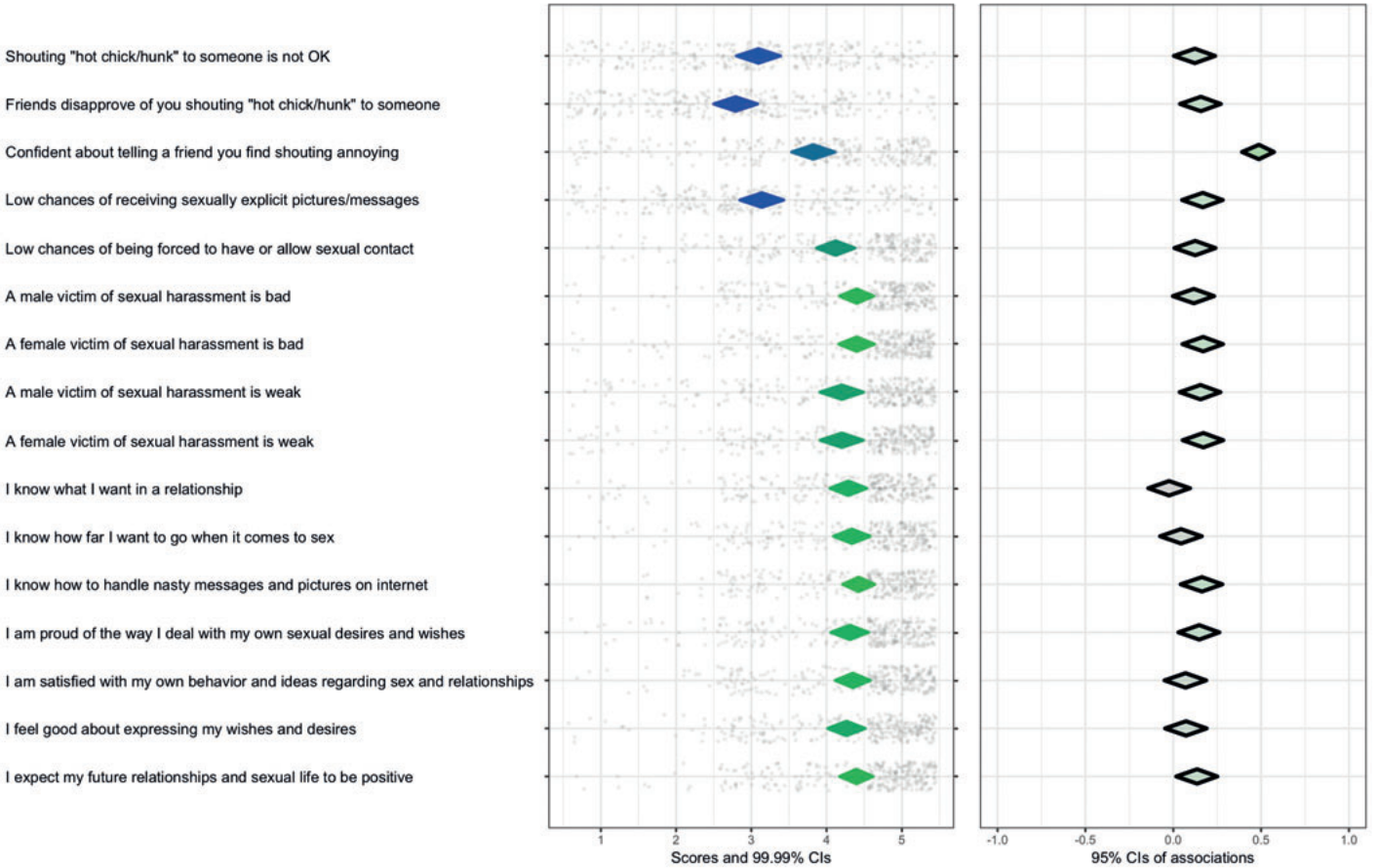


Fig. 4

Means and associations with intention of boys to stop kissing (R^2 = [.22; .42])

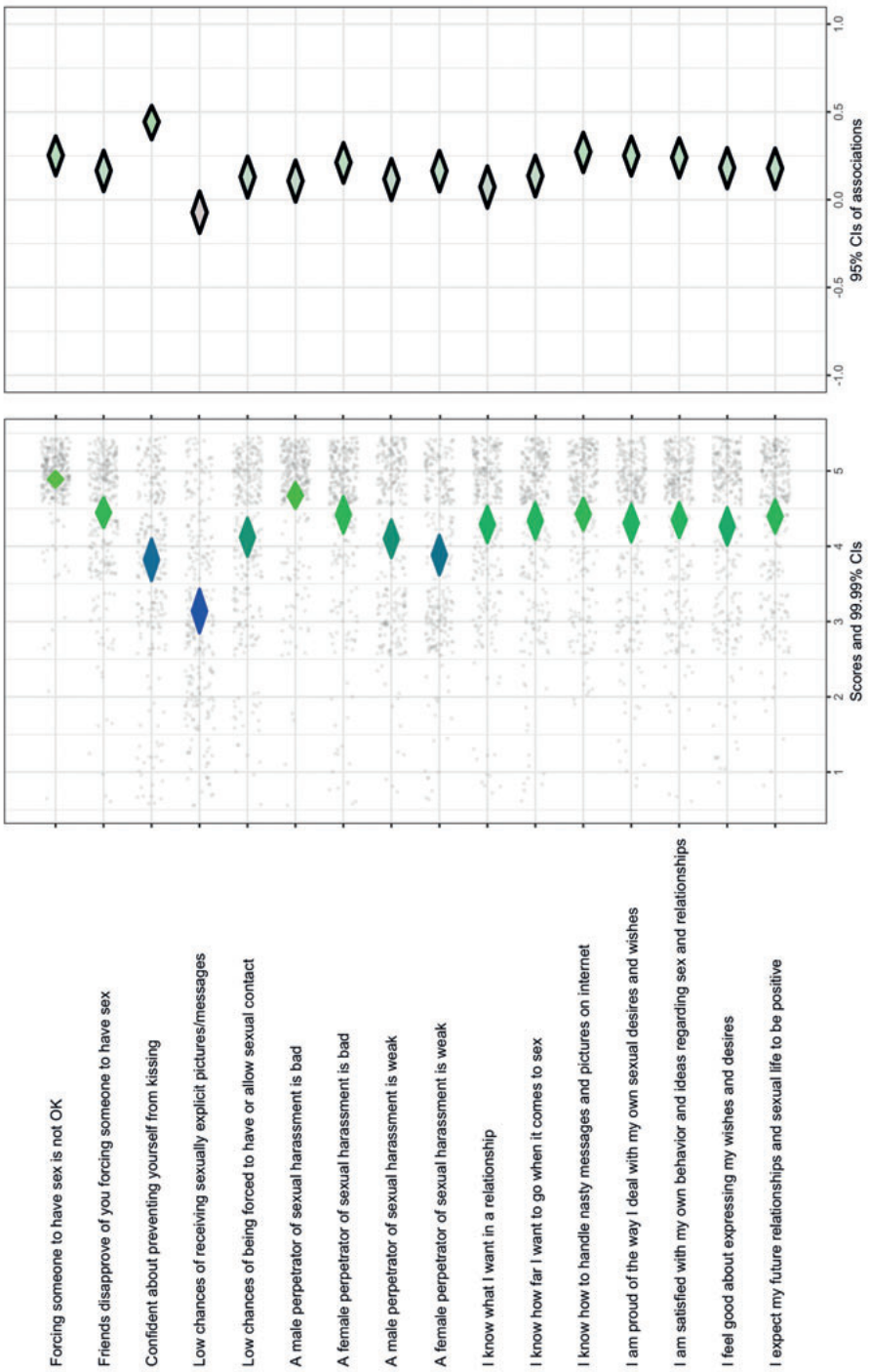


Fig. 5

Means and associations with intention of girls to reject sexually explicit pictures/messages (R^2 = [.22; .4])

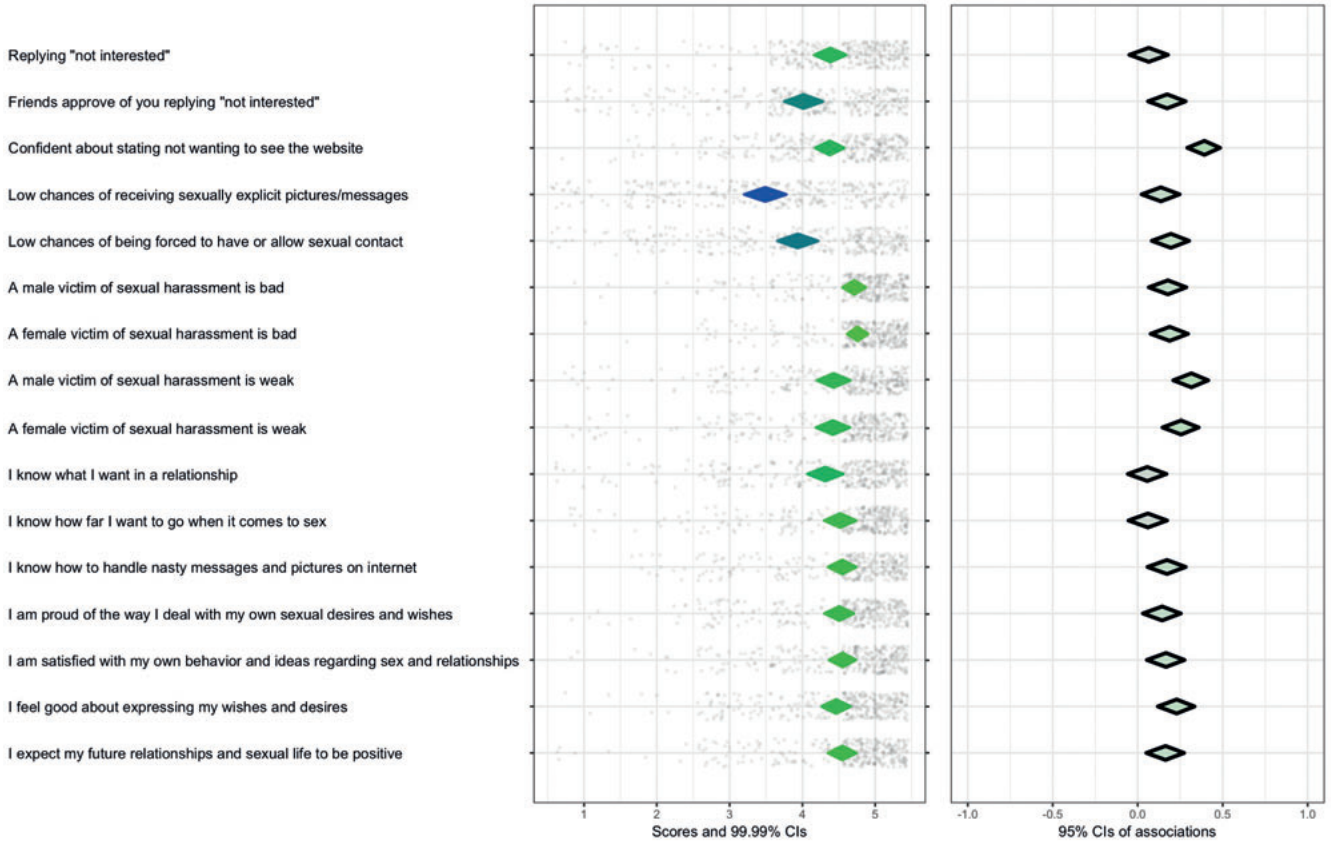


Fig. 6
Means and associations with intention of girls to reject sexual remarks (R^2 = [.19; .37])

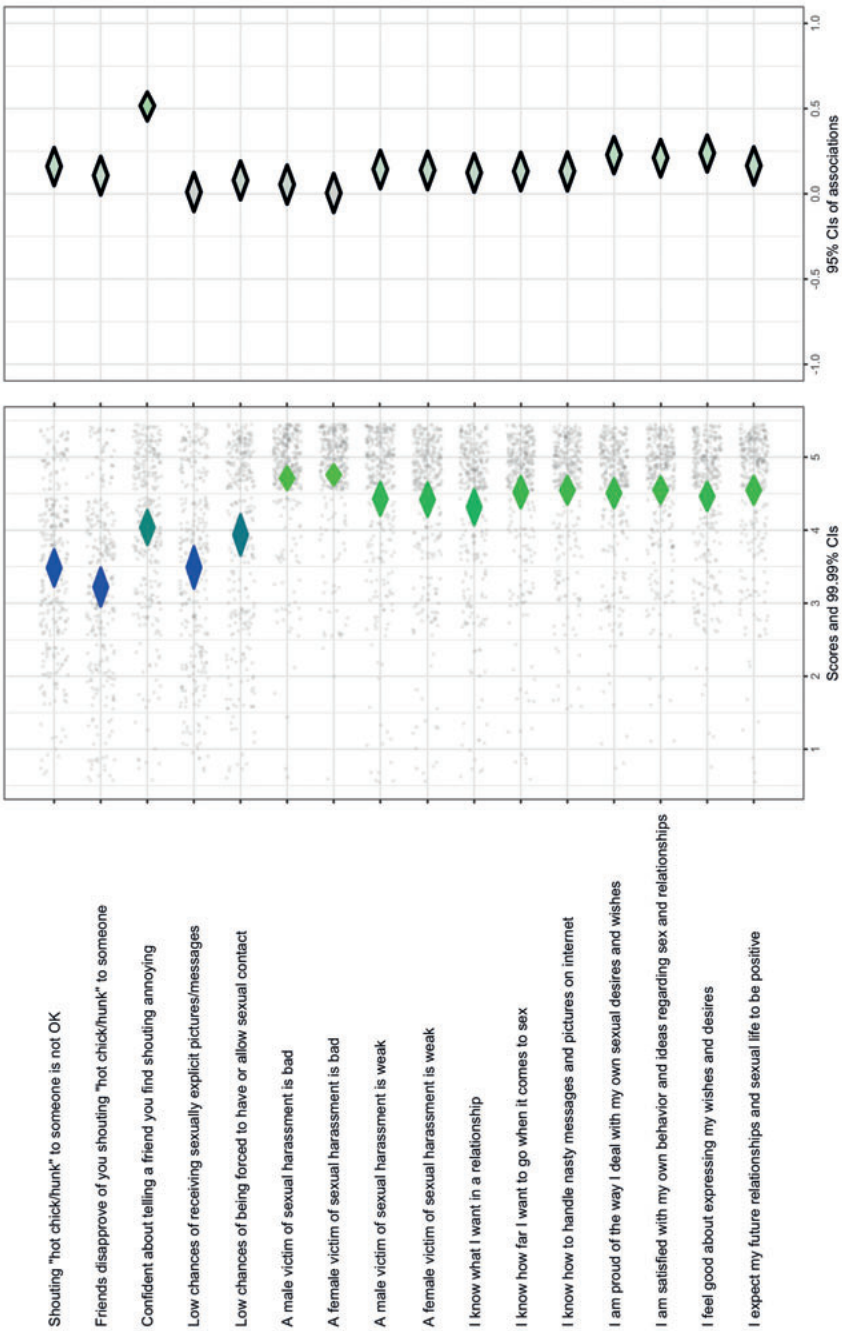
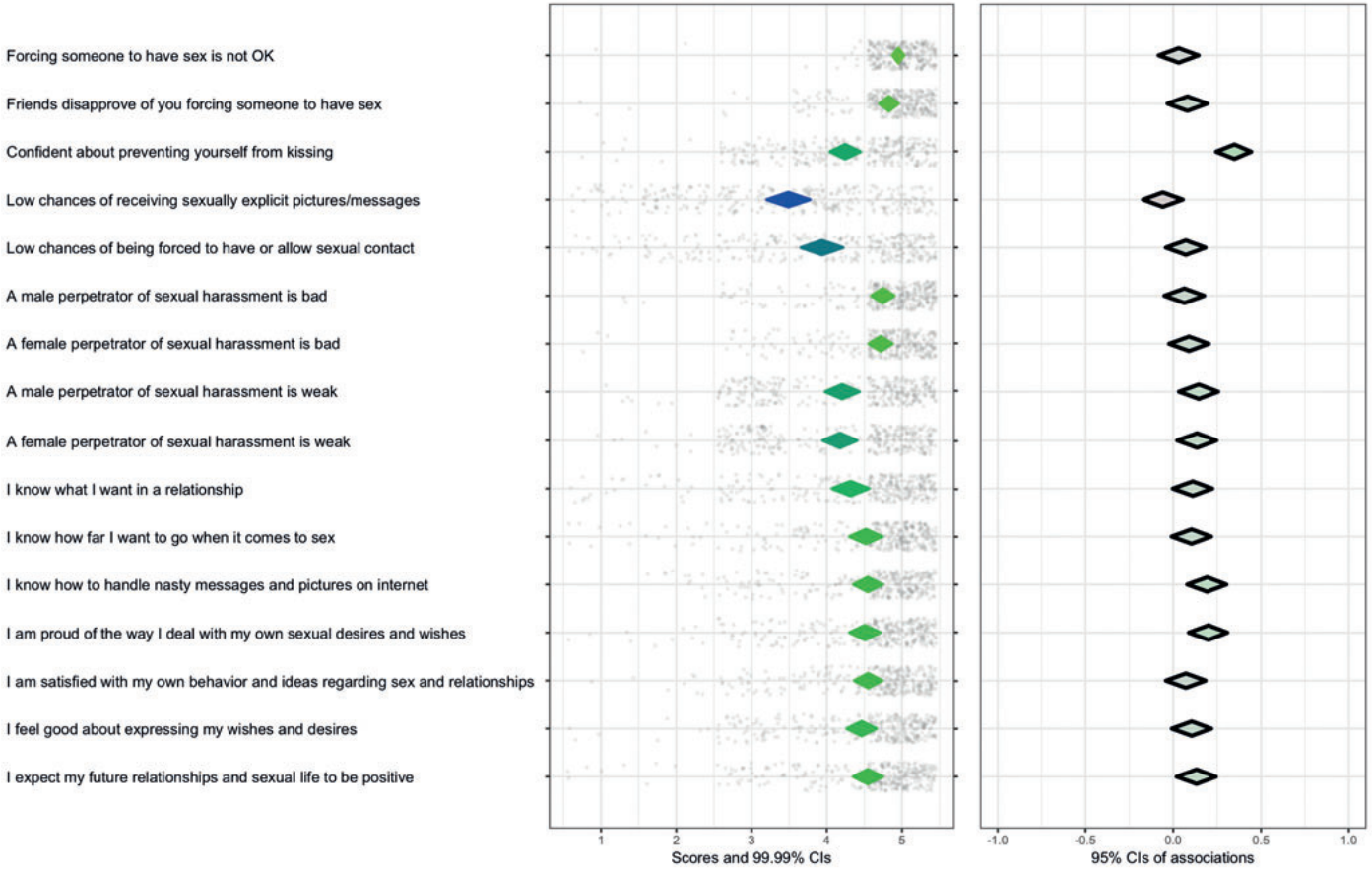


Fig. 7

Means and associations with intention of girls to stop kissing (R^2 = [.1; .26])



This may imply that girls' sexual self-esteem is greater than boys', and that girls have stronger beliefs about their own needs and wishes with regard to sexual behaviors.

As we were interested in the associations between determinants of behavior and behavioral intentions, we analyzed three scenarios: two related to the intention to reject sexual harassment (in particular the rejection of sexting and of sexual remarks), and one related to the intention to stop committing it, which we operationalized as stopping kissing someone against their will. The hierarchical analyses showed that, of the three behavioral determinants, perceived behavioral control was significantly associated both with the intention to reject sexual harassment (i.e., being more confident about being able to reject sexually explicit pictures and remarks) and with the intention to stop committing it (i.e., being more confident about being able to stop kissing someone against their will). These results are in line with previous research in which perceived behavioral control was a significant predictor of behavioral intention with regard to rejecting sexual harassment (Li et al. 2010). We also found that sex was significantly associated with behavioral intention in all three scenarios, suggesting that girls have greater intentions than boys to reject sexually explicit pictures or messages and sexual remarks and to stop kissing someone against their will. As stated above, this may be related to girls' greater sexual self-esteem. It may also be related to girls' higher mean scores on intention.

We found that age (i.e., being older) was associated with the intention to reject sexually explicit pictures or messages. This might be expected, as the rates at which young people sent and received sexts were found to increase with age (Madigan et al. 2018); and as some 40% of adolescents aged 11-16 blocked the person who had sent sexually explicit messages, and/or deleted the unwanted sexual messages (Livingstone et al. 2011).

As the explained variance of the three final models was moderate to low, beliefs other than those we included in the determinants within the model may be important to the intention to reject or to stop sexual harassment. For example, due to negative experiences in a prior romantic relationship, a person may voluntarily avoid sexual relationships (Byers et al. 2016).

It has been suggested that interventions intended to prevent adolescent sexual harassment are more effective if they take a gender-strategic approach or address an all-female or all-male audience than if they address a mixed-gender audience (Wolfe et al. 2009; Vladutiu et al. 2011). Our own results suggest that an intervention should at least allow for the fact that boys and girls have different beliefs and cognitions. For boys, attitude, perceived social norm and perceived behavioral control seem relevant to the prevention of sexual harassment, and show scope for improvement. In contrast, we found no specific relevant beliefs showing room for improvement for girls.

Strengths and Limitations

One strength of this study is the high response rate. The study sample consisted of 571 students (mean age 14.37 years) who filled out the questionnaire in the classroom, all of whom continued to participate in the research. This makes it possible to generalize our results to adolescents similar to those in our study group, i.e., students in urban schools for preparatory secondary vocational education. Our research also provides insight into the beliefs and determinants of the adolescent sexual harassment behaviors that are relatively frequent in the 12-14 age category (Houck et al. 2013).

One limitation is the cross-sectional design of our study, which did not make it possible to infer causal relationships. Further research with a longitudinal design is now necessary. Another limitation is our use of self-reports through pen-and-paper questionnaires, posing questions on a delicate subject. However, compared to face-to-face and telephone interviews, self-administered questionnaires elicit a greater willingness to disclose sensitive information and are subject to lower social desirability bias (Bowling 2005).

Implications for Practice

As adolescents grow older, their rates of sexual harassment behaviors with regard to victimization and perpetration increase. It therefore becomes more important to teach them rejection behaviors and to improve their skills. Our results indicate that interventions targeting the intention to reject unwanted sexual behaviors such as sexting should aim to reinforce perceived behavioral control and to change attitude and perceived norm. They should also address beliefs about risk perception, prototype images and sexual self-esteem. The same applies to interventions targeting the intention to stop dating violence, such as stopping unwanted kissing, although beliefs about risk perception in this context seem less relevant. And although perceived norm only predicted the intention to reject sexually explicit pictures or messages, a critical role in enhancing efforts to prevent sexual violence is played by a multi-level approach that includes the individual level as well as the peer and community levels (Casey and Lindhorst 2009). We found sexual self-esteem to be a significant predictor of the intention to reject sexual harassment, and also the intention to stop committing it. Our earlier research in a school-based intervention for preventing adolescent sexual harassment showed that the intervention had a positive long term effect on students' sexual self-esteem (De Lijster et al. 2016). These results are promising and highlight the importance of incorporating behavior change techniques that target sexual self-esteem, and simultaneously focus on positive sexual development.

We found that sex - i.e., being female - was a significant predictor of the intentions to reject unwanted sexual behaviors and also to stop committing them. We also found that boys and girls differed with regard to their beliefs underlying the determinants of behavior. During the design of

preventive interventions targeting sexual harassment, we therefore argue that attention should be paid to sex. When applying general behavior change techniques, such as behavioral rehearsal and practice, self-assessment of affective consequences, social support and instruction on how to perform a behavior (Michie et al. 2013), it seems important not only to work with girls and boys together. Attention needs also to be paid to differences between the sexes, ensuring that each sex gains greater insight into the beliefs of the other, potentially increasing the effectiveness of the intervention.

Recommendations for Further Research

As our results indicate that different determinants predict different sexual harassment behaviors, further research is needed to gain a greater understanding of the harassment behaviors at hand. This might include both qualitative and longitudinal research into adolescent sexual harassment behaviors (perpetration, victimization and rejection). To increase the explained variance, research is also needed into additional determinants of adolescent sexual harassment behavior, such as family and school environment, friends and deviant behavior, and sexuality and relationships (De Bruijn et al. 2006).

Conclusion

This study builds on earlier research on risk and protective factors regarding adolescent sexual harassment behavior. We identified several determinants of the intention to reject sexual harassment behavior and of the intention to stop committing it, the most prominent being perceived behavioral control and sex. Those designing a preventive intervention targeting adolescent sexual harassment behavior should, at the very least, pay attention to the various beliefs and cognitions between the two sexes.

Compliance with Ethical Standards

Funding This work was supported by the Netherlands Organization for Health Research and Development (ZonMw), Grant No. 12427.0002.

Ethical Approval Under the Dutch Medical Research Involving Human Subjects Act, medical ethical approval was not required for this study.

Informed consent We applied a passive consent procedure: students could object to filling out the questionnaire.

Appendix A. Description scenarios

Scenario A: rejecting sexual pictures or messages

You and your friends are surfing the internet. You're watching You Tube films and listening to music videos while chatting with other friends. One of your friends tells about a website with a lot of nudity and sex. 'Let's have a look at it!', your friend calls out excitedly. But you're not at all enthusiastic - you've seen a site like that before, and thought it was stupid. You don't want to see one again.

Questionnaire item	*Description*
Behavior	Letting a friend know you do not want to receive sexually explicit pictures or messages through internet or SMS.
Intention	In future, do you intend to say 'no' if someone wants to show you such sites?
Attitude	State your opinion of the following: Someone sends you a sexually explicit picture through the internet. You click away the message and reply 'not interested'.
Perceived norm	State what your friends would think of the following: Someone sends you a sexually explicit picture through the internet. You click away the message and reply 'not interested'.
Perceived behavioral control	Do you think you'd be able to state clearly that you didn't want to see that site?

Scenario B: rejecting sexual remarks

You have arranged to meet up with some friends to go for a drink at a pavement café. Every time someone hot-looking (sexy-looking) walks by, one of your friends calls out loud 'Hey, good-looking, you look nice! Wanna hang out together?'. You find this annoying and wouldn't like it if someone said this to you.

Questionnaire item	*Description*
Behavior	Telling a friend that he/she shouldn't shout 'hot chick/hunk' at someone.
Intention	In future, do you intend to tell someone making unwanted remarks that he/she is annoying you?
Attitude	State your opinion of the following: You shout 'hot chick/hunk' at someone in the street.
Perceived norm	State what your friends would think of this: You shout at someone in the street that he/she is a 'hot chick/hunk'.
Perceived behavioral control	Do you think you'd be able to tell that friend that you find this annoying?

Scenario C: stopping unwanted kissing

You've been friends with D for a long time now. You're in love with D, but D doesn't know this. One afternoon you're both at your home, sitting on the couch and watching television. You keep moving towards D until you touch each other. You put your hand on D's knee and try to kiss him/her. You find that D doesn't want to kiss.

Questionnaire item	*Description*
Behavior	Forcing someone to have or to allow sexual contact (such as kissing, touching or sexual intercourse) when the other person does not want to.
Intention	In future, do you intend not to insist on kissing someone who resists?
Attitude	State your opinion of the following: You force someone to have sex with you.
Perceived norm	State what your friends would think of this: You force someone to have sex with you.
Perceived behavioral control	Do you think you'd be able to prevent yourself from kissing him/her?

Appendix B. Significant correlations between study variables for scenario A: rejecting sexually explicit pictures or messages (N = 571)

RAA	Intention to reject pictures or messages	**Int**																																	
	Attitude	.32	**	**Att**																															
	Perceived norm	.37	**	.40	**	**PN**																													
	Perceived behavioral control	.42	**	.21	**	.21	**	**PBC**																											
Additional	Risk perception	.19	**	ns		.17	**	.14	**	**RP**																									
	Knowledge	ns		.14	**	.12	**	.11	**	ns		**Know**																							
	Prototype image; victim (bad-good)	.26	**	.19	**	.19	**	.13	**	ns		ns		**PTV-BG**																					
	Prototype image; victim (weak-strong)	.22	**	.16	**	.17	**	.19	**	ns		ns		.38	**	**PTV-WS**																			
	Sexual harassment victimization [a]	ns		ns		ns		ns		-.25	**	ns		ns		ns		**SH-V**																	
	Rejection of sexual harassment [a]	ns		.12	**	ns		ns		-.11	**	ns		ns		ns		.27	**	**SH-R**															
	Sexual self-esteem	.15	**	.16	**	.13	**	.15	**	ns		.14	**	.15	**	.18	**	ns		ns		**SSE**													
Background	Sex (1 = boy; 2 = girl)	.32	**	.34	**	.37	**	.14	**	ns		.09	*	.22	**	.10	*	ns		.14	**	.11	**	**Sex**											
	Age	.12	**	ns		ns		ns		ns		ns		ns		ns		ns		ns		ns		ns		**Age**									
	Ethnicity (1 = non-native; 2 = native)	.08	*	ns		ns		.09	*	.13	**	-.13	**	ns		ns		ns		ns		.10	*	ns		.08	*	**Ethn**							
	Educational level (1 = low; 2 = high)	ns		ns		ns		ns		ns		ns		ns		ns		ns		-.17	**	ns		.09	*	ns		-.23	**	**EL**					
	Relationship (1 = yes; 2 = no)	ns		ns		ns		ns		.09	*	ns		ns		ns		ns		ns		-.13	**	ns		-.12	**	ns		ns	**Rel**				
	Sexual experience (without intercourse) (1 = never; 2 = once; 3 = more than once)	ns		ns		ns		ns		-.31	**	ns		ns		ns		.09	*	ns		.17	**	ns		.18	**	-.09	*	ns	-.32	**			

[a] in the past six months
** significant correlation at level p < .01
* significant correlation at level p < .05

Appendix C. Significant correlations between study variables for scenario B: rejecting sexually explicit remarks (N = 571)

RAA	Intention to reject remarks	**Int**																																	
	Attitude	.17	**	**Att**																															
	Perceived norm	.16	**	.64	**	**PN**																													
	Perceived behavioral control	.51	**	.11	*	.09	*	**PBC**																											
Additional	Risk perception	.12	**	.29	**	.32	**	ns		**RP**																									
	Knowledge	.13	**	ns		ns		.15	**	ns		**Know**																							
	Prototype image; victim (bad-good)	.14	**	.17	**	.16	**	.13	**	ns		ns		**PTV-BG**																					
	Prototype image; victim (weak-strong)	.18	**	ns		ns		.17	**	ns		ns		.38	**	**PTV-WS**																			
	Sexual harassment victimization [a]	ns		ns		-.09	*	ns		-.16	**	ns		ns		Ns		**SH-V**																	
	Rejection of sexual harassment [a]	ns		ns		ns		ns		-.09	*	ns		-.09	*	Ns		.26	**	**SH-R**															
	Sexual self-esteem	.19	**	ns		ns		.19	**	ns		.14	**	.15	**	.18	**	ns		ns		**SSE**													
Background	Sex (1 = boy; 2 = girl)	.17	**	.17	**	.18	**	.10	*	ns		.09	*	.22	**	.10	*	.14		ns		.11	**	**Sex**											
	Age	ns		ns		ns		ns		ns		ns		ns		Ns		ns		ns		ns		ns		**Age**									
	Ethnicity (1 = non-native; 2 = native)	ns		.16	**	.21	**	.16	**	.13	**	-.13	**	ns		Ns		.09	*	.13	**	.10	*	ns		.08	*	**Ethn**							
	Educational level (1 = low; 2 = high)	ns		-.09	*	-.09	*	ns		ns		ns		ns		Ns		ns		-.15	**	ns		-.09	*	ns		-.12	**	**EL**					
	Relationship (1 = yes; 2 = no)	ns		ns		.09	*	ns		.09	*	ns		ns		Ns		ns		-.09	*	-.13	**	ns		-.12	**	ns		ns	**Rel**				
	Sexual experience (without intercourse) (1 = never; 2 = once; 3 = more than once)	ns		-.25	**	-.20	**	ns		-.31	**	ns		ns		Ns		.12	**	ns		.17	**	ns		.18	**	-.09	*	ns	-.32	**			

[a] in the past six months
** significant correlation at level p < .01
* significant correlation at level p < .05

Appendix D. Significant correlations between study variables for scenario C: stopping unwanted kissing (N = 571)

RAA	Intention to stop unwanted kissing	**Int**																																		
	Attitude	.18	**	**Att**																																
	Perceived norm	.18	**	.25	**	**PN**																														
	Perceived behavioral control	.43	**	.16	**	.13	**	**PBC**																												
Additional	Risk perception	ns		ns		.15	**	ns		**RP**																										
	Knowledge	.13	**	.12	**	.08	*	.13	**	ns		**Know**																									
	Prototype image; perpetrator (bad-good)	.17	**	.17	**	.19	**	.13	**	.15	**	.09	*	**PTP-BG**																							
	Prototype image; perpetrator (weak-strong)	.17	**	.12	**	.22	**	.12	**	.11	**	ns		.37	**	**PTP-WS**																				
	Sexual harassment victimization [a]	ns		ns		ns		ns		-.18	**	ns		ns		ns		**SH-V**																	
	Sexual harassment perpetration [a]	ns		ns		ns		-.14	**	-.12	**	-.11	**	-.19	**	ns		.13	**	**SH-P**															
	Sexual self-esteem	.23	**	ns		.17	**	.12	**	ns		.14	**	ns		.14	**	ns		ns		**SSE**													
Background	Sex (1 = boy; 2 = girl)	.21	**	ns		.20	**	.26	**	ns		.09	*	.13	**	.10	*	.12	**	ns		.11	**	**Sex**											
	Age	ns		ns		ns		ns		ns		ns		ns		ns		ns		ns		ns		**Age**										
	Ethnicity (1 = non-native; 2 = native)	ns		ns		ns		ns		.13	**	-.13	**	ns		ns		ns		ns		.10	*	ns		.08	*	**Ethn**							
	Educational level (1 = low; 2 = high)	.12	**	ns		.09	*	ns		ns		ns		ns		ns		-.11	**	ns		ns		-.09	*	ns		-.23	**	**EL**					
	Relationship (1 = yes; 2 = no)	ns		ns		ns		ns		.09	*	ns		ns		ns		ns		ns		-.13	**	ns		-.12	**	ns		ns	**Rel**				
	Sexual experience (without intercourse) (1 = never; 2 = once; 3 = more than once)	ns		-.09	*	ns		ns		-.31	**	ns		-.13	**	ns		.17	**	ns		.17	**	ns		.18	**	-.09	*	ns	-.32	**			

[a] in the past six months

** significant correlations at level p < .01

* significant correlations at level p < .05

3

PREVENTING ADOLESCENT SEXUAL HARASSMENT: REVIEWING THE DEGREE OF PLANNING IN TWO SCHOOL-BASED INTERVENTIONS USING THE INTERVENTION MAPPING APPROACH

De Lijster, G.P.A., Kok, G., & Kocken, P.L. (2018).
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Abstract

As school-based programs for preventing adolescent sexual harassment are often developed by professionals themselves, their development is often unsystematic and unplanned. To help improve this process, we used the Intervention Mapping framework to retrospectively evaluate the development of two school-based programs, *Benzies & Batchies* and *Boys*, each of which was intended to prevent sexual harassment among adolescent students of a lower educational level in the Netherlands.

As well as doing desk research into the context and content of the interventions, we interviewed the initial developers on their experiences with the development process. Although both programs had been developed in practice and lacked a thorough theoretical foundation, the methods and materials used represented aspects of behavior-change theories. The developers of *Benzies & Batchies* had completed slightly more planning criteria within the six steps of the planning process, and had used more change methods than the developers of *Boys* had.

We recommend that parents should also be involved in the development of sex and relationship education programs, and should be allowed to participate in the program itself. To meet the needs of intervention developers, greater insight is also needed into the importance of the individual steps in the IM framework. In our view, the development of practice-based interventions will improve if future intervention developers combine evidence-based theories with their practice-based experience. This will increase the success and effectiveness of their interventions.

Introduction

When it comes to their sexual health, adolescents around the world are faced with various challenges, such as teenage pregnancy and sexually transmitted infection (Morris and Rushwan 2015). There has also been an increase in adolescent sexual harassment behaviors, such as sending and receiving nonconsensual sexually tinted messages (so-called 'sexting'), and performing and undergoing dating violence. Recent research shows a higher mean prevalence rate of 27% for receiving nonconsensual sexual messages compared to 15% of sending such messages; and an overall prevalence of 9% for sexual teen dating violence (Madigan et al. 2018; Wincentak et al. 2017).

After undergoing sexually harassment, young people in general, and vulnerable girls and boys in particular, are at risk for short and long term-health problems (Exner-Cortens et al. 2013). Various school-based programs therefore attempt to prevent sexual harassment. These programs differ in various ways, especially with regard to their methods and targeted outcomes, and also to the age and gender of their target populations (Lundgren and Amin 2015).

In their analysis of 55 qualitative studies among young people aged between 12-18 years in 10 different countries, Pound and colleagues (2016) concluded that school-based sex and relationship education did not meet the needs of the students receiving it. A second problem is that preventive programs paid little attention to sexual harassment (Kocken et al. 2007); a third is that there are few effective school-based programs on this topic (De Koker et al. 2014).

School-based programs are often developed by professionals in practice, and often lack the systematic and planned development that is a precondition for success (Schaalma et al. 2004). And if one wishes to review the theoretical basis of a sexual health program, one needs a systematic description not only of the context and content of the intervention, but also of its objectives, its performance and change objectives, and its change methods (Bartholomew Eldredge et al. 2016). Such a description can be provided by Intervention Mapping (IM), a six-step framework that enables those planning, developing, implementing and evaluating health-promotion programs to make effective decisions at each step (Bartholomew Eldredge et al. 2016) (see Figure 1).

The objective of IM step 1 is to conduct a needs assessment. This will make it possible to develop a logic model of the problem, i.e., of the factors that cause or influence the health problem on which the intervention will focus. The goal of step 2 is to develop a logic model of change, in which program planners specify what needs to change in behavior and the environment in order to improve health and quality of life. The goal of step 3 is to design the program on the basis of theory and evidence.

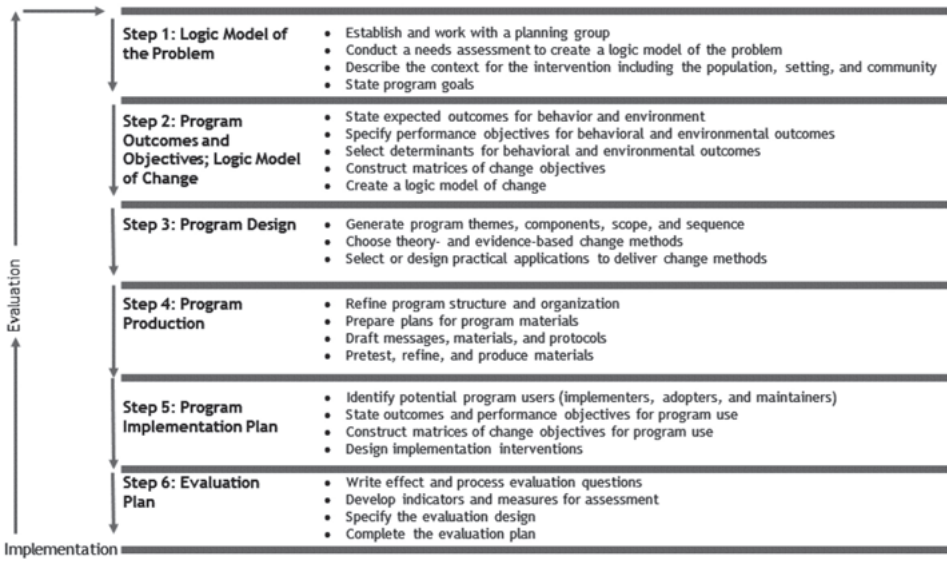


Fig. 1 The six steps of Intervention Mapping

The goal of step 4 is to produce the health-promotion program by building on the input gathered in the first three steps. The goal of step 5 is to develop an implementation plan for its adoption, implementation and maintenance. In the sixth and final step of the IM process, program planners develop and complete an evaluation plan. Within each of the six steps, several tasks must be completed in order to move on to the next step in the process. At the same time, this creates feedback loops. If the program planner takes proper account of these feedback loops, the intervention is more likely to be matched to the needs of the target group (Singh et al. 2006).

The IM framework enables program planners to make effective decisions during the planning process. Using its six steps, Godin and colleagues (2007) developed a planning tool that enables professionals to evaluate the potential success of an intervention by analyzing the rigor with which it was developed. The tool thus helps to the identify strengths and weaknesses of its planning.

Current Study

The objective of this study was to use the Intervention Mapping framework (Bartholomew Eldredge et al. 2016; Godin et al. 2007) to retrospectively evaluate the strengths and weaknesses of the planning process whereby two existing school-based programs for the prevention of sexual harassment among adolescents were developed in order to improve the development of such practice-based interventions. The target groups for these programs were adolescents attending schools for prevocational secondary education. The first program, *Benzies & Batchies*, which was

first given in 2011, targeted both boys and girls, and addressed the harassment behaviors from both the victim's and the perpetrator's perspectives. The second, *Boys*, which was first given in 2008, targeted adolescent males only, and stressed the perspective of the male perpetrator. The two interventions were among the first school-based programs targeting sexual harassment, and were implemented in Dutch secondary schools. They were selected for this paper due to their innovative approach to educating adolescents at a lower educational level on sex and relationship skills. Each was an example of good practice, and had been included in a national program of promising interventions for developing and evaluating sexual health programs for adolescents.

While each intervention had been developed by professionals in practice, little was known about the process of that development or the theoretical rationale underlying it. We therefore wished to evaluate the strengths and weaknesses of *Benzies & Batchies* and *Boys,* and thereby to contribute to the development of practice-based interventions. Specifically, we wished to establish the extent to which the development, implementation and evaluation of the interventions had followed a planned process. Taking the six steps of the Intervention Mapping protocol as our developmental criterion, we also wished to establish which steps had been carried out in the process of developing these interventions (Schaafsma et al. 2013; Godin et al. 2007)

Methods

Study Design

We combined desk research with interview methods for the retrospective study of the process whereby *Benzies & Batchies* and *Boys*, two school-based interventions for preventing adolescent sexual harassment, had been developed.

Desk research

We first conducted desk research on the context and content of the interventions. To this end, we consulted the interventions' websites and studied the intervention materials available. The theatre play of *Benzies & Batchies* comprised short scenes in which male and female peer-educators performed examples of sexual harassment (both victimization and perpetration), and of reactions to them. The play was followed by a group discussion led by the peer-educators. The students were then given skills and resilience training. *Boys* consisted of five consecutive lessons intended to teach skills with regard to social and sexual behavior, and to set standards for normal sexual behavior by boys. For an overview of the context and content of *Benzies & Batchies* and *Boys*, see Table 1

Table 1. Overview of the context and content of *Benzies & Batchies* and *Boys*

Intervention	Component	Duration	Content	Giver	Receiver	Setting
Benzies & Batchies	Introductory lesson	50 minutes	Letter for teacher	Teacher	Boys and girls, 12-14 years	Classroom
	Peer-performed theatre play, followed by group discussion	30 + 60 minutes	Script	Peer-educators		Auditorium
	Skills and resilience training	Three 100-150-minute lessons	Student workbook	Trained social skills instructor		Classroom
	Closing lesson	50 minutes	Letter for teacher	Teacher		Classroom
Boys	Classroom lesson	Five 50-minute lessons (basic lesson)	Box containing: - teacher's manual - DVD - worksheets	Trained male instructor	Boys, 12-14 years	Classroom

Face-to-face interviews

Next, for their opinions on the initial development processes, we held face-to-face interviews with the developers of the two interventions (Schaafsma et al. 2013). These interviews took place at the offices of the intervention owners. For the two interventions, we held three interviews with a total of four participants. Two researchers (GL and PK) took one interview with two participants, i.e., the initial developer of *Benzies & Batchies*, and a program trainer; and one researcher (GL) took two interviews, each with one of the initial developers of *Boys.* We based our interview topics on the six steps of the IM framework, adapting the language of our interview topics to better suit that of the interviewees, and using open-ended questions (Bartholomew Eldredge et al. 2016, pp 248). Each interview lasted about one hour. See Table 2 for an overview of the topics.

Table 2. Overview of interview topics

	IM Step 1: logic model of the problem
1	What was the reason for developing the program?
2	What was the base for the development of the program?
2a	Who was involved in the early development of the program ?
3	On which health problem/health behavior does the program focus?
3a	Which factors influence the health problem/health behavior?
3b	How was the need for the program determined?
4	For whom is the program intended?
	IM Step 2: logic model of change

Table 2. Continued

1	What is the main objective of the program?
1a	What are the objectives of the different lessons/parts of the lessons?
2	What change is expected?
2a	To what, or to whom?
2b	Are the expected changes formulated in terms of outcomes?
	IM Step 3: program design
1	Was the target group involved in the compilation of the program or parts of it?
2	On which theory is the intervention, or parts of it, based?
3	Which methods are used in the program and why?
4	Which strategies are used in the program and why?
5	Which materials are used in the program?
	IM Step 4: program production
1	Was the target group involved in the design of the program?
2	Were all the objectives that were chosen beforehand included in the program?
3	Were the methods, strategies and materials chosen tested beforehand?
4	To what extent does the program fit specific needs encountered in practice (i.e., at school)?
5	Was the program, or were parts of it, adapted during the program?
	IM Step 5: adoption and implementation
1	Were barriers to the implementation of the program envisaged?
2	Was the program implemented in its entirety?
3	To have the desired effect on the students, what is the minimum number of lessons or parts of lessons that need to be performed?
4	Are schools supported in carrying out the program? How?
5	Can the quality of any of the program be guaranteed?
	IM Step 6: evaluation
1	Is the program evaluated during and/or at the end of the program?
2	Who is involved in the evaluation?

Data Analysis

First, working independently of each other, two researchers (GL and PK) rated the degree of project planning of each intervention by coding each of the 40 criteria within the 19 tasks of the six steps of IM: "+" fully accomplished; "+/-" partially accomplished; "-" not accomplished. Next, for each intervention, the degree of project planning within each task was analyzed by calculating the overall score per task, whereby the total number of observable criteria per task was summed. Tasks were considered to have been accomplished if at least one planning criterion for each task was found to have been "fully accomplished". If half of the tasks within the step had been completed properly, we considered the planning of each of the six IM steps to have been carried out (Godin et al. 2007).

Results

Development and Planning Process

(Also see Table 3).

IM Step 1: logic model of the problem

Within the first step of IM, the initial intervention developers needed to have established and worked with a planning group that included various stakeholders, such as community members, potential program implementers, and program beneficiaries. The context of the intervention, including its population, setting and community, also needed to have been described.

During the interview, the developers of both programs had stated clear reasons for developing their program and had clearly identified their target groups (see Box 1). Both interventions had been developed from the developer's point of view and pilot-tested for their target group. Subsequently, program beneficiaries, including adolescents, peer educators, and teachers, had been involved in the further development of the programs, as had professional skills trainers with regard to the development of the skills training. Other stakeholders - such as community members (e.g., parents), potential program implementers (e.g., school board members) or behavioral scientists - had not been included in the planning groups.

Two of the four tasks pertaining to step 1 had been fully accomplished for both programs (see Table 3). As a consequence, the planning process of IM Step 1 had been carried out.

Table 3. Planning criteria – overview of tasks, criteria and results per intervention

Task	Criterion	Benzies & Batchies	Boys
		accomplished	**accomplished**
IM Step 1: logic model of the problem			
	Identify the problem		
1	Consult literature	-	-
2	Validate with local supporters	+	+
	Identify the target population		
3	Socio-demographic profile	+/-	+/-
4	Socio-cultural context	+/-	+/-
	Identify determinants		
5	Consult literature	-	-
6	Gather information on the population	+/-	+/-
	Analyze the environment		
7	Identify places, methods and times to contact the participants	+	+
8	Identify hindering and facilitating factors	+	+

Table 3. Continued

Task	Criterion	Benzies & Batchies	Boys
		accomplished	**accomplished**
9	Identify partners and their respective roles	+	+
IM Step 2: logic model of change			
	Specify the population		
10	Consider particularities	+	+
	Overall objective		
11	Word precisely (targeted change)	+	+
	Performance objectives		
12	Specify what should be obtained	+	+
13	Develop objectives based on theory, empirical data or deep understanding	-	-
14	Validate with partners	-	-
	Choice of determinants		
15	Choose with respect to their connection with the targeted behavior	+/-	-
16	Choose with respect to their potential success	-	-
17	Validate with partners	-	-
	Learning objectives		
18	Related to performance objectives and determinants	-	-
19	Based on theoretical notions	-	-
20	Validate with partners	-	-
IM Step 3: program design			
	Choose the models		
21	Support with tested theoretical methods	-	-
22	Consider population characteristics	+	+/-
	Translate into strategies		
23	Support with theory	-	-
24	Validate with partners	+/-	-
IM Step 4: program production			
	Organizational structure		
25	Consider limitations of the milieu	+	+
26	Carry out with partners	+	+
27	Train and support workers	+	+
	Sequence and content of activities		
28	Activities related to objectives	+	+
29	Realistic calendar	+	-
30	Validate with partners	+	-

Table 3. Continued

Task	Criterion	Benzies & Batchies	Boys
		accomplished	**accomplished**
	Production of material		
31	Involvement of partners	+	+
32	Begin scheduled activities	+	+
33	Accessible and properly communicated	+	+
34	Adapt the material	+	+
IM Step 5: adoption and implementation			
	Support of decision-makers and community		
35	Active partners	+	+/-
36	Identify the person in charge	+	+
IM Step 6: evaluation			
	Evaluation plan		
37	Plan before implementation	+/-	-
	Process		
38	Document information about the population and the intervention	+	+
	Impact		
39	Measure the degree to which objectives are achieved	+	+
	Communication		
40	Discuss findings with partners	+	+/-
+	accomplished		
+/-	partially accomplished		
-	not accomplished		

Box 1 – The emergence of the two interventions

Benzies & Batchies

In 2006/2007, one of the initial developers of *Benzies & Batchies* noted that young girls - influenced by R&B video clips - were sending out, unintentionally provocative, signals to older boys at parties. Since the prevention materials available at the time focused mainly on sexually transmitted diseases, she realized there was a need to develop a program that focused on the relational side of sex rather than on the factual and technical side. The two developers, both theatre-makers, staged their first theatre plays, which were performed by volunteers, at a secondary school. Later, at the request of the schools, the theatre performance was extended with skills and resilience training. In the developers' view, it is important not only to get girls and boys to talk about the subject of sex with each other, but also to raise their awareness of sexual behavior. At first, only girls were targeted; at a later stage, both girls and boys were. *Benzies & Batchies* was first given in 2011. Since then, it has been carried out over a hundred times in the Netherlands.

Boys

Also in 2006, the Dutch media paid considerable attention to a form of sexual harassment in which boys pinched girls' buttocks at a swimming pool. In the same period, the initial developer of the *Boys* program realized that joint male and female education on sex and relationships did not always meet students' and schools' wishes. During these lessons a lot was discussed with the girls, but a lot of tough talk came from the boys. It was also clear that there were already school-based programs for victims of sexual harassment - mainly girls - but there were no preventive school-based programs for perpetrators of sexual harassment, most of whom were boys. The *Boys* program was therefore developed out of a need to address not only the victims of sexual harassment but also the perpetrators. *Boy*s was first given in 2008. Since then, it has been carried out many times across the Netherlands.

IM Step 2:logic model of change

Within the second step of IM, the initial intervention developers needed to have developed a logic model of change, and to have specified what needed to change with regard to behavior and the environment for improvements in health and quality of life to take place.

According to their developers, the main objective of their programs had been to prevent adolescent sexual-harassment behavior (or, in other words to reduce risk behavior); in the *Boys* program, the particular target had been sexual-harassment behavior in male students. During the interview, the developer of *Benzies & Batchies* stated that creating awareness, being able to state one's personal boundaries, and dealing with peer pressure had been program outcomes

of the theatre play. Working on social skills, and on sexual self-esteem and self-efficacy were the stated outcomes of the social skills training. The developers of the *Boys* program also mentioned creating awareness, being able to state one's personal boundaries, and dealing with peer pressure as outcomes of their lesson series.

In the desk research and the interviews it became apparent that although the developers of the two programs had mainly used practice-based evidence to develop their logic model of change, they had not consulted the scientific literature. Consequently, they were unable to assign specific labels to the theories underlying their programs. By reconstructing the answers given during the interviews, we were able to trace theories at the individual level. These included the theories of reasoned action (i.e., Reasoned Action Approach, Fishbein and Ajzen 2010), and persuasive communication (i.e., Communication-Persuasion Matrix, McGuire 2001; Elaboration Likelihood Model, Petty and Cacioppo 2012). At an interpersonal level, they included Social Cognitive Theory (Bandura 1986). While both developers mentioned outcomes that focused on the individual and interpersonal level, no outcomes had been formulated at organizational, community or societal levels.

Of the five tasks pertaining to step 2, three had been fully accomplished for each intervention (see Table 3). Consequently, the planning process of IM Step 2 had been carried out.

IM Step 3: program design

Within the third step of IM, the initial intervention developers needed to have designed their program by generating program themes, program components, and program scope and sequence; by choosing theory- and evidence-based change methods; and by selecting or designing practical applications for delivering change methods (see Tables 1 and 4).

As with the construction of the logic model of change (see IM Step 2), it was obvious from the desk research and the interviews that the developers of both programs had mainly used practice-based evidence to design their programs. However, by using peer-educators who acted as role models in the theatre play for the adolescent target group, the developer of *Benzies & Batchies* had incorporated a theory- and evidence-based change method. On the basis of their experience, the developers of the *Boys* program had chosen to use various applications that fitted the adolescent male target group (see Table 4).

Of the two tasks pertaining to step 3, one task had been fully accomplished for *Benzies & Batchies*. The planning process of IM Step 3 had thus been carried out. In the *Boys* program, the planning process of IM Step 3 had not been carried out, as no tasks pertaining to this step had been fully accomplished (see Table 3).

IM Step 4: program production

Building on the input gathered in steps 1-3, the initial intervention developers needed to have produced the programs within the fourth step of IM. They thus needed to have refined the program structure and organization, to have prepared plans for program materials, to have drafted messages, materials and protocols, and to have pretested, refined and produced materials.

For both *Benzies & Batchies* and for *Boys*, all three tasks pertaining to step 4 had been fully accomplished. The planning of this step in the Intervention Mapping process had thus been carried out (see Table 3). Both developers stated that they had used individuals from their target group to pretest the materials, and had then adapted these materials on the basis of these individuals' experiences. On the basis of the pretest, future users of *Benzies & Batchies* had been recommended to carry out the complete program, in order to accomplish the specified goals, and to achieve lasting effects on behavior. In addition, based on the peer-educators' personal experiences with sexual (harassment) behavior, (media) trends and results from national research on the topic an update for the basic script of the theatre play is provided every year.

It was clear from the interviews with the developers of *Boys* that the structure, organization, messages and materials of the program had been based only on practice and experience. The developer clarified that they had added an optional five extra lessons to the basic lessons from the beginning because there were too many topics and work forms to accommodate within the basic lessons. They had made a critical selection of the topics and work forms based on the goals of each lesson, and had distributed the topics and work forms over the basic and extra lessons whereby goals should be achieved by carrying out the five basic lessons.

IM Step 5: adoption and implementation

Throughout the development process, but specifically in step 5 of IM, the initial intervention developers needed to have developed an implementation plan for adopting, implementing and maintaining the program.

The developers of the program *Benzies & Batchies* had developed an implementation manual that contained detailed information on the proper performance and maintenance of their program. Several times a year, newsletters and promotion folders are also sent to schools; one person is responsible for press policy. The developers stated that, to provide continuity in guidance on the theme, they had established collaborative relationships with regional specialist organizations such as the addiction and municipal welfare services; consultation takes place with municipalities about embedding *Benzies & Batchies* in their policies and implementation plans.

Table 4. Overview of change methods

		Benzies & Batchies	Boys
		used in the program	
Basic methods at the individual level			
• Persuasive communication	Use arguments to guide students toward an attitude or action	√	√
• Active learning	Encourage students to learn from activity-based experience	√	√
• Modeling	Provide an appropriate model	√	√
• Feedback	Give the students information on the extent to which they are accomplishing learning or performance	√	√
Methods to change attitudes, beliefs			
• Self-reevaluation	Encourage students to combine cognitive and affective assessments of their self-image with and without the desired behavior	√	-
• Arguments	Use a set of one or more meaningful premises and a conclusion	√	-
Methods to change social influence			
• Resistance to social pressure	Stimulate students to build skills for resisting social pressure	√	-
Methods to change skills, capability and self-efficacy			
• Guided practice	Prompt students to rehearse and repeat the behavior various times, discuss their experiences, and provide feedback	√	-
• Verbal persuasion	Use messages that suggest that the student possesses certain capabilities	√	-
• Planning coping responses	Prompt students to list potential barriers and ways to overcome them	√	√
Methods to increase knowledge			
• Discussion	Encourage consideration of a topic by the students in an open informal debate	√	√
• Elaboration	Stimulate the student to add meaning to the information that is processed	√	√
Methods to change social norms			
• Entertainment education	Provide a form of entertainment designed both to educate on sexual behavior and to entertain	√	-
Methods to change social support and social networks			
• Peer-education	Mobilize members of the target population to serve as credible sources of information and role models	√	-

Although no implementation plan was available for the program of *Boys*, the developers stated that they themselves had recruited schools for participation in the program, that they had conducted the program mainly in a large city in the Netherlands whose city council had also provided structural funding, and that they had sought funding for the program together with schools in other areas.

IM Step 5 consisted of one task: 'Support of decision-makers and community', which had been fully accomplished for both interventions. This step had thus been carried out (see Table 3).

IM Step 6: evaluation

Throughout the development process, but specifically in the sixth step of IM, the initial intervention developers needed to have developed and completed an evaluation plan by doing the following: writing questions for effect and process evaluation, developing indicators and measures for assessment, specifying the evaluation design, and completing the evaluation plan.

In the interviews, the developers of the two interventions stated that they had not themselves developed and completed an evaluation plan for the outcomes of their programs. However, both of them had constructed a limited evaluation procedure, and an independent research institute had conducted effect evaluations of the programs (De Lijster et al. 2016; De Lijster et al. *submitted*). The developers of *Benzies & Batchies* had arranged for annual internal evaluation with the peer-educators who had performed the theatre play, and had also led the group discussion afterwards. Based on their experiences, the play may be adjusted. In addition, where relevant, the students' comments and experiences were discussed with the students' teacher or teachers, or with a member, or with members, of the school board. The developers of *Boys* had compiled a short eight-item questionnaire on their lessons, which had been completed by the male students at the end of the lesson series. The developer used the results of these questionnaires as an internal review procedure for the trainers. Afterwards, the intervention developers of both programs adapted their programs on the basis of the effect evaluations and of the recommendations that followed from them.

Of the four tasks pertaining to step 6, three tasks had been fully accomplished for *Benzies & Batchies*, and two tasks for *Boys* (see Table 3). The planning process of IM Step 6 had thus been carried out.

Discussion

To improve the development of such practice-based interventions, we evaluated the strengths and weaknesses of the planning process of two school-based preventive sexual-harassment interventions, *Benzies & Batchies* and *Boys*.

After using a planning tool to retrospectively assess the accomplishment of the Intervention Mapping process, we concluded that all six IM steps had been carried out for *Benzies & Batchies*; and that all but one step had been carried out for *Boys*. However, for both interventions, we found that the intervention developers had worked out tasks within the steps concerning the programs' production, adoption, implementation and evaluation further than they had within steps regarding the needs assessment and theoretical underpinning of the programs. Our findings show that, although both programs lacked a thorough theoretical foundation (as suggested within IM Steps 1, 2, and 3), the methods and materials that were used represented aspects of evidence-based behavior-change theories. Although, on the basis of their own practical experiences, the intervention developers had made limited descriptions of the problem and their target groups, they had not consulted the literature on the prevalence of the problem or on the disease burden, and had neglected to examine whether the objectives they specified were feasible.

When developing a program, a range of benefits follow from including all IM steps. If each task is performed per step, and each step is thus completed, the intervention will have a proper theoretical underpinning. This will lead to effective decisions on its development, implementation and evaluation. The Intervention Mapping framework may be considered to be a rigid approach to developing an intervention. As the first two first steps of the IM protocol are complex, time-consuming and costly, intervention developers sometimes choose to modify the original IM protocol or to not perform all the tasks per step (Singh et al 2006; Dalum et al. 2012). In this respect, the results of the present study are consistent with those found in a study that explored the development of existing sex-education programs for people with intellectual disabilities (Schaafsma et al. 2013).

The initial developers of the two interventions had used a range of change methods that focused on determinants of behavior, with the developers of *Benzies & Batchies* using twice as many methods as the developers of *Boys.* More practical applications had also been used in the *Benzies & Batchies* program, including a peer-performed theatre play, group discussions, and skills training, than in the *Boys* program, which focused mainly on group discussions and on assignments using worksheets. Using a range of change methods, and practical applications may lead an intervention to have more positive outcomes. In earlier interventions, for example, the combination of a classroom intervention with a broader environmental intervention proved to be more effective in reducing adolescent dating violence and sexual harassment than the use of the single classroom intervention (Taylor et al. 2013). Similarly, multicomponent school interventions were effective for promoting adolescent sexual health (Shackleton et al. 2016). Effective school-based interventions targeting physical activity among older adolescents were

also found to have used more behavior-change techniques than non-effective interventions (Hynynen et al. 2016).

The systematic and planned development of an intervention may contribute to its success and its effects on health outcomes (Dalum et al. 2012). Effect evaluations of *Benzies & Batchies* and *Boys* (De Lijster et al. 2016; De Lijster et al. *submitted*) showed mixed results: whereas significant short and long term effects on the determinants of adolescent sexual-harassment behavior were found for *Benzies & Batchies*, no significant effects were found for the *Boys* program. As the results of the present study show that the developers of *Benzies & Batchies* had met slightly more planning criteria within the six steps of the planning process, and had used more change methods than the developers of *Boys* had, we suggest that an intervention produces better results if a planned approach has been taken to its development.

Strengths and Limitations

Our use of various research methods to conduct our study enabled us to consult different sources with regard to the process whereby the interventions were planned. However, the interviews with the initial intervention developers took place several years after the initial development. As a result, the interviewees may have had difficulty in thinking back to the period in question. In addition, both interventions had gradually been adjusted in the intermediate period (i.e., period between initial start of the intervention and time of the interview), which means that our research was a reflection of the moment. As a development process is not static, this may be seen as a limitation. For the same reason, it may also be seen as a strength, as developers can move back and forth between the tasks within the IM steps, using the information they gather to gradually adapt their intervention (Bartholomew Eldredge et al. 2016). As insight increases, an intervention can develop.

We used the Intervention Mapping framework to establish the extent to which the two interventions had been planned. This framework was developed as an approach to systematically plan the process of development of health-promotion programs. Although it has not been directly compared to other processes for developing interventions, it is widely used today (Bartholomew Eldredge et al. 2016).

Lastly, when using the planning tool to test the interventions, we found it difficult to complete all the entries, as the tool was not provided with instructions or further explanation of the planning criteria. This might have led to overestimation or underestimation in the subjective scoring of the planning criteria by the researchers.

Implications for Practice

First of all, the intervention developers had involved teachers and students in the development of their programs. Previous research showed that involving teachers and students in the development and evaluation of school-based sex education programs was effective in the later adoption of the program (Mevissen et al. 2018; Arnab et al. 2013). In line with earlier research results (Shackleton et al. 2016; Peter et al. 2015; Grossman et al. 2014; Grossman et al. 2013), we recommend that parents should also be involved in the development of programs focusing on adolescent sexual health. And to provide a connection with the education on sex and relationships that parents give their children, we recommend that parents are also allowed to participate in the programs. Involving them in program development helps identify topics the program should include (Peter et al. 2015), and allowing them to participate in the program through family homework assignments helps them to share their norms and values with their children (Grossman et al. 2013). Boys in particular can benefit from parental involvement, as conversations about sex and sexual behavior may start earlier, and occur more frequently, which may in turn causes them to delay sexual intercourse (Grossman et al. 2014).

Second, intervention developers need to combine their practice-based experience with evidence-based theories, either by means of consulting scientific literature themselves or by working together with researchers in the planning group. This synergy will lead to more successful and effective interventions.

Recommendations for Further Research

To date, the Intervention Mapping framework has been used to develop many interventions focusing on various health outcomes. Not all have been evaluated (Garba and Gadanya 2017), and results on health outcomes are mixed (e.g., Arnab et al. 2013). Many interventions have also been developed on the basis of professionals' practical experience (Schaafsma et al. 2013). To meet their needs, greater insight is needed into the importance of each step in the IM framework. Is each task within an IM step as important as the others? To accomplish a planned process, is it necessary to carry out each task within each step?

The developers of the two interventions had adapted their program in response to the results of the effect evaluations and to the recommendations given by researchers, for example with regard to the theatre play of *Benzies & Batchies* and the short movies in *Boys*. We also recommend further research into the effects of these adaptations, as developing an intervention according to the IM framework is an iterative and ongoing process, and changes in culture, environment and target group can have an effect on the outcomes of the intervention (Bartholomew Eldredge et al. 2016).

Conclusion

The two school-based programs, *Benzies & Batchies* and *Boys*, were both the product of incidents involving adolescent sexual harassment. Although both programs were developed in practice and lacked a thorough theoretical foundation, their methods and practical applications represented aspects of behavior-change theories. The intervention developers had completed many parts of the planning process, emphasizing the program's production, adoption, implementation, and evaluation. If future intervention developers combine their practice-based experience with evidence-based theories, the development of practice-based interventions will improve, leading to more successful and effective interventions.

4

EFFECTS OF AN INTERACTIVE SCHOOL-BASED PROGRAM FOR PREVENTING ADOLESCENT SEXUAL HARASSMENT: A CLUSTER-RANDOMIZED CONTROLLED EVALUATION STUDY

Lijster, G.P.A. de, Felten, H., Kok, G., & Kocken, P.L. (2016). Effects of an interactive school-based program for preventing adolescent sexual harassment: a cluster-randomized controlled evaluation study. Journal of Youth and Adolescence, 45, 874-886.

Abstract

Many adolescents experience sexual harassment and victims of sexual harassment have higher risks regarding well-being and health behaviors such as higher risks of suicidal thoughts, suicidal ideation and feeling unsafe at school. A peer-performed play and school lessons on preventing sexual harassment behavior were presented to secondary school students. We evaluated its effectiveness, using a cluster-randomized controlled design to assign schools to an experimental condition (n = 14 schools; 431 students (51% female)) and a control condition (n = 11 schools; 384 students (51% female)). To measure the effects of the intervention at first post-test and six-month follow-up, our multilevel analyses used a two-level random intercept model. Outcome measures were sexual harassment behaviors, behavioral determinants and distal factors influencing these behaviors. At post-test, students in the experimental group reported a reduced intention to commit sexual harassment behavior and higher self-efficacy in rejecting it. At post-test and follow-up there was a significant positive effect on social norms for rejecting sexual harassment behavior. At follow-up, sexual self-esteem was higher in students in the experimental group than in the control group. Effects on these determinants will benefit adolescents' future sexual behaviors. In combination, the play and lessons, possibly together with continued sexual health education and skills programs on social-emotional learning in subsequent school years, have potential for preventing sexual harassment behavior.

Introduction

Sexual harassment is defined as unwanted sexual attention. Many adolescents experience it – as victims, perpetrators or both. As well as physical contact such as kissing, hugging and touching, it can include non-physical contact such as sexual remarks, jokes, gestures and looks, or showing sexually explicit pictures, messages or notes or spreading sexually related rumors (McMaster et al. 2002; Young et al. 2009). By using this broad definition, high prevalence rates among young people might be expected.

The estimated prevalence of sexual harassment behavior varies according to the definition used (McMaster et al. 2002; Young et al. 2009), age (Hill and Kearl 2011), ethnicity (AAUW 2001), education (De Graaf et al. 2012) and timeframe (Witkowska and Menckel 2005; De Bruijn et al. 2006). In Western populations, the prevalence rates for girls as victims lie between 45% and 56% (vs. 40-55% for boys as victims). For girls as perpetrators, they lie between 7% and 21% (vs. 13-36% for boys as perpetrators) (McMaster et al. 2002; Hill and Kearl 2011; Li et al. 2010). For adolescents of both sexes, these prevalence rates change with age: while 12 to 13-year-old male students reported more sexual harassment victimization than those aged 17 to 18, older female students reported more sexual harassment victimization than their younger counterparts (Hill and Kearl 2011).

Research also has shown differences in sexual harassment between ethnic groups and the educational level of students. With regard to ethnic differences, white adolescents are more often involved in non-physical sexual harassment, whereas other ethnic groups in physical sexual harassment (AAUW 2001). Relative to students with a higher educational level (i.e., senior general secondary education), those with a lower educational level (i.e., pre-vocational education) are more vulnerable to sexual harassment (De Graaf et al. 2012).

Adolescent victims of sexual harassment have higher risks of suicidal thoughts, suicidal ideation and feeling unsafe at school (Chiodo et al. 2009; Exner-Cortens et al. 2013). In addition, female victims have higher risks of self-harm, eating problems, lower self-esteem, increased heavy episodic drinking, depressive symptomatology, and smoking (Goldstein et al. 2007; Chiodo et al. 2009; Exner-Cortens et al. 2013). Male victims of sexual harassment have higher risks of antisocial behavior and marijuana use (Exner-Cortens et al. 2013).

The behavioral determinants subjective norm and self-efficacy are significant predictors of behavioral intention with regard to rejecting sexual harassment for boys and girls alike (Li et al. 2010). These determinants from the Theory of Planned Behavior (Ajzen 1991) and Reasoned Action Approach (Fishbein and Ajzen 2010) assume decision making to be a reasoned and deliberative process (Albarracín et al. 2001). The Prototype Willingness Model, however, can help to explain non-intentional, but volitional adolescent risk behavior (Gerrard et al. 2008).

One of the assumptions of the Prototype Willingness Model is that children and adolescents have clear cognitive representations or social images (prototypes) of the type of person their age who engages in specific risk behaviors (Gibbons et al. 2004; Connor and Norman 2005). If we extrapolate from Webb and Sheeran's (2006) suggestion that attention should be paid to non-intentional routes to adolescents' action, it may thus be relevant to study adolescents' images of prototypes of victims and perpetrators of sexual harassment. Effects of perceptions of prototype behavior have been found earlier in studies on adolescent alcohol use (Todd and Mullan 2011) and smoking behavior (Hukkelberg and Dykstra 2009). Several studies also showed that sexual harassment behavior is also influenced by attitudes towards gender roles, attitudes towards media influence, and the adolescents' self-esteem (De Bruijn et al. 2006).

Research shows that students' sexual harassment behavior can be reduced by dedicated school lessons (Wolfe et al. 2009). One example is the Safe Dates program for American schools. Consisting of a theatre production performed by peers that is followed up by a series of lessons, this showed positive short and long-term effects on conflict-management skills and sexual violence reported by victims and perpetrators (Foshee et al. 2004; Foshee et al. 1998). Similarly, modeling through peer-education and theatre are suitable methods for changing students' attitudes and images of prototypes (Hecht et al. 1993; Stephenson et al. 2008; Mellanby et al. 2001). Other areas of health behavior in which school theatre-based prevention programs were associated with positive effects include drunk driving and riding with a drunk driver (Quek et al. 2012), illicit drug use (Quek et al. 2012), and fruit and vegetable consumption (Perry et al. 2002).

Current Study

This article evaluates the effectiveness of *Benzies & Batchies* (Felten and Janssens 2014), an interactive school-based program developed in the Netherlands to prevent male and female adolescent sexual harassment behavior in secondary school students by combining a play with skills lessons and peer education. The name of the program was derived from street slang for "pimp cars" and "scantily dressed girls". Trained adolescent peer-educators serve as models in the play and the ensuing group discussion. *Benzies & Batchies* is based on the principles of the Theory of Planned Behavior (Ajzen 1991), Reasoned Action Approach (Fishbein and Ajzen 2010) and Prototype Willingness Model (Gerrard et al. 2008) (see Figure 1).

This study had three research objectives. The first was to establish any effects of *Benzies & Batchies* on sexual harassment behavior (victimization and perpetration) and its five determinants: attitude, perceived social norm, self-efficacy, intention, and prototype. The second was to establish any effects of *Benzies & Batchies* on three distal factors: attitude towards gender roles, attitude towards media influence and sexual self-esteem. The third was to establish

whether any effects found differed with regard to the adolescents' gender, educational level and ethnicity.

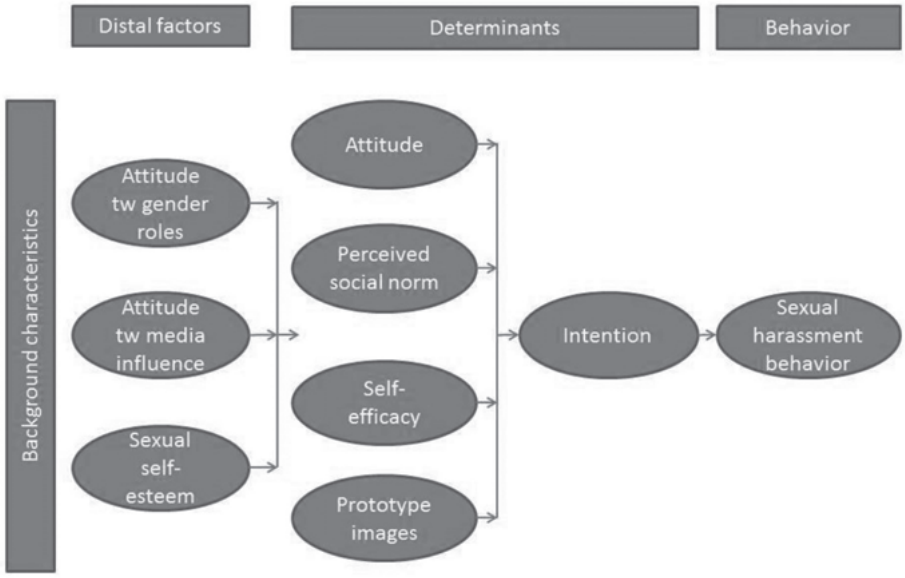


Fig. 1 Theoretical Model *Benzies & Batchies*

Methods

Intervention

Benzies & Batchies consisted of four complementary elements: (a) an introductory lesson, (b) an educational peer-performed play followed by a peer-led group discussion, (c) three classroom lessons, each 100-150 minutes, to teach skills and resilience regarding social and sexual behavior; and (d) a closing lesson. The main objective of the intervention was to reduce the risk of sexual harassment behavior among adolescents, both as victims and as perpetrators. Although such behavior was discussed mainly in a heterosexual context, homophobic behaviors were dealt with whenever the topic arose during the lessons.

The play was comprised of short scenes in which male and female peer-educators performed examples of sexual harassment (both victimization and perpetration) and of reactions to them. The play lasted 30 minutes and was followed by a 60-minute discussion (Felten et al. 2014). The introductory and closing lessons were given in the classroom by the students' own teacher. The three lessons addressing students' skills and resilience were presented by experienced and trained social-skills instructors from outside the school.

To change the determinants of the risk behavior and desired behaviors, the designers of the *Benzies & Batchies* program first identified appropriate behavior-change methods (Bartholomew et al. 2011), basing their approach on the understanding that peer-educators can use modeling to influence students' perception of other people's behavior (social normative behavior; Bandura 1986). To influence the behavioral determinants of sexual harassment, modeling, planning coping responses, resistance to social pressure and guided practice are used during the skills lessons (McAlister et al. 2008; Marlatt and Donovan 2005; Evans et al. 1992). The application of the behavior-change methods was further elaborated within the program into worksheets, discussions, films, and role-play.

Benzies & Batchies was first implemented in 2011. Since then, it has been carried out over a hundred times in approximately 45 schools in urban areas across the Netherlands.

Participants and Procedure

For participation in the study, we approached schools for pre-vocational and senior general secondary education in urban areas in the Netherlands (https://www.government.nl/topics/secondary-education). These schools were part of the mainstream regular Dutch school system that assigns students at a relatively early age to schools with different educational levels. The inclusion of lower educational level pre-vocational schools was seen as particularly important, given the higher prevalence of sexual harassment behavior among the students (De Graaf et al. 2012). In all, 25 schools participated. Per school, between one and three classes were involved.

We followed a cluster-randomized controlled design in which schools were paired according to educational level and the degree of urbanization of the school area. The schools were then randomly assigned to the experimental or control condition. The target group consisted of male and female urban adolescents aged 12-16 years from various ethnic backgrounds.

Fourteen schools in the experimental group received the program (21 classes). Due to practicalities regarding the number of days on which the play could be performed, the intervention was carried out between January 2011 and June 2012. Per school, the duration of the program ranged from 4 to 6 weeks. Students in the experimental group filled out paper-and-pencil questionnaires in the classroom at three time points: before the presentation of the play (baseline; T0); just after the end of the program (post-test; T1); and six months after the end of the program (follow-up; T2).

In the control group, 11 schools (18 classes) carried out their usual school curriculum. These schools were put on a waiting list and given the opportunity to receive the intervention after all data collection in the school had finished. Students in the control group filled out the questionnaires parallel to the students in the experimental condition.

During the measurements a research assistant was present. A passive-consent procedure was applied: all students could object to filling out the questionnaire. The protocol was approved by the Research Board of the Netherlands Organisation for Applied Scientific Research (TNO).

Measures

Table 1 shows a summary of the questionnaire scales and items.

Sexual harassment behavior

The items used to assess sexual harassment behavior in the past six months were based on questionnaires used in Dutch research and adapted for this purpose (De Graaf et al. 2005; Kuyper et al. 2009). Questions on non-physical and physical behaviors were presented from two perspectives: the victim's (e.g., letting a friend know you don't want to receive sexually explicit pictures; being forced to have sex); and the perpetrator's (e.g., promising someone something in return for sex; watching someone getting undressed, or being naked).

Attitude, perceived social norm, self-efficacy and intention

Scales were based on determinants of behavior taken from the Theory of Planned Behavior (Ajzen 1991) and Social Learning Theory (Bandura 1986). For each behavior, questions were asked on the attitude and perceived social norm, taking the victim's and perpetrator's perspectives on sexual harassment behavior. Using four imaginary scenarios related to demonstrating or dealing with sexual harassment, questions were presented to the respondents, each targeting self-efficacy and intention on the parts of perpetrator and victim. Per scenario, one question was asked regarding self-efficacy and one regarding intention.

Prototype

Descriptions of two adolescent victims of sexual harassment (a boy / a girl who allows sex (such as kissing, fondling or having sexual intercourse) when he / she doesn't want to) and two adolescent perpetrators (a boy /a girl who wants to start sexual activity (such as kissing, fondling or having sexual intercourse) with someone who doesn't want to) were presented on the basis of the Prototype Willingness Model (Gibbons et al. 2004; Connor and Norman 2005). Respondents were asked to state their opinion with regard to each of the prototypes depicted, i.e., whether they thought of the victim as being either bad or good; and whether they thought of the perpetrator as being either bad or good.

Table 1. Questionnaire scales and items

scale and score range (min-max)	number of items	Cronbach's α or Pearson r*	examples of items and answer categories
VICTIMIZATION			
Sexual harassment (underwent) (0-8)	8	n/a [a]	In the past six months, has someone else stared at you or made sexual gestures towards you, even though you didn't want them to? Never (0) – once (1) – more than once (1)
Sexual harassment (rejected) (0-3)	3	n/a [a]	In the past six months, have you canceled an appointment with a friend because you thought he/she wanted to perform sexual behaviors (such as kissing, fondling, having sexual intercourse) and you didn't? Never (0) – once (1) – more than once (1)
Attitude towards sexual harassment (3-15)	3	α = 0.55	State your opinion of the following: You don't want to perform sexual behaviors (such as kissing, fondling, having sexual intercourse), but think your boyfriend/girlfriend wants to. You therefore cancel an appointment with him/her. Not good at all (1) – very good (5)
Perceived social norm (3-15)	3	α = 0.56	State what your friends would think of the following: You don't want to perform sexual behaviors (such as kissing, fondling, having sexual intercourse), but think your boyfriend/girl wants to. You therefore cancel an appointment with him/her. Not good at all (1) – very good (5)
Example scenario: "You and your friends are surfing the internet. You're watching You Tube films and listening to music videos while chatting with other friends. One of your friends tells about a website with a lot of nudity and sex. 'Let's have a look at it!' your friend calls out excitedly. But you're not at all enthusiastic – you've seen a site like that before, and thought it was stupid. You don't want to see one again."			
Self-efficacy (2-10)	2	r = 0.35	Do you think you'd be able to state clearly that you didn't want to see that site? Not at all (1) – totally (5)
Intention (2-10)	2	r = 0.30	In future, do you intend to say 'no' if someone wants to show you such sites? Not at all (1) – totally (5)
Prototype (victim) (2-10)	2	r = 0.72	State your opinion of the following: I think that a boy/girl who allows sex (such as kissing, fondling or having sexual intercourse) when he/she doesn't want to is … Bad (1) – good (5)
PERPETRATION			
Sexual harassment (committed) (0-9)	9	n/a [a]	In the past six months, have you ever stared at someone in a sexual manner or made sexual gestures towards someone, even though that person didn't want you to? Never (0) – once (1) – more than once (1)
Attitude towards sexual harassment (4-20)	4	α = 0.62	State your opinion of the following: In return for sex, you promise someone something (such as a present, money or something else). Not good at all (1) – very good (5)

Table 1. Continued

scale and score range (min-max)	number of items	Cronbach's α or Pearson r*	examples of items and answer categories
Perceived social norm (4-20)	4	α = 0.65	State what your friends would think of this: In return for sex, you promise someone something (such as a present, money or something else). Not good at all (1) – very good (5)
Example scenario: 'You've been friends with D for a long time now. You're in love with D, but D doesn't know this. One afternoon you're both at your home, sitting on the couch and watching television. You keep moving towards D until you touch each other. You put your hand on D's knee and try to kiss him/her. You find that D doesn't want to kiss.'			
Self-efficacy (2-10)	2	r = 0.18	Do you think you'd be able to prevent yourself from kissing him/her? Not at all (1) – totally (5)
Intention (2-10)	2	r = 0.33	In future, do you intend not to insist on kissing someone who resists? Not at all (1) – totally (5)
Prototype (perpetrator) (2-10)	2	r = 0.63	I think that a boy/girl who wants to start sexual activity (such as kissing, fondling or having sexual intercourse) with someone who doesn't want to, is … Bad (1) – good (5)
DISTAL FACTORS			
Attitude towards gender roles (12-60)	12	α = 0.77	It's more important for girls than for boys to remain virgins until they get married. Totally agree (1) – totally disagree (5)
Attitude towards media influence (8-40)	8	α = 0.75	You can learn a lot about sex by watching pornography. Totally agree (1) – totally disagree (5)
Sexual self-esteem (7-35)	7	α = 0.87	When it comes to sex, I know how far I want to go (for instance holding hands, kissing, fondling or having sexual intercourse). Totally agree (1) – totally disagree (5)

* N may vary due to partial response

[a] Cumulative index scores aggregating multiple sexual harassment behaviors

Distal factors

There were three distal factors: attitude towards gender roles, which was assessed on a 12-item scale (Hofstetter et al. 2014); attitude towards media influence, which was assessed on an 8-item scale (De Graaf et al. 2009; Nikken 2007); and sexual self-esteem, which was assessed on a 7-item scale (Rostosky et al. 2008).

Background characteristics

As well as age, gender and educational level, we assessed whether the participants had ever had sexual intercourse. Ethnicity of the child was assessed by looking at the parents' country of

birth. Parents of native children were born in the Netherlands, parents of non-native children were born outside the Netherlands.

The questionnaire was pretested among students of various educational levels and ethnic backgrounds.

Data Analysis

To describe and test students' background characteristics between the study groups at baseline, we performed descriptive analyses, Student's t-tests and Chi-square tests. To validate the scales measuring behavioral determinants, we carried out factor and reliability analyses on the baseline data. In case the factor analysis showed that items of a scale loaded on different factors, subscales were created (e.g., broken down by victim and perpetrator). To allow higher scores to reflect a more desirable outcome, questionnaire items regarding the determinants of behavior were re-coded. Items regarding behavior itself were summed, such that higher scores would reflect more sexual harassment behavior in terms of frequency. Means and standard deviations (SD) for each outcome measure were calculated at baseline, first post-test and six-month follow-up. Mean difference scores and SD's were calculated between first post-test and baseline and between six-month follow-up and baseline (Van Breukelen 2006), and the effect sizes (Cohen's *d*) of the mean difference scores (T1-T0; T2-T0). To compare effects, outcome measures were standardized for each subscale.

Next, multilevel analyses were conducted to obtain the effects of the intervention at the first post-test and six-month follow-up. A two-level random intercept model was used, with students at the first level and school at the second level. In a first series of multilevel analyses, we tested the main effect of the study group – i.e., experimental group vs. control group – adjusting for ethnicity, age, experience of sexual intercourse, gender and educational level.

Similarly, in a second series of analyses, interaction effects were tested of study group with gender, educational level and ethnicity. We interpreted the interaction effects by inspecting plots and performing subgroup analyses. Effects were statistically significant at a p-value of <.05 (2-sided). SPSS Statistics 20.0 was used to analyze the data (IBM SPSS Statistics 20.0).

Results

Response

For this study, we randomized 28 schools to the experimental or control condition (see Figure 2). Before data collection started at baseline, three schools in the control condition declined to participate. At baseline, 14 schools participated in the experimental condition and 11 in the control condition. Baseline data were collected from 747 respondents. At the first post-test, 694 respondents filled out the questionnaire (93%); at six-month follow-up, 621 questionnaires

were filled out (83%). At the first post-test, data for one school in the control condition were not available. This was also the case with data for another school in the control condition at six-month follow-up. None of the students waived participation with regard to the research.

Characteristics of Respondents

Table 2 shows a statistically significant difference between respondents in the experimental and control groups at baseline with regard to age, ethnicity and experience of sexual intercourse. The mean age of the students in the experimental group was 14.62 years (SD = 0.82), compared with 14.14 years (SD = 0.70) in the control group. Nearly half of the respondents in the experimental group (48%) had a non-native background, against 66% of those in the control group. Fifteen percent of respondents in the experimental group reported having had sexual intercourse once or more, against 7% of those in the control group. There were no statistical differences between the study groups with regard to gender, educational level, having a girlfriend or boyfriend, or sexual harassment behavior.

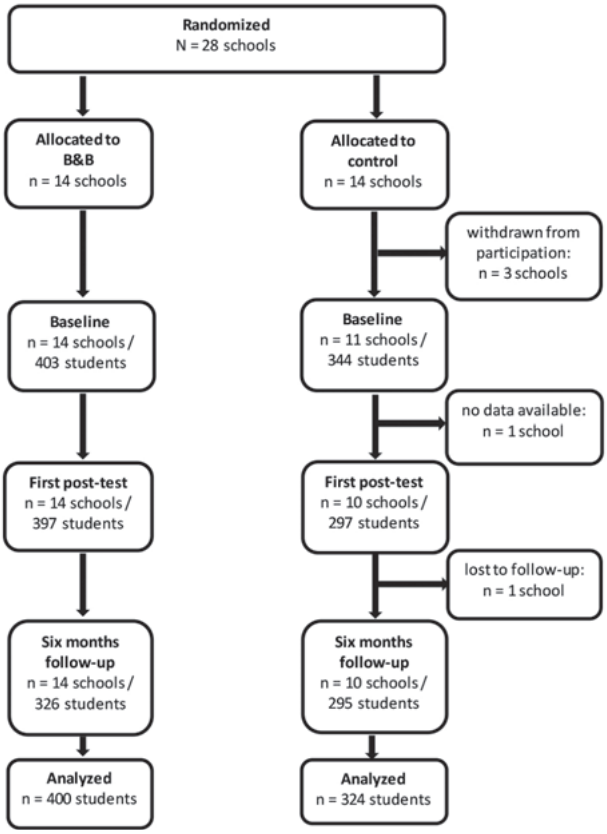


Fig. 2 Flow chart

About 32% of all respondents reported having been a victim of some kind of sexual harassment once or more in the past six months; 29% reported having committed it, and over a quarter of respondents (27%) reported having rejected it by saying 'no' (see Table 2). At the first post-test, the non-respondents were slightly younger and had a higher educational level than the respondents. There were more non-respondents in the control group than in the experimental group at the first post-test. At follow-up, there were no statistically significant differences between respondents and non-respondents.

Table 2. Background characteristics of respondents in the experimental and control groups

		experimental group (n = 431[1])	**control group (n = 384[1])**
		M (SD)	M (SD)
age in years*		14.62 (0.82)	14.14 (0.70)
		n (%)[2]	n (%)[2]
gender	female	219 (51)	196 (51)
	male	212 (49)	188 (49)
ethnicity*	native	211 (52)	116 (34)
	non-native	192 (48)	229 (66)
educational level	pre-vocational education	186 (44)	139 (37)
	pre-vocational education (theoretical program)/senior general secondary education	237 (56)	235 (63)
girlfriend/boyfriend	yes	82 (20)	67 (20)
	no	318 (80)	276 (80)
experience of sexual intercourse*	never	339 (85)	315 (93)
	once or more	60 (15)	25 (7)
underwent sexual harassment	never	262 (66)	229 (72)
	once or more	138 (34)	89 (28)
rejected sexual harassment*	never	285 (72)	240 (75)
	once or more	112 (28)	80 (25)
committed sexual harassment	never	286 (72)	227 (71)
	once or more	113 (28)	93 (29)

[1] Total number of respondents
[2] Not all background characteristics were available or could be determined
*p<.05

Main Effects at First Post-test

At the first post-test, significant main effects were found for two determinants (social norm and self-efficacy) with regard to rejecting sexual harassment (see Table 3). Students in the experimental group (exp) reported a more positive social norm with regard to rejecting sexual harassment than students in the control group (con) ($\overline{\Delta}_{exp}$ = .36, $\overline{\Delta}_{con}$ = -.46 resp.; $p < .05$). Relative to students in the control condition, those in the experimental group also reported higher self-efficacy with regard to successfully rejecting sexual harassment behavior by saying 'no' ($\overline{\Delta}_{exp}$ = .33, $\overline{\Delta}_{con}$ = -.12 resp.; $p < .05$). With regard to committing sexual harassment, a significant main effect was found on one determinant: intention. Relative to students in the control group, those in the experimental group had less intention of committing sexual harassment ($\overline{\Delta}_{exp}$ = .44, $\overline{\Delta}_{con}$ = -.21 resp.; $p < .01$). At the first post-test, there were no significant main effects on the remaining determinants of sexual harassment behavior and on the distal factors influencing it.

Main Effects at Six-month Follow-up

At six-month follow-up we found no significant main effects on undergoing, rejecting and committing sexual harassment (see Table 3). However, the significant main effect on the determinant social norm with regard to rejecting it was maintained ($\overline{\Delta}_{exp}$ = -.09, $\overline{\Delta}_{con}$ = -.83 resp.; $p < .05$). This was due to the fact that the decrease in social norm for students in the experimental condition was small, whereas this decrease was large for students in the control group. A significant main effect was also found on a distal factor, sexual self-esteem, students in the experimental group reporting higher sexual self-esteem than those in the control group ($\overline{\Delta}_{exp}$ = 1.36, $\overline{\Delta}_{con}$ = -.43 resp.; $p < .01$). No further significant main effects were found on the remaining determinants or distal factors influencing the behavior.

Interaction Effects

At the first post-test, an interaction effect on the determinant prototype of a victim of sexual harassment was found between study group and gender. Relative to boys in the control group, boys in the experimental group reported a more negative image of this prototype ($\overline{\Delta}_{exp}$ = -.16, $\overline{\Delta}_{con}$ = -.44; $p = .01$). An intervention effect on self-efficacy was also found between

study group and ethnicity, non-native students in the experimental group reporting a higher self-efficacy with regard to not committing sexual harassment than non-native students in the control group ($\overline{\Delta}_{exp}$ = .14, $\overline{\Delta}_{con}$ = -.20 ; p = < .05).

At six-month follow-up, significant interaction effects were found between study group and educational level (see Figure 3) on the following three determinants: attitude towards committing sexual harassment ($\overline{\Delta}_{exp}$ = .55, $\overline{\Delta}_{con}$ = -.58; p = < .05); social norm with regard to committing sexual harassment behavior ($\overline{\Delta}_{exp}$ = .54, $\overline{\Delta}_{con}$ = -.46; p = < .05); and prototype of a perpetrator of sexual harassment ($\overline{\Delta}_{exp}$ = .11, $\overline{\Delta}_{con}$ = -.33; p = < .05). Students with a higher educational level in the experimental group reported a more negative attitude towards committing sexual harassment and also reported a more negative social norm with regard to committing sexual harassment behavior than students with a higher educational level in the control group. In addition, students with a higher educational level in the experimental group reported a more negative image of the prototype of a perpetrator of sexual harassment than students with a higher educational level in the control group. No further interaction effects were found on the remaining determinants and distal factors influencing the behavior.

Table 3. Main effects (experimental vs control group) on sexual harassment (victimization and perpetration), on determinants of sexual harassment (victimization and perpetration) and on distal factors at first post-test and six months follow-up [a]

				T1 - T0				T2 - T0		
Variable (range)	**Group**[a]	Mean (SD) [b] baseline	Mean (SD) [b, c] first post-test	Mean (SD) [b, c] follow-up	Mean (SD) [b] difference score	β [d]	Effect size [e]	Mean (SD) [b] difference score	β [d]	Effect size [e]
VICTIMIZATION[i]										
Sexual harassment (underwent) [f]	Exp [g]	.70 (1.24)	n/a	.58 (1.19)	-	-	-	-.05 (1.11)	-.10	-0.12
(0-8)	Con [g]	.61 (1.22)	n/a	.69 (1.43)	-	-	-	.10 (1.33)		
Sexual harassment (rejected) [f]	Exp	.44 (0.79)	n/a	.41 (0.75)	-	-	-	.00 (0.80)	-.05	-0.04
(0-3)	Con	.32 (0.62)	n/a	.35 (0.72)	-	-	-	.03 (0.70)		
Attitude towards sexual harassment	Exp	9.48 (2.89)	9.87 (2.52)	9.30 (2.99)	.40 (3.14)	.21	0.23	-.18 (3.47)	.14	0.13
(3-15)	Con	9.58 (2.93)	9.31 (2.62)	9.02 (3.04)	-.33 (3.21)			-.63 (3.39)		
Perceived social norm	Exp	9.06 (2.73)	9.37 (2.78)	8.88 (3.23)	.36 (3.29)	**.26***	0.26	-.09 (3.71)	**.28***	0.21
(3-15)	Con	9.83 (2.82)	9.40 (2.75)	9.00 (3.01)	-.46 (2.92)			-.83 (3.23)		
Self-efficacy	Exp	7.85 (1.80)	8.17 (1.85)	8.30 (1.88)	.33 (2.07)	**.23***	0.21	.47 (2.04)	.11	0.14
(2-10)	Con	7.80 (1.90)	7.66 (2.04)	7.85 (2.23)	-.12 (2.23)			.18 (2.15)		
Intention	Exp	7.55 (1.99)	7.72 (2.01)	7.98 (2.12)	.19 (2.36)	.14	0.09	.51 (2.21)	.06	0.05
(2-10)	Con	7.24 (2.15)	7.28 (1.99)	7.58 (2.17)	-.02 (2.43)			.40 (2.53)		
Prototype (victim)	Exp	9.17 (1.43)	8.85 (1.78)	9.21 (1.60)	-.19 (1.63)	.05[h]	0.07	.03 (1.84)	-.02	0.03
(2-10)	Con	9.05 (1.78)	8.60 (2.16)	9.11 (1.81)	-.32 (2.08)			-.02 (1.99)		
PERPETRATION[i]										
Sexual harassment (committed) [f]	Exp	.41 (0.82)	n/a	.61 (1.23)	-	-	-	.03 (0.92)	-.21	-0.20
(0-9)	Con	.42 (0.78)	n/a	.84 (1.82)	-	-	-	.34 (1.97)		
Attitude towards sexual harassment	Exp	17.85 (1.86)	17.44 (2.50)	18.22 (1.98)	-.38 (2.44)	.02	-0.01	.44 (2.06)	.13[g]	0.21
(4-20)	Con	17.34 (2.52)	16.96 (2.68)	17.15(3.28)	-.35 (2.35)			-.12 (3.09)		
Perceived social norm	Exp	17.03 (2.32)	16.73 (2.98)	17.34 (2.80)	-.29 (3.21)	-.03	-0.07	.31 (2.83)	-.10[h]	0.06
(4-20)	Con	16.32 (3.00)	16.24 (3.07)	16.32 (3.53)	-.08 (3.04)			.11 (3.49)		

Table 3. Continued

Variable (range)	Group[a]	Mean (SD) [b] baseline	Mean (SD) [b,c] first post-test	Mean (SD) [b,c] follow-up	T1 - T0 Mean (SD) [b] difference score	T1 - T0 β [d]	T1 - T0 Effect size[e]	T2 - T0 Mean (SD) [b] difference score	T2 - T0 β [d]	T2 - T0 Effect size[e]
Self-efficacy	Exp	7.99 (1.63)	8.24 (1.72)	8.40 (1.76)	.22 (1.90)	.22[h]	0.20	.42 (1.85)	.19	0.18
(2-10)	Con	7.94 (1.70)	7.75 (1.89)	7.95 (2.01)	-.17 (1.91)			.08 (1.99)		
Intention	Exp	7.92 (1.93)	8.32 (1.75)	8.22 (1.94)	.44 (2.19)	**.29****	0.30	.43 (2.23)	.10	.014
(2-10)	Con	7.85 (2.00)	7.66 (1.86)	7.80 (2.08)	-.21 (2.15)			.10 (2.33)		
Prototype (perpetrator)	Exp	9.20 (1.40)	8.98 (1.73)	9.26 (1.53)	-.18 (1.53)	.14	0.10	.04 (1.91)	.20[h]	0.22
(2-10)	Con	9.31 (1.52)	8.85 (2.14)	8.87 (2.17)	-.38 (2.08)			-.41 (2.15)		
DISTAL FACTORS[i]										
Attitude towards gender roles	Exp	45.07 (7.56)	45.93 (8.02)	46.16 (9.19)	.83 (6.78)	-.02	0.02	.97 (8.36)	-.13	-0.12
(12-60)	Con	43.58 (8.66)	44.54 (8.47)	45.41 (9.33)	.71 (7.90)			2.05 (9.55)		
Attitude towards media influence	Exp	28.46 (5.82)	29.53 (6.23)	29.56 (6.80)	.99 (6.03)	.06	0.06	.92 (6.46)	.09	0.00
(8-40)	Con	27.30 (6.61)	27.82 (6.42)	27.94 (7.04)	.66 (5.87)			.89 (7.21)		
Sexual self-esteem	Exp	30.90 (5.31)	31.50 (5.46)	31.81 (4.99)	.51 (6.56)	.18	0.14	1.36 (5.97)	**.34****	0.29
(7-35)	Con	30.57 (5.02)	30.19 (5.62)	30.34 (6.03)	-.37 (6.21)			-.43 (6.46)		

[a] n may vary due to partial non-response

[b] crude means and SDs

[c] higher scores reflect scores in the desired direction

[d] fully adjusted β's

[e] Cohen's *d* for continuous variables

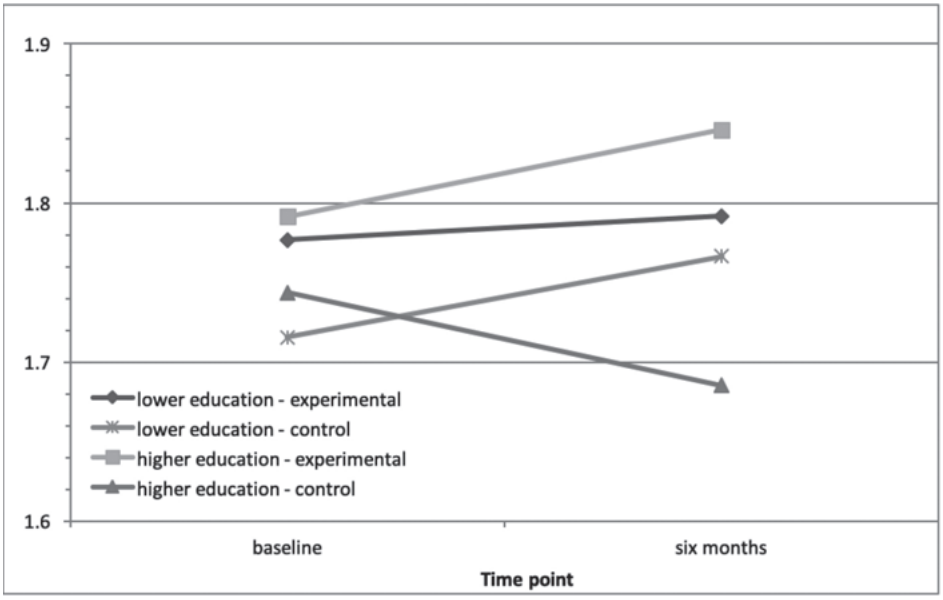
[f] no questions asked at first post-test

[g] Exp = experimental group; Con = control group

[h] main effect not statistically significant; statistically significant interaction effect

[i] Items of all determinants of behavior were re-coded in a way that higher scores reflect a more desirable outcome.

* p<.05; ** p<.01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higher education - experimental
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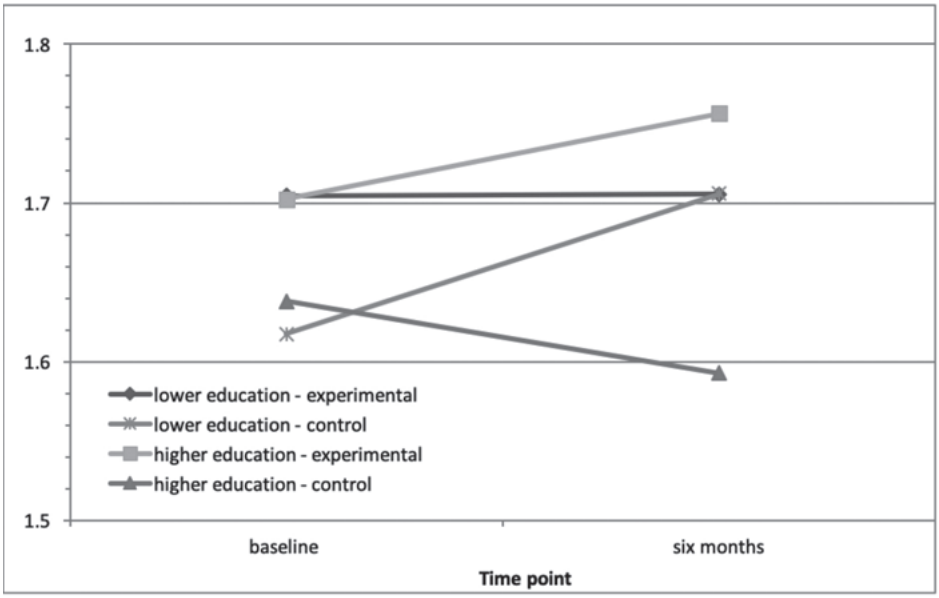
baseline
six months
Time point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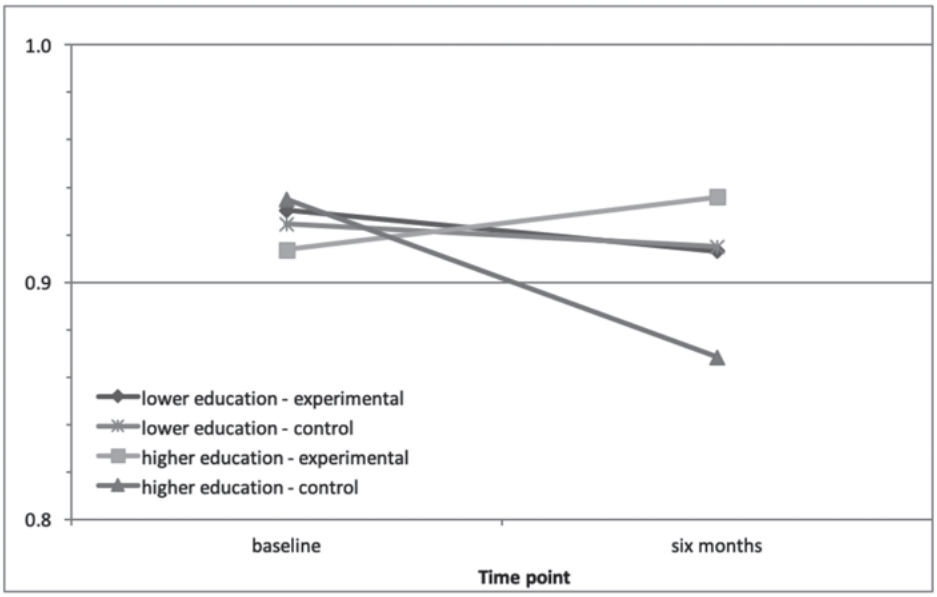


Fig. 3 Interaction effects between study group and educational level on (1) attitude towards committing sexual harassment, (2) social norm with regard to committing sexual harassment and (3) attitude towards prototype sexual harassment at six months follow-up (crude means)

Discussion

There are two reasons why it is necessary to research the effectiveness of programs preventing sexual harassment behavior. First, many adolescents experience sexual harassment. Second, adolescent victims of sexual harassment have higher risks regarding well-being and a number of health behaviors. These reasons led to this study, which assessed the effectiveness of *Benzies & Batchies*, a program that targets the prevention of sexual harassment behavior through a peer-performed play, peer-led group discussion and lessons for secondary school students given by trained expert instructors. This study examined the effects on sexual harassment behaviors (victimization and perpetration), determinants of these behavior and distal factors, and differences in subgroups of adolescents' gender, educational level and ethnicity.

At six-month follow-up, no significant effects were found on sexual harassment behavior (victimization and perpetration). This is in line with other study results on the prevention of adolescent sexual assault (Black et al. 2000) and of sexual harassment in dating situations (Foshee et al. 1998; Foshee et al. 2000). Research has shown that sexual harassment behaviors, such as making sexual comments or gestures, showing sexy or sexually explicit pictures, and touching someone in a sexual way are part of life within this age group (Hill and Kearl 2011; Temple and Choi 2014). The lack of effects on behavior may be explained by the relatively short

interval between measurement, the low frequency of self-reported sexual harassment behavior, and students' lack of awareness of the occurrence of sexual harassment behavior.

With regard to determinants of the behavior, relative to students in the control group, those in the experimental group had less intention of committing sexual harassment at first post-test and they reported a higher self-efficacy with regard to successfully rejecting sexual harassment by saying 'no'. At follow-up, the significant short-term effect on perceived social norm with regard to rejecting sexual harassment behavior had been sustained - students in the experimental group reported a more positive social norm with regard to rejecting sexual harassment than students in the control group. At follow-up, however, the effects on the other determinants had not. At six-month follow-up a significant effect was also found on sexual self-esteem: students in the experimental group reported higher sexual self-esteem than students in the control group. All significant effects had small effect sizes.

Although few effects differed with regard to adolescents' gender, educational level and ethnicity, the interaction effects that were found on the prototype image of a person their age who engages in sexual harassment behavior complement earlier research on adolescents' unintended behavior (Hukkelberg and Dykstra 2009). At follow-up, boys in the experimental group were found to have a more negative image of the prototype of a victim of sexual harassment.

Strengths and Limitations

Although many programs have been developed to address the risks and protective factors for intimate partner violence or sexual violence among adolescents, most were one-off pilots, had a weak research design or short follow-up periods (Lundgren and Amin 2015). The strengths of our study are its cluster-randomized controlled design and its six-month follow-up period. Neither, after the start of the intervention, were any of the participating schools lost to follow-up. And, although the study results are relevant to educating young urban students who engage in heterosexual contacts, the program also dealt with homophobic behaviors whenever the topic arose during the lessons.

However, there are also limitations, some of which are inherent to the challenges of conducting research in this particular target group. Firstly, as not all students reported having sexual experiences, they may not have been able to imagine being in a situation of sexual harassment and/or being interested in having a relationship or sex. Secondly, some questionnaire scales were developed or adapted for the purpose of this particular research. Their further validation is recommended. Thirdly, as we used students' self-reports on a delicate subject, the prevalence rates may have been underreported: students might have found it difficult to report having committed sexual harassment, or having been a victim of it. Finally, this study was

conducted in schools in an urban setting. Different results may be produced by research into the effectiveness of the *Benzies & Batchies* intervention in schools in non-urban areas.

Implications for Practice

Two promising results of this combination of a play and school lessons are the long-term effects on the perceived social norm against sexual harassment and the improvement in sexual self-esteem. Prior research showed middle adolescence (age 14-18) to be a significant period for the development of the personality and of ability to resist peer pressure (Steinberg and Monahan 2007). The development of a firm, positive social norm in this developmental phase may thus benefit adolescents' future sexual behaviors.

If, in subsequent years, schools extend health education on preventing sexual harassment behavior, tailoring it to the needs of the students of various age groups, this may reinforce the effects of the play and skills lessons we evaluate above, which were given to students aged 13 to 14. Older and more sexually experienced students may then use the cognitions they gained in earlier lessons in previous classes. It is recommended for different age groups that theme-based lessons on sexual behavior are combined with skills programs on social-emotional learning (Payton et al. 2008). Promising results on the effectiveness of transfer-oriented learning also suggest that the prevention of sexual harassment behavior might also be positively influenced by education on other sexual risk behaviors, such as the prevention of unprotected sexual intercourse and sexually transmitted diseases (Peters et al. 2013; Kirby et al. 2007). An intervention targeting a combination of these behaviors might prove effective.

Students' reactions to the program showed that they acknowledged the deployment of peer-educators and highlighted the importance of feeling safe in the group. While research on peer-led education showed no effects or only limited effects on behavior change (Stephenson et al. 2008; Mellanby et al. 2001), the present study and other studies on the effectiveness of education programs on sexual harassment and dating violence showed that the combination of a peer-led play and skills lessons can have an impact on the students' cognitions regarding the targeted behavior (Foshee et al. 2004; Foshee et al. 1998).

Recommendations for Further Research

The findings of our study highlight the importance of research on the prevention of adolescent sexual harassment. We recommend an evaluation study in which students' behavior is followed up over a longer period. Since we found students with a higher educational level in the experimental group reported a more negative attitude and a more negative social norm towards committing sexual harassment, and they reported a more negative attitude towards the prototype of a perpetrator as well, further research is also necessary to examine whether

Benzies & Batchies suits the needs of those whose educational level is lower. Further research is also recommended on how intervention designers should address prototypes of victims and perpetrators of sexual harassment in their programs. More insight is needed into how students of all educational levels can change their prototype beliefs, and into how such change can affect their behavior over time.

Conclusion

Many adolescents experience sexual harassment behavior - as victims, perpetrators or both. The prevention of this behavior is important because adolescent victims have higher risks regarding well-being and health behaviors such as suicidal thoughts, suicidal ideation and feeling unsafe at school. This study adds to the evidence on the effectiveness of programs preventing sexual harassment behavior. The *Benzies & Batchies* program targets the prevention of sexual harassment behavior through a peer-performed play, peer-led group discussion and lessons for secondary school students given by trained expert instructors. Our research into the effectiveness of the program showed that, in the short term, students had less intention to commit sexual harassment behavior. It also showed a short and longer-term change in their perceived social norm with regard to rejecting this behavior and their sexual self-esteem. Effects on these determinants will benefit adolescents' future sexual behaviors. We, therefore, conclude that combination of the play and the lessons have the potential to prevent sexual harassment behavior. These effects could be reinforced by combining continued health education on preventing sexual harassment behavior in subsequent school years with education on other sexual risk behaviors or skills programs on social-emotional learning.

Compliance with Ethical Standards

Funding. This work was supported by the Netherlands Organization for Health Research and Development (ZonMw), grant number 12427.0002.

Ethical approval. Under the Dutch Medical Research Involving Human Subjects Act, medical ethical approval was not required for this study.

Informed consent. We applied a passive consent procedure: students could object to filling out the questionnaire.

5

EFFECTS OF A SCHOOL-BASED PROGRAM FOR PREVENTING ADOLESCENT SEXUAL HARASSMENT IN MALE STUDENTS: A QUASI-EXPERIMENTAL CONTROLLED EVALUATION STUDY

De Lijster, G.P.A., Vink, R., van Oosten, N., Kok, G., & Kocken, P.L. (2018).
To be submitted.

Abstract

Because of its negative health effects, the prevention of sexual harassment among adolescents is urgent. Few preventive programs focus on boys only. This study aimed at the evaluation of the effectiveness of the preventive sexual harassment program *Boys* in male students of pre-vocational secondary education. We used a quasi-experimental design (N = 29 schools; 391 male students; mean age 13.8 years). All students filled out a questionnaire before the program started, just after the program had ended (first post-test), and again six months later (follow-up). We found less traditional attitudes toward gender roles in the intervention group at first post-test, and at six months follow-up. However, the control group showed a decrease in these attitudes as well. A similar effect was found for sexual harassment behaviors at follow up: male students in both groups showed an increase in perpetration behaviors and slightly more favorable rejection behaviors. No statistically significant effects on self-reported sexual harassment behaviors were found. We conclude that a similar, natural course in the male adolescents' sexual and behavioral development can be observed, regardless of being a participant of the *Boys* intervention. The program's teaching methods should be further adapted to the needs and development of male students attending pre-vocational secondary education.

Introduction

Sexual harassment behavior is a growing problem in modern society. Mass media, policy makers, and schools all devote increasing attention to these unwanted behaviors, which include sending and receiving sexually explicit pictures through social media (sexting), pinching a person against their will on the breasts or buttocks, and forcing a person to have sex. Being a victim of sexual harassment has negative health effects, such as increased rates of alcohol, drug use, smoking, depression, fear, and thoughts of suicidal ideation (Timmerman 2005; Exner-Cortens et al. 2013). Research shows that young women are more often victim of sexual aggression than young men (Krahé et al. 2014). As milder acts of sexual harassment behaviors may progress into more violent ones in time (Ybarra and Thomson 2017), there is an urgent need for effective preventive intervention programs. Although perpetration rates for males are higher than for females at age 12-25 years (80% vs 40%) (Krahé et al. 2014), few interventions focus only on boys.

The perpetration of unwanted sexual behavior among adolescents is due partly to determinants such as strong peer pressure to have sex, having a positive attitude towards provocative or challenging sexual behavior, having more traditional ideas about gender roles, and following a nonlinear sexual trajectory in which adolescents experience limited learning opportunities with regard to their own sexual development (De Bruijn et al. 2006; Ybarra and Thompson 2017; McNaughton Reyes et al. 2016; De Graaf et al. 2007). Moreover, sexual harassment is associated with lower educational attainment, ethnicity, and increased relationship length (Dardis et al. 2014; De Graaf et al. 2014; Clear et al 2014). At this moment, numerous school-based interventions for preventing or reducing adolescent sexual harassment and teen-dating violence exist (Fellmeth et al. 2013; De La Rue et al. 2017). These interventions address the determinants of behavior mentioned above and taken from for example the Reasoned Action Approach (Fishbein and Ajzen 2010), Social Learning Theory (Bandura 1986) and attitudes towards gender roles (Hofstetter et al. 2014). Recent research found effects on these determinants of sexual harassment behavior, such as decreased intention to commit sexual harassment behavior, changed perceived social norm with regard to rejecting this behavior and increased knowledge about dating violence (De Lijster et al. 2016; De La Rue et al. 2017). Preventive interventions targeting male adolescent sexual harassment perpetration show mixed results on determinants of behavior. Van Lieshout and colleagues (2016) found no effects on determinants of behavior, such as attitude and self-efficacy; whereas Miller and colleagues (2012) did find positive results on intentions. Meta-analyses of interventions for preventing sexual harassment behaviors could not demonstrate significant effects on the behaviors itself (Fellmeth et al. 2013; De La Rue et al. 2017).

Greater insight into the effectiveness of preventive interventions is needed, especially because milder acts of sexual harassment behaviors may progress into more violent ones in

time (Ybarra and Thomson 2017). As stated, sexual harassment perpetration rates are high in males and lower educated students (Ybarra and Thomson, 2017). Therefore, the prevention of the unwanted behaviors in these target groups is important. The present study examined the effectiveness of *Boys* (Van Ardenne et al. 2008), a school-based program aimed at male students aged 12-16 years from vocational-streamed schools to prevent adolescent males' sexual harassment of girls and women. The program was developed in the Netherlands out of the need to address not only victims but also perpetrators of sexual harassment.

We added, next to the cognitive principles of the Reasoned Action Approach (Fishbein and Ajzen 2010) and Social Learning Theory (Bandura 1986), a principle of the Prototype Willingness Model (Gibbons et al. 2004) to the theoretical model of *Boys* (see Figure 1), namely prototype image. The period of adolescence is a turbulent period in which the adolescent finds himself in social interaction with peers and actions may not be reasoned, but a reaction to social-environmental situations, such as the positive evaluation of a prototype of a person who engages in sexual harassment perpetration (Rivis et al. 2006; Gerrard et al. 2008). *Boys* target the following behavioral determinants relevant for sexual harassment behavior, attitude towards the behavior, perceived social norm, perceived behavioral control, intention, prototype images, and attitudes towards gender roles.

Our study was intended to establish the effects of *Boys* on sexual harassment behaviors and these six determinants.

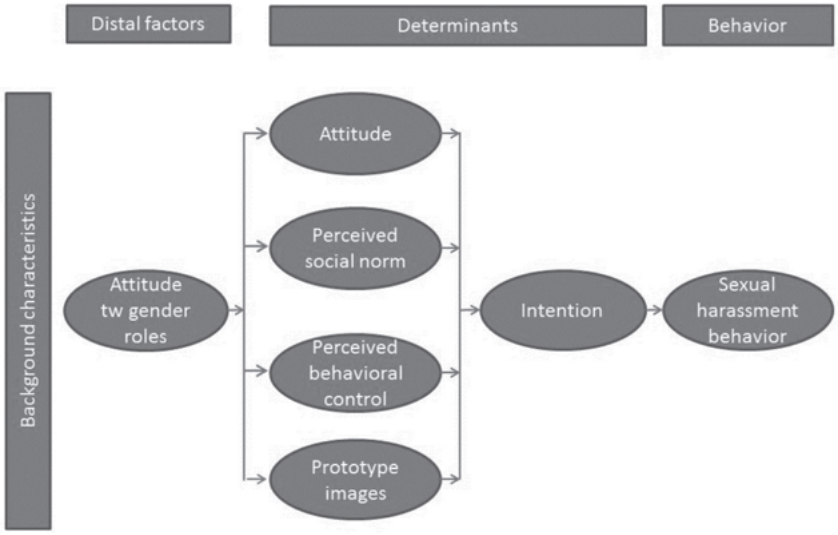


Fig. 1 Theoretical model for *Boys*

Methods

Intervention

Boys (Van Ardenne et al. 2008) was first implemented in 2008, since then it has been carried out many times across the Netherlands. It is intended to improve adolescent male students' attitudes towards the following: sexual harassment, perceived behavioral control, perceived social norm, gender-role attitudes, and intentions regarding rejecting and not committing sexual harassment. It is also intended to transmute positive assessments of the prototype image of a male perpetrator into a negative assessment (Todd and Mullan 2011; Hukkelberg and Dykstra 2009; Webb and Sheeran 2006).

The *Boys* program consists of five consecutive lessons intended to teach male students skills with regard to relational and sexual behavior. It's main purpose is to prevent adolescent males' sexual harassment of girls and women. It is also intended to help boys to set a standard for normal sexual behavior. The program uses methods, such as planning coping responses and resisting social pressure, to positively influence determinants of male sexual harassment behavior. The strategies used in the lessons include guided discussions, in order for the boys to reach a mutual standard for sexual behavior; and materials such as worksheets and short films, in which male adolescents' testimonials on experiences in engaging in (sexual) relationships were presented.

The target group for our study consisted of young urban adolescent males aged 12-16 years. They had a range of ethnic backgrounds and were attending practically and vocationally educational tracks in vocational-streamed schools, which employ admission criteria for students, such as having learning arrears of three years or more in reading, spelling and/or arithmetic. Each lesson lasted 50 minutes (basic lesson) and was constituted around a specific subject: sex (lesson 1), girls (lesson 2), men (lesson 3), love (lesson 4) and boundaries with regard to sexual behaviors (lesson 5). The first lesson was intended to raise boys' awareness of how they and their peers think about sex, the second discussed the possible differences between men and boys, and the third focused on girls and women, particularly the participants' own relationships with the various women in their personal life. Lesson four was about love, feelings and the behaviors associated with romantic love. The fifth and final lesson was intended to make the boys aware of what sexual harassment behaviors are, and also of the various types of boundary: boundaries according to the law, social boundaries, and definitions of limits. To deepen the subject, each lesson could be extended by an extra 50 minutes (extended lesson). Male students received the lessons separately from female students, who took an unrelated program. The intervention program was presented by experienced male instructors from outside the school, who had been trained to teach this subject and were not teachers at the participating schools.

Participants and Procedure

For participation in this study, we approached 36 schools in an urban area in the Netherlands. Each offered pre-vocational secondary education with mainstream learning pathways (vocationally oriented learning, theoretically oriented learning and mixed vocationally-theoretically oriented learning) and specific practical pathways for low-achievers (Government of the Netherlands, n.d.; Maes et al. 2004). Six schools did not respond and one was excluded from participation as it had already carried out the *Boys* program. Thus, in total number, 29 schools participated in the study (see Figure 2).

A passive consent procedure was used: all students and their parents were given the opportunity to refuse participation in the research. None of the respondents waived participation. The Dutch Central Committee on Research Involving Human Subjects (CCMO) found that medical ethical approval for this study was not necessary under the Medical Research Involving Human Subjects Act. The protocol for this research was approved by the Research Board of The Netherlands Organisation for applied scientific research (TNO).

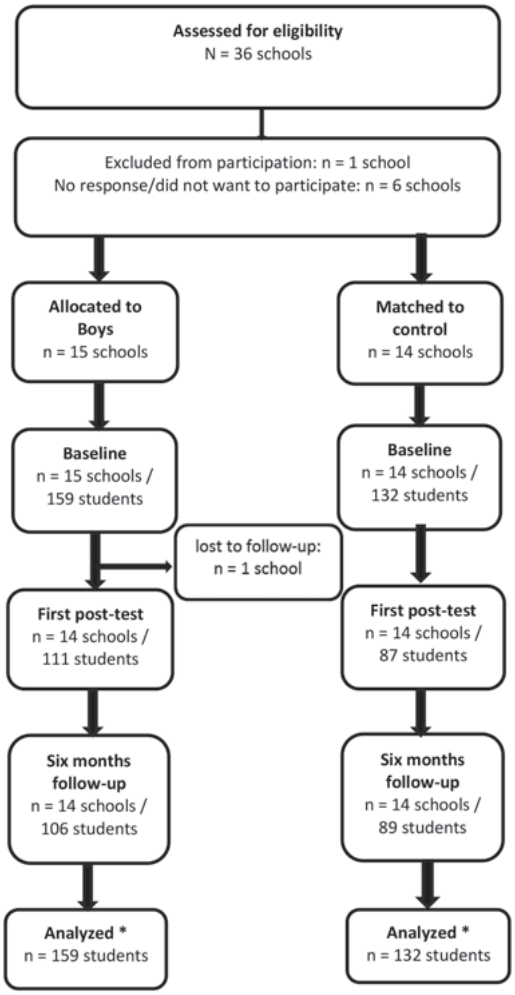
A quasi-experimental controlled design was followed: 15 schools were assigned to the experimental group; for the waiting list control group, 14 schools were matched to schools in the experimental group on the basis of school size (i.e., number of students), educational level, and the extent to which the school area was urbanized. The schools in the control group had the opportunity to receive the intervention after data collection was completed.

Male students in the experimental group received the intervention's five basic 50-minute lessons. To ensure that all classes attended similar lessons and that the study objective was well defined, only these basic lessons and not the extended lessons were evaluated. The trained male instructors followed the manual for the curriculum, but could if necessary adapt or switch exercises to respond properly to questions and the atmosphere in the group.

The intervention was carried out between October 2011 and December 2012. Per school, the duration of the program ranged from 4 to 13 weeks.

The male students in the experimental group filled out digital questionnaires in the classroom at three measurement points: before the series of five lessons (baseline; T0), just after it (post-test; T1) and six months after the series of lessons had ended (follow-up; T2). The 14 schools in the control group carried out their usual school curriculum. The male students in the control group filled out the digital questionnaires parallel to the male students in the experimental group. To access the digital questionnaire at each measurement, all students were provided with a code. Filling out the questionnaire took about 20-30 minutes. To supervise the procedure and assist the students, two male research assistants were present at each measurement. Respondents received a small present after filling out the follow-up questionnaire.

Baseline data were collected from 291 respondents. At first post-test, the questionnaire was completed by 198 of these respondents (68%); at six months follow-up it was completed by 195 (67%). Two reasons were provided for students' inability to complete the questionnaire at one of the measurement points: student's absence (e.g., due to sickness) and timing of the measurement (e.g., after school hours). One school in the experimental group was lost to follow-up.



* In the analyses, multiple imputation was used to deal with the missing data.
Fig. 2 Flow chart

Measures

The questionnaire (see Table 1) was intended to establish the students' sexual harassment behavior in the previous six months and the determinants of this behavior. It included standard measures derived from questionnaires used in earlier studies, which had included scales based on determinants of behavior taken from the Reasoned Action Approach (Fishbein and Ajzen 2010), Social Learning Theory (Bandura 1986) and the Prototype Willingness Model (Gibbons et al. 2004). The questionnaire also included attitudes towards gender roles (Hofstetter et al. 2014). It was first pretested among male students in lower education, and some questionnaire items were simplified to enable the readability of the questionnaire.

Sexual harassment behavior

At baseline and six months follow-up, a 7-item scale was used to assess boys' perpetration of sexual harassment in the past six months (see Table 1). The items were based on questionnaires used in earlier Dutch research on adolescent sexual harassment and adapted for this study (De Graaf et al. 2005; Kuyper et al. 2009). They covered questions on non-physical and physical behaviors, e.g., insisting on having sex with a girl; pinching a girl's breasts or buttocks; promising a girl something in return for sex, and forcing a girl to have sex. Two questions were also asked on rejection of sexual harassment in the previous six months: "In the last six months, have you said 'no' to a girl who wanted to have sexual contact with you, while you didn't want to?" and "In the last six months, have you let your girlfriend know you didn't want to go further doing sexual things, because you didn't want to?". Responses were on a three-point Likert scale, ranging from 'never' (1) to 'more than once' (3).

Table 1. Questionnaire scales and items

scale and score range (min-max)	number of items	Cronbach's α or Pearson's r	examples of items and answer categories
Sexual harassment perpetration (7-21)	7	α = 0.53	In the past six months, have you ever stared at someone with sexual intent or made sexual advances towards them when they didn't want you to? Never (1) – once – more than once (3)
Sexual harassment rejection (2-6)	2	r = 0.41	In the past six months, did you ever say "no" to a girl who wanted to have sexual contact with you when you didn't want it? Never (1) – once – more than once (3).
Attitude towards sexual harassment (8-40)	8	α = 0.71	Against her will, you pinch a girl's breasts or buttocks. What do you think of this? Not good at all (1) – very good (5)

Table 1. Continued

scale and score range (min-max)	number of items	Cronbach's α or Pearson's r	examples of items and answer categories
Perceived social norm (5-25)	5	α = 0.77	Against her will, you pinch a girl's breasts or buttocks. What would your friends think of this? Not good at all (1) – very good (5)
Example scenario: "Imagine: you're at the pool with a couple of guys. There are a couple of girls at the pool as well. One of the guys, who you think is daring, keeps telling you to pinch one of the girl's buttocks, but you don't want to".			
Perceived behavioral control (succeed) (2-6)	2	r = 0.28	Do you think you could tell him that you didn't want to pinch her buttocks? Yes (1) – no (3)
Perceived behavioral control (difficult) (2-6)	2	r = 0.17	Do you think it would be difficult not to pinch her buttocks? Yes (1) – no (3)
Intention (3-9)	3	α = 0.68	I'd say "no" if someone asked me this – and I'd say "no" in future, too. Yes (3) – no (1)
Prototype image (2-10)	2	r = 0.38	I think that a boy who wants to have sex with a girl (like kissing, fondling or having sexual intercourse) when she doesn't want to, is … Bad (1) – good (5)
Attitude towards gender roles (12-60)	12	α = 0.69	It's more important for a girl to remain a virgin until she gets married than it is for a boy to remain a virgin Totally agree (1) – totally disagree (5)

Attitude and perceived social norms regarding sexual harassment

Scales for assessing attitude and perceived social norms regarding sexual harassment were based on determinants of behavior taken from the Reasoned Action Approach (Fishbein and Ajzen 2010). To assess respondents' attitude towards sexual harassment, we used a 7-item scale. To assess perceived social norms, we used a 5-item scale. Each respondent was asked to rate what he would think of sexually harassing someone (respondents' attitude), and what his friends would think if he did so (perceived social norm). For example: "How would you feel about pinching a girl's breasts or buttocks against her will?" (respondents' attitude) and "What would your friends think about you if you pinched a girl's breasts or buttocks against her will?" (perceived social norm). Responses were on a 5-point Likert scale, ranging from 'not good at all' (1) to 'very good' (5).

Perceived behavioral control and intention

Two hypothetical scenarios concerning male adolescent sexual harassment were presented, each depicting a situation from real life. Example scenario: "Imagine: you're at the pool with a couple of guys. There are a couple of girls at the pool as well. One of the guys, who you think is daring, keeps telling you to pinch one of the girl's buttocks, but you don't want to". Each scenario was followed by the following: 1) one question targeting perceived behavioral control with regard

to successfully not performing the unwanted behavior (e.g., "Do you think you could tell him that you didn't want to pinch her buttocks?"); 2) one question targeting perceived behavioral control with regard to difficulty in not performing the behavior (e.g., "Do you think it would be difficult not to pinch her buttocks?") and 3) two questions targeting intention with regard to saying 'no' to performing the behavior (e.g., "I'd say 'no' if someone asked me this – and I'd say 'no' in future, too," and "I'd always say I didn't want to do it"). Responses were on a 3-point scale: 'yes' (1), 'perhaps' (2), 'no' (3).

Prototype image

An image of a male adolescent sexual harassment perpetrator was described on the basis of the Prototype Willingness Model (Gibbons et al. 2004; Connor and Norman 2005): "I think that a boy who wants to have sex with a girl (like kissing, fondling or having sexual intercourse) when she doesn't want to, is …". Respondents were asked to state their opinion with regard to this image, i.e., whether they thought of the perpetrator as being either bad (1) or good (5); and whether they thought of the perpetrator as being strong (1) or weak (5).

Attitude towards gender roles

A scale assessing attitude towards gender roles consisted of 12 items (Hofstetter et al. 2014). For example: "It's more important for a girl to remain a virgin until she gets married than it is for a boy to remain a virgin". Responses were on a 5-point scale ranging from 'totally agree' (undesired attitude; (1)) to 'totally disagree' (desired attitude; (5)).

Background characteristics

Background characteristics with regard to age, educational level and ethnicity were established. It was also established whether the students were in a relationship and had ever had sexual intercourse. Each adolescent's ethnicity was established on the basis of the parents' country of birth: adolescents were classified as Dutch if both their parents had been born in the Netherlands, and as non-native if both their parents had been born outside the Netherlands.

Data Analysis

To describe and test the background characteristics of the students in the study groups at baseline, descriptive analyses, Student's t-tests and Chi-square tests were performed. The scales measuring behavior and determinants of the behavior were validated through factor and reliability analyses of the baseline data. When necessary, items were removed from the scale to improve scale reliability. Answer categories on sexual harassment perpetration and rejection scales were dichotomized into 'never' and 'once or more' and then summed. Higher scores

reflect a higher frequency of sexual harassment behavior. Questionnaire items on determinants of behavior were re-coded, such that higher scores would reflect a more desirable outcome. We calculated mean-difference scores against the pre-test and standard deviations (SD) for the first post-test and six months' follow-up (Van Breukelen 2006), and also calculated the effect sizes (Cohen's *d*) of the mean-difference scores (T1-T0; T2-T0) (Cohen 1992). To compare effects, outcomes for each subscale were standardized.

Many male students either did not complete the questionnaire at all three measurements and/or did not complete all questions in the questionnaire (33 – 34% in the experimental group; 30 – 33% in the control group). In the analyses we used multiple imputation to deal with the missing data. Imputations were made 10 times to take account of all background characteristics, group (experimental or control) and subsequently scale scores for the outcome measures. The multiple imputation was performed in SPSS (version 20.0) using the predictive mean-matching algorithm with 50 iterations. Data from 291 questionnaires were included in the analyses.

Next, to obtain effects of the intervention at first post-test and six months follow-up, we conducted multilevel analyses, using a two-level random intercept model with student at the first level and school at the second level. To test the main effect of study group (i.e., experimental vs. control group), we conducted a series of multilevel analyses, adjusting for ethnicity, relationship and baseline scores. Main effects were statistically significant at a p-value of <.05 (2-sided).

Data were collected using the free version of Survey Monkey (1999-2018). To analyze the data, we used SPSS (version 20.0).

Results

Respondents' Characteristics

As Table 2 shows, students in the experimental group differed significantly at baseline from those in the control group with regard to ethnicity and to whether they were in a relationship. Almost three-quarters (70%) of those in the experimental group had a non-native background, against 58% of those in the control group. Significantly more students in the experimental group (27%) reported being in a relationship than those in the control group (16%). Otherwise there were no overall differences between the study groups with regard to the following: age (mean age 13.8 years in both study groups); educational level, the number who had had sexual intercourse (21% for students in the experimental condition vs. 17% for students in the control condition), having perpetrated sexual harassment in the past six months (reported by 51% of those in the experimental condition and 43% in the control condition); and having rejected sexual harassment in the past six months (reported by 26% in the experimental group and 23% in the control group) (see Table 2).

Table 2. Background characteristics of male students at baseline

	experimental group (n = 159)	**control group (n = 132)**
	M (*SD*)	M (*SD*)
Age in years	13.8 (0.5)	13.8 (0.6)
	n (%)	n (%)
Age in years		
- 13 years or younger	43 (27)	44 (33)
- 14 years	97 (61)	76 (58)
- 15 years	19 (12)	12 (9)
Ethnicity*		
- Native	47 (30)	56 (42)
- Non-native	112 (70)	76 (58)
Educational level		
- Practically and vocationally oriented learning pathways	137 (86)	104 (79)
- Theoretically and mixed learning pathways	22 (14)	28 (21)
In a relationship*		
- Yes	43 (27)	21 (16)
- No	116 (73)	111 (84)
Experience of sexual intercourse		
- Never	126 (79)	110 (83)
- Once or more	33 (21)	22 (17)
Had committed sexual harassment [a]		
- Never	75 (49)	71 (57)
- Once or more	79 (51)	54 (43)
Had rejected sexual harassment [b]		
- Never	116 (74)	98 (77)
- Once or more	40 (26)	30 (23)

[a] Missing = 12

[b] Missing = 7

*p<.05

Effects on Sexual Harassment Behavior

At six months follow-up we found that the intervention had had no statistically significant effects on the perpetration and rejection of sexual harassment (see Table 3). Rather, relative to baseline, students in both groups reported an increase in perpetration behaviors, suggesting a similar development in both groups. However, with regard to the rejection of unwanted sexual behaviors, students in both groups reported a slight increase in the desired direction.

Effects on Determinants of Behavior

At first post-test we found that the intervention had had no statistically significant effects on the determinants of perpetrating and rejecting sexual harassment (see Table 3). Rather, students in both groups showed an undesired worsening of attitude towards the following: sexual harassment (i.e., they had a more positive attitude towards sexual harassment behavior); prototype image of a perpetrator (i.e., they rated the prototype image of a perpetrator as less bad and less weak); perceived social norm (i.e., they thought their friends would mind less if they were to commit sexual harassment behavior); and perceived behavioral control (i.e., they reported that they were less capable of saying that they did not want to perform the undesired behaviors, and they would find it more difficult not to perform them). However, in both groups, attitudes towards gender roles improved in the desired direction, with all students reporting that they had less traditional views on gender roles.

At six months follow-up, we found that the intervention had had no statistically significant effects on the determinants of sexual harassment behavior (see Table 3). However, as with the results at first post-test, we found an improvement in attitude towards gender roles in both groups. Both groups also showed a slight increase in their intention to say 'no' to committing unwanted sexual behaviors. At follow-up, the deteriorations noted at first post-test were maintained in both groups with regard to all of the following: attitude towards sexual harassment, prototype image of a perpetrator, perceived social norm and perceived behavioral control.

At six months follow-up we found a small, positive, effect size of $d = 0.21$ for perceived behavioral control with regard to successfully not performing the unwanted behavior (Cohen 1992). This was because these scores showed a smaller decrease for students in the experimental group than those students in the control group. All other effect sizes were negligible.

Table 3. Main effects (experimental vs. control group) on sexual harassment (perpetration and rejection) and on determinants of sexual harassment at first post-test and 6 months follow-up

					T1 - T0			T2 - T0		
Variable (range)	Group	Mean (SD) [a] baseline	Mean (SD) [a,c] first post-test	Mean (SD) [a,c] follow-up	Mean (SD) [a,c] difference score	Effect size [d]	β [b]	Mean (SD) [a,c] difference score	Effect size [d]	β [b]
Committed sexual harassment behavior [e]	Exp [f]	.89 (1.15)	n/a	1.86 (2.10)	-	-	-	.96 (2.22)	-0.068	-.03
(0-7)	Con [f]	.81 (1.21)	n/a	1.91 (2.17)	-			1.11 (2.17)		
Rejected sexual harassment behavior [e]	Exp	.36 (0.65)	n/a	.52 (0.75)	-	-	-	.16 (0.92)	-0.011	-.02
(0-2)	Con	.33 (0.62)	n/a	.50 (0.75)	-			.17 (0.91)		
Prototype image perpetrator sexual harassment	Exp	7.98 (2.01)	7.14 (2.76)	7.10 (2.64)	-.85 (3.17)	0.166	.21	-.88 (2.90)	0.039	.06
(2-10)	Con	8.14 (2.07)	6.76 (2.93)	7.14 (2.90)	-1.38 (3.21)			-1.00 (3.21)		
Attitude towards sexual harassment	Exp	31.5 (4.46)	29.72 (7.27)	30.84 (7.05)	-1.78 (7.05)	0.061	.04	-.65 (7.29)	-0.016	-.05
(8-40)	Con	32.36 (4.69)	30.13 (7.65)	31.84 (7.26)	-.2.23 (7.75)			-.53 (7.66)		
Perceived social norm	Exp	17.89 (4.33)	15.59 (6.09)	16.83 (5.18)	-2.30 (6.37)	-0.046	.00	-1.06 (5.60)	0.053	.09
(5-25)	Con	17.88 (4.84)	15.88 (6.27)	16.51 (5.59)	-2.00 (6.62)			-1.37 (6.15)		
Perceived behavioral control (succeed)	Exp	4.84 (1.23)	4.63 (1.38)	4.77 (1.32)	-.22 (1.64)	0.095	.10	-.08 (1.62)	0.21	.21
(2-6)	Con	4.95 (1.14)	4.57 (1.42)	4.53 (1.48)	-.38 (1.73)			-.42 (1.62)		
Perceived behavioral control (difficult)	Exp	4.81 (1.24)	4.43 (1.39)	4.47 (1.35)	-.38 (1.76)	0.115	.11	-.33 (1.70)	0.096	.07
(2-6)	Con	4.89 (1.19)	4.31 (1.35)	4.39 (1.42)	-.58 (1.72)			-.50 (1.83)		
Intention	Exp	6.11 (1.84)	6.19 (1.89)	6.38 (1.89)	.08 (2.13)	0.065	.04	.27 (2.08)	0.096	.10
(3-9)	Con	6.18 (1.98)	6.12 (1.96)	6.24 (1.97)	-.06 (2.16)			.06 (2.30)		
Attitude towards gender roles	Exp	35 (8.12)	38.88 (11.84)	39.84 (11.24)	3.88 (11.60)	-0.066	-.05	4.84 (11.75)	-0.066	-.08
(12-60)	Con	36.74 (7.36)	41.42 (12.64)	42.37 (12.49)	4.69 (12.87)			5.63 (12.33)		

[a] crude means and SDs (imputed variables)
[b] fully adjusted β's (pooled)
[c] higher scores reflect scores in the desired direction; scores regarding behavior relate to frequencies
[d] Cohen's *d* for continuous variables
[e] no questions asked at first post-test
[f] Exp experimental group (n = 159); Con control group (n = 132)

Discussion

Sexual harassment is a growing problem in modern society, and can lead to various unfavorable health outcomes (Exner-Cortens et al. 2013; Timmerman 2005). Although adolescents of both sexes engage in sexual harassment (as victims and/or as perpetrators), male perpetration rates are higher than female ones (Krahé et al. 2014). These problems in young males are the rationale behind this study, which assessed the effectiveness of *Boys*, an intervention program that targets sexual harassment by males. The program consists of five school-based lessons that are given by trained male instructors to male students in the lower levels of secondary vocational education. This study examined the effects of *Boys* on two sexual harassment behaviors – perpetration and rejection – and their determinants.

At six months follow-up, we found in both the experimental and the control group that the intervention had not affected students' perpetration or rejection of sexual harassment. Instead, at six months follow-up, students in both groups reported more perpetration behaviors. While they also reported slightly more rejection behaviors – a desired outcome – we found at first post-test and at six months follow-up that the intervention had not affected the determinants of perpetrating and rejecting sexual harassment. We nonetheless found an improvement in attitude towards gender roles: at first post-test and at six months follow-up, boys in both study groups reported having less traditional views on gender roles. These findings suggest that this development was similar in both groups, and may be natural in adolescent boys.

The increased perpetration of sexual harassment by students in both groups may be integral to boys' development and to their regarding this behavior as 'common' and 'part of daily life' (Timmerman 2005), at least for students in these lower-education pathways. The fact that a relatively large number of boys in this relatively young group reported having experience of sexual intercourse suggests that a large number of boys are already sexually active and thus sexually experienced. As experience is gained partly through experimentation and 'learning by doing', mistakes are inevitably made throughout the process; most of the time sexual behavior involves two parties, if the sexual boundaries of the person or people involved are not clear, sexual behaviors may be expressed as sexual harassment behaviors (Gijs et al. 2009). Also, lower-educated adolescents more often than higher-educated adolescents, seem to follow a nonlinear sexual trajectory, resulting in a possible lack of emotional, social and planning skills with regard to their sexual behavior (De Graaf et al. 2007).

Students may also have been primed by completing the questionnaires and have come to realize what sexual harassment behaviors constitute.

By the time they move from primary to pre-vocational secondary education, many non-native boys – due possibly to factors in their cultural background – may have accumulated a learning backlog. One way or another, this contrasts with the fact that many native boys in pre-vocational

education have behavioral problems (Hartgers 2012). It is therefore possible that the preventive working of the intervention program may be inhibited by the native boys' behavioral problems. To check, we explored effects within strata of ethnicity at first post-test and at six months follow-up and found that ethnicity seemed relevant with regard to perpetrating sexual harassment and to perceived behavioral control. We noted at six months follow-up that non-native students in the experimental group reported a smaller increase in their perpetration of sexual harassment than non-native students in the control group. Similarly, relative to mean scores at baseline, we noted at first post-test that the degree of perceived behavioral control with regard to successfully not performing the unwanted behavior in non-native students in the experimental group had stayed the same, but had decreased in non-native students in the control group.

Vagi and colleagues (2013) identified 53 risk factors associated with adolescent dating violence perpetration, including factors related to substance use, youth violence, and poor family quality. As the *Boys* program is a universal school-based program to prevent male adolescent sexual harassment perpetration, these risk factors were not included in our research.

Strengths and Limitations

A strength of this study is its quasi-experimental design, which included a control group and involved a real-life setting within schools that had been matched according to educational level and to the extent to which their area was urbanized. As our analyses controlled for differences in the characteristics of the study groups, we were able to draw conclusions on the difficult subject of sexual harassment in a study population comprising male students in lower secondary-education pathways. Due to the large number of students who did not complete the questionnaire at each measurement and/or did not complete all questions in the questionnaire, we chose to deal with the missing data by using multiple imputation in the analyses. This enabled us to analyze a larger set of data.

However, it is challenging to research students with a lower educational level, especially those in practically and vocationally oriented learning pathways in pre-vocational secondary education, whose admission criteria are an IQ between 55 and 80, and learning arrears of three years or more in reading, spelling and/or arithmetic (Rijksoverheid n.d.). Although we simplified the language of the questionnaire items and pilot tested the questionnaire, the students' educational level may not have been enough for the comprehensiveness or difficulty of the items and scenarios it contained. Despite the pilot test and assistance in the school class, the students may have had difficulty imagining a scenario with sexual content they had not yet experienced. Further research should examine ways in which data can be collected in this specific group of students with lower cognitive abilities.

Implications for Practice

Although *Boys* satisfies various principles required for an effective prevention program – including comprehensiveness, appropriate timing, well-trained staff and socio-culturally relevance (Nation et al. 2003) – there is scope for improvement, especially with regard to variations in teaching method, intervention dosage and intervention content. More varied teaching methods corresponding to the learning habits of the students are needed (Schmidt and Čreslovnik 2010). Rather than acquiring their knowledge from books, students attending these pre-vocational education pathways learn by doing things in practice. This study focused on the parts of the *Boys* intervention that are presented most in practice: the five basic lessons. In other words, we did not include their optional extensions. Because role play and guided practice were part of the extended lessons and were not included in the basic lessons, less attention was paid to perceived behavioral control in the five basic lessons. This may have caused the results of the intervention to be less satisfactory than expected. To enhance their perceived behavioral control, we therefore recommend that behavior-change techniques – such as behavioral rehearsal/practice and instruction on how to perform a behavior (Michie et al. 2013) – are incorporated into the basic lessons of the intervention. As the repetition of information is very important for students of a lower educational level, the intervention should also be dosed differently. We recommend that the five optional extensions are incorporated into the intervention, which, extended by five lessons, will thus become a 10-lesson intervention; although we acknowledge that this may not be convenient in terms of timetabling. Because these students' attention span is limited, the duration of each lesson should not be increased. The content of these lessons also requires account to be taken of these boys' developmental age, not just their calendar age, as these two do not always agree with each other. Moreover, in line with results of previous research on the association between adolescents' current aggressive behavior and first perpetration of sexual violence (Ybarra and Thompson 2017), more attention needs to be given to the differences in problems that are encountered by students in pre-vocational education, being either behavioral, educational or developmental.

The schools and the teachers involved in this research were all of the opinion that the subject of sexual harassment should be embedded within their organizations and curricula, possibly including subsequent school years (Van Oosten and De Lijster 2014). It might also be possible and desirable to connect this theme to a broader program focused on life skills. And it is certainly the case that safety and openness within such groups of boys are enhanced by the use of male instructors to present a prevention program on such a delicate subject.

Recommendations for Further Research

At six months follow-up, all students, irrespective of group, reported increased perpetration of sexual harassment. We therefore argue that greater insight is needed into the developmental trajectory of these behaviors over time. A longitudinal cohort study or qualitative research would help fill important gaps in our theoretical understanding, including our understanding of the reasoned and social-reaction path with regarding to adolescents' decisions to risk taking behavior (Gerrard et al. 2008).

As stated above, students in these lower-education pathways have learning and developmental disabilities. We recommend research into the validity of questionnaires on sexual and sexual-harassment behaviors intended for use by students in this type of education. We also recommend that further research examines the validity of innovative methods for collecting data in this population. If, rather than being presented with verbal scenarios in a digital or pencil-and-paper questionnaire, students were shown short video clips of example scenarios, they might be better able to put themselves into another person's position, or imagine themselves in a future situation.

Conclusion

As male perpetration rates are relatively high, there is a need for programs targeting the prevention of sexual harassment by male adolescents. Although it targeted these behaviors, *Boys* showed effects on neither the behaviors nor their determinants. We conclude that the program was not sufficiently varied in its teaching methods or dosing. With regard to the needs of target groups attending pre-vocational education, we recommend that the program is adapted, and that the subject of sexual harassment becomes the repeated focus of the school curriculum.

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Conflict of interest

The authors declare that they have no conflict of interest.

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GENERAL DISCUSSION

General Discussion

This dissertation deals with school-based sex and relationship education, and in particular with the prevention of adolescent sexual harassment behavior. It contributes to the existing body of evidence on the prevention of adolescent sexual harassment and the knowledge thereof, as new insights have emerged. In addition, it can offer support to professionals who develop preventive interventions, and to professionals who work with adolescents in schools, such as teachers and school staff. For the purpose of this PhD research, two existing Dutch school-based programs for the prevention of adolescent sexual harassment were evaluated: *Benzies & Batchies* and *Boys.* The aim of this PhD research was to gain insight into determinants of adolescent sexual harassment behavior; to evaluate the process of development of *Benzies & Batchies* and *Boys* by using the Intervention Mapping framework; and to gain insight into the short and longer term effects of these programs using controlled research designs and multivariate statistical techniques for data analysis. For the purpose of this research we defined adolescent sexual harassment behaviors as 'any sexual behavior against someone's will'. We incorporated both the victim's and perpetrator's perspective of the harassment behaviors, as well as rejection behaviors, which we defined as 'saying no' to the harassment behavior at hand.

This chapter presents the main results of this PhD research. Moreover, implications for practice and future development of school-based sex and relationship education programs are discussed, together with implications for future research.

Main Results of the Studies

The main results of the four studies that have been conducted are presented below, per study.

Determinants associated with the intention to reject or stop adolescent sexual harassment (study 1, chapter 2)

As we were interested in the associations between determinants of adolescent sexual harassment behavior and behavioral intentions, we analyzed three scenarios each depicting a situation drawn from a real-life example involving adolescent sexual harassment, and presented these to a mixed-gendered target group of adolescents 12-14 years. We found that the intention to reject sexual pictures or messages was associated with the determinants attitude, perceived norm, perceived behavioral control, risk perception, and the mental image of a person performing certain risk behaviors, so-called prototype image. The intention to reject sexual remarks and the intention to stop unwanted kissing were both associated with the determinants perceived behavioral control and sexual self-esteem. In addition, we found that sex was associated with behavioral intention in all three scenarios, suggesting that girls had greater intentions than boys

to reject sexually explicit pictures or messages and sexual remarks, and to stop kissing someone against his or her will. These findings were consistent with the results we found with regard to the underlying beliefs of the determinants; there appeared to be more room for change of these beliefs in boys than in girls, as boys' beliefs concerning attitude, perceived norm and perceived behavioral control had lower mean scores (implying room for improvement) and were associated with behavioral intention (implying relevancy). In addition, the results of this study showed that significantly more girls than boys reported they had been victim of sexual harassment, particularly of sexual remarks and being forced into sex. Boys on the other hand, reported significantly more perpetration behaviors in the past six months than girls, especially on having made sexual remarks about someone. Significantly more girls than boys had rejected any form of sexual harassment.

Preventing adolescent sexual harassment through school-based programs (study 2, chapter 3)

In this study, we reviewed the process of development of *Benzies & Batchies* and *Boys*, two existing Dutch school-based interventions, which were both produced in reaction to incidents involving adolescent sexual harassment. We conducted desk research into the context and content of the interventions. To this end, we checked the interventions' websites and studied the intervention materials available. Next, for collecting their opinions on the initial development processes, we held face-to-face interviews with the developers of the two interventions. These interviews took place at the offices of the intervention owners. Although both programs were developed in practice and lacked a thorough theoretical foundation, their methods and applications represented aspects of behavior-change theories. The intervention developers had completed many tasks within the six steps of the planning process, with an emphasis on the programs' production, adoption, implementation, and evaluation; but they had paid less attention to tasks with regard to the needs assessment and theoretical underpinning of their program.

Effects of the intervention Benzies & Batchies (study 3, chapter 4)

The aims of this study were to establish the effects of *Benzies & Batchies* on sexual harassment behavior (victimization and perpetration), and determinants of behavior; and to establish whether any effects found differed with regard to the adolescents' gender, educational level and ethnicity. We used a cluster-randomized controlled design to assign schools to an experimental condition (n = 14 schools; 431 students (51% female)) and a control condition (n = 11 schools; 384 students (51% female)). Students in the experimental group filled out paper-and-pencil questionnaires in the classroom at three time points: before the presentation of the

theatre play (baseline); just after the end of the program (first post-test); and six months after the end of the program (follow-up). Although we could not establish significant long-term effects of the intervention on sexual harassment behavior (victimization and perpetration), significant short-term effects and longer-term effects were found on determinants of the behavior. At first post-test, students in the experimental group, relative to students in the control group, reported they had less intention of committing sexual harassment, and they reported a higher self-efficacy with regard to successfully rejecting it. Besides, a significant short-term effect was found on perceived social norm with regard to rejecting sexual harassment behavior, which was sustained at follow-up - students in the experimental group reported a more positive social norm with regard to rejecting sexual harassment than students in the control group. In addition, a significant long-term effect was found on sexual self-esteem: students in the experimental group reported higher sexual self-esteem than students in the control group. We found that long-term effects differed with regard to adolescents' educational level on three determinants of behavior. Students with a higher educational level in the experimental group reported: (1) a more negative attitude towards committing sexual harassment, (2) a more negative social norm with regard to committing sexual harassment behavior, and (3) a more negative image of the prototype of a perpetrator of sexual harassment, than students with a higher educational level in the control group.

Effects of the intervention Boys (study 4, chapter 5)

For the study into the effects of *Boys* we used a quasi-experimental design (experimental condition n = 15 schools, 159 male students; control condition n = 14 schools, 132 male students; mean age 13.8 years). All students filled out a questionnaire before the program started (baseline), just after the program had ended (first post-test), and again six months later (follow-up). The study into the effects of *Boys* did not yield any significant long-term results on the students' perpetration or rejection of sexual harassment, nor any significant short-term or long-term results on the determinants of these behaviors. Remarkably, students in both study groups (i.e., experimental group and control group) reported more perpetration behaviors at six months follow-up; with non-native students in the experimental group reporting a smaller increase in their perpetration behaviors than non-native students in the control group. Students in both study groups also reported slightly more rejection behaviors – which was a desired outcome. Besides, we found an improvement in attitude towards gender roles: at first post-test and at six months follow-up, boys in the experimental group and in the control group reported having less traditional views on gender roles. And, relative to mean scores at baseline, we noted at first post-test that the degree of perceived behavioral control with regard to successfully not performing

the unwanted behavior in non-native students in the experimental group had stayed the same, but had decreased in non-native students in the control group.

Implications for Practice and Future Development of School-based Sex and Relationship Education Programs

As we found that 1 in 4 adolescents had reported any victimization of sexual harassment behavior, 1 in 3 had reported any rejection, and more than 1 in 10 had reported any perpetration (study 1, chapter 2), the prevention of these unwanted behaviors is important. It is preferable to prevent sexual harassment from a relatively young age, as these behaviors progress from milder acts (e.g., spreading sexual rumors) into more violent ones (e.g., forcing someone to have sex) in time (Ybarra and Thomson 2017). Moreover, unlearning unwanted behavior is more difficult in contrast to the prevention thereof. Various implications for practice and future development of school-based sex and relationship education programs follow as a result of this PhD research, as well as recommendations for further research. These implications and recommendations are discussed below one by one, with regard to theoretical foundations, the context in which school-based preventive programs are carried out, the content of these programs, and the implementation and adoption thereof.

Theoretical foundations

What has this PhD research yielded with respect to the theoretical foundations, in particular with regard to the definition of adolescent sexual harassment, theoretical models, determinants of adolescent sexual harassment and intervention development? What are our recommendations in this area?

Definition of adolescent sexual harassment behavior

Looking at the literature, we found no clear definition of what sexual harassment behavior entails, as researchers classify it in different ways. Kuyper and colleagues (2009) classified the behaviors according to the tactics a person uses to persuade someone into sexual activity or gets persuaded into such activities: there may be verbal manipulation involved (i.e., whining, gossiping, getting angry), abuse related to the situation (i.e., having sex with a drunken partner who would normally not do such thing), sexual coercion (i.e., threatening, using violence, drugging someone), and media related experiences and behaviors (i.e., making sexually explicit remarks or using the webcam). More recently, Vega-Gea and colleagues (2016) subdivided the behaviors according to two dimensions: one dimension that includes visual-verbal forms of the harassment behaviors, and one dimension that includes physical forms.

As society is rapidly changing when it comes to social media and internet use, there is a need to teach and guide young people how to deal with these changes and to indicate which sexual activities may be right or wrong, considering norms and values as well. In addition, a positive approach to the sexual health of young people could be advocated. Not all sexual activities carried out by young people have negative health consequences, but are part of their developmentally normative sexual development (Tolman and McClelland 2011). This calls for a reassessment of the definition of adolescent sexual harassment.

According to Frans (2010) acceptable and unacceptable sexual behavior in adolescents can be identified with the help of the six criteria from the Flag System (see Box 1). By following these six criteria and checking the extent to which the criteria are met, the acceptability of the sexual behavior becomes clear (Rutgers 2018). A pilot study into the use of the Flag System (De Lijster-van Kampen et al. 2017) showed positive effects on the professionals' identification of acceptable sexual behavior in adolescents. Moreover, the adolescents themselves considered the use of the Flag System important because of the basis of trust and mutual respect on which the topic of sexuality can be discussed.

Box 1. Six criteria to identify acceptable and unacceptable sexual behavior in adolescents

Mutual consent

Do both parties agree with the behavior at hand?

Voluntary engagement

Is there coercion or any form of pressure between both parties?

Equality

Are both parties equal (e.g., with regard to age, power ratio)?

Age appropriateness or developmental appropriateness

Is the behavior suitable for the age and developmental stage of the young person involved?

Appropriateness within the context or situation

Is the behavior appropriate in the context or situation in which it takes place?

Self-respect

Does the behavior cause harm to the person himself or herself?

For the purpose of our research we used a broad definition of adolescent sexual harassment behavior, namely 'any sexual behavior against someone's will'. To incorporate the criteria of the Flag System into the definition of adolescent sexual harassment, allows for respecting mutual consent, voluntariness and equality, and standards regarding context, age and self-respect, which all apply to both parties involved. At the same time, incorporating the criteria of the Flag System emphasizes the dynamic aspect of the definition. This may lead to adolescent sexual harassment behavior being defined as 'any sexual behavior of adolescents using some form of physical or non-physical coercion or pressure without respect for mutual consent or equality of the parties involved; which is not suitable for the age of the adolescent, developmental stage, or the context or situation in which the adolescent finds himself; and which is harmful to the adolescent himself'. Having a clear definition will further facilitate the operationalization of the concept of sexual harassment in future research.

Further research is recommended into the reliability and internal validity of measurement instruments for assessing adolescent sexual harassment behaviors and its determinants, especially when it concerns students that follow lower-education pathways, as these students have learning and developmental disabilities (see study 4, chapter 5).

Theoretical models

For the theoretical models used in our studies (see study 1, chapter 2; study 3, chapter 4 and study 4, chapter 5), we not only looked to determinants from the Reasoned Action Approach (Fishbein and Ajzen 2010), but also to adolescents' images of prototypes of victims and perpetrators of sexual harassment – and more specifically to prototype favorability – a principle taken from the Prototype Willingness Model (Gerrard et al. 2008). Although research has shown that adolescent sexual risk behavior could be predicted by determinants from the Theory of Planned Behavior (Li et al. 2010) and by principles of the Prototype Willingness Model (Walrave et al. 2015), other theories and insights with regard to adolescent development might apply to their sexual behavior, such as the role of hormonal factors (Pringle et al. 2017), and brain development (Wierenga et al. 2018). The physiological maturity of an adolescent (e.g., maturing early), may affect the extent to which the adolescent is susceptible to information with regard to sexual health behavior (Pringle et al. 2017). The interactions between chronological age and changes in puberty maturation are complex; changes in puberty affect brain structure, and these changes differ between the sexes (Wierenga et al. 2018). Further research into theories and insights of adolescent development, including their sexual development, will gain our understanding of their development. This newly acquired knowledge can then be used by intervention developers to align their intervention with the adolescent's developmental stage.

Determinants of adolescent sexual harassment behavior

We found that some of the determinants that we had selected for our study were associated with adolescent sexual harassment behavior, and others were not. As a result, the question arises whether we incorporated the right determinants, or other determinants should be explored as well.

As stated before, behavior is predicted by the individual's intention to perform the behavior, which is predicted, in turn, by determinants attitude towards the behavior, perceived norm and perceived behavioral control (Fishbein and Ajzen 2010). Research from Webb and Sheeran (2006) demonstrated a small-to-medium sized change in behavior following a medium-to-large sized change in intention. In response to their question as to why behavioral intention does not have a greater impact on behavior, the researchers suggested that other factors, including the social context in which the behavior is performed, and the individual's willingness to perform the behavior, may play a role.

Behavioral willingness might add to our understanding of the prediction of engaging in or refraining from adolescent sexual harassment behavior. Research has shown that behavioral willingness – a principle from the Prototype Willingness Model (Gerrard et al. 2008) – is associated with behavioral intention with regard to adolescent risk taking behaviors (Walrave et al. 2015). Given methodological constraints, we were only able to include determinants that related to behavioral intention from the Reasoned Action Approach (Fishbein and Ajzen 2010). Consequently, we did not include behavioral willingness in our research design (e.g., the adolescent's willingness to engage in unwanted sexual behaviors such as forwarding a sexual message or picture, if the opportunity arises). Items like 'How willing would you be to: 1) forward a sexual message or picture; 2) reject a sexual message or picture?' following the introductory sentence 'Assume your friend sends you a sexual picture or message' could be included in the measurement instrument.

In addition, from the Prototype Willingness Model (Gerrard et al. 2008), we only included items of prototype images of a male and female victim of adolescent sexual harassment, and of a male and female perpetrator based on prototype favorability (i.e., negative or positive evaluations of the prototype presented). We did not include prototype perceptions with regard to prototype similarity (i.e., one's perception of the prototype to be similar or dissimilar to the self). This can add to our model as well, as previous research has shown that prototype similarity predicts behavioral intention (Van Lettow et al. 2014).

To select beliefs that may be relevant to future preventive interventions on adolescent sexual harassment, we used the Confidence Interval-Based Estimation of Relevance (CIBER) approach (Crutzen et al. 2017). CIBER is a method that makes it possible to process a large amount of information on means, confidence intervals and correlation coefficients of questionnaire items

regarding beliefs on behavior. The results of these analyses revealed that the beliefs about sexual harassment differed between the sexes. While we found room for improvement on various beliefs for the boys, this was not the case with the girls. As it was not clear whether these results were associated with the higher mean scores of girls on intention, we recommend further research into these differences between the sexes to gain our understanding of the gender aspects of determinants of behavior, and beliefs (see study 1, chapter 2).

Intervention development

For the purpose of evaluating the degree of planning of the two school-based preventive interventions *Benzies & Batchies* and *Boys*, we used the framework of Intervention Mapping (see study 2, chapter 3). In comparison to other approaches and tools that exist with regard to the design process of an intervention, such as the Quality Enhancement Research Initiative (QUERI), and the Theoretical Domains Framework Implementation (TDFI) approach (Colquhoun et al. 2017), the Intervention Mapping framework offers an overall approach, which includes steps for planning, developing, implementing, evaluating, and adapting health promotion programs. Prevention programs that used the Intervention Mapping framework have been found to significantly increase the uptake of such interventions (Garba and Gadanya 2017). The first step – at the same time one of the basic principles of intervention development – is conducting a needs assessment at the start of the development process, in order to identify the problems on which the intervention will focus, as well as to identify the needs of the target group. Thus, intervention developers will have to establish a planning group that includes various stakeholders, and work with it throughout the development process. If the target group has not been involved in the planning group and their needs have not become clear during the needs assessment, the effectiveness of the intervention may decrease (Schaafsma et al. 2017). In addition, participation of students in the design, planning, implementation and/or evaluation of school-based health promotion interventions has personal effects on students, such as an increase in satisfaction with the program and increased ownership (Griebler et al. 2017). Although the developers of *Benzies & Batchies* and *Boys* had involved adolescents from the intended target group in the design of their program, they had not involved parents. Following from the results of this PhD research, we recommend future researchers to include adolescents, but also their parents, in the planning group and also to involve them in the development of research designs and methods. As stated above, society is rapidly changing when it comes to social media and internet use. It is essential to keep in touch with the target group to keep track of these developments, to understand them and to involve them when developing interventions.

Context

What have we learned about the context in which these programs are implemented, in particular with regard to setting, students' appreciation of the programs, and their educational level? Are intervention developers on the right track with their current interventions? What are our recommendations in this area?

Setting

The majority of children and young people in the world go to school. That is why the school seems to be the perfect place to teach them about sexual health and the prevention of sexual harassment behaviors.

As a result from their research, Shackleton and colleagues (2016) suggest that school interventions, including interventions that comprise school policy changes, and involvement of parents, are more effective for the promotion of adolescent sexual health than sexual-health clinics, or social counselors who work in schools. When schools as a whole are committed to prevent bullying, and are intolerant of sexual harassment, there is less adolescent sexual harassment perpetration (Rinehart and Espelage 2015).

We could not establish effects of *Benzies & Batchies* and *Boys* on adolescent sexual harassment behaviors. However, we did find significant short-term effects and longer-term effects of *Benzies & Batchies* on determinants of behavior. We recommend schools to set up a protocol in which they define sexual harassment, and the rules and consequences that apply for their students, and all professionals that work in school. Besides, we recommend that schools extend their health education on the prevention of sexual harassment behavior in subsequent years. In this way, when students grow older and become more sexually experienced they can apply the cognitions they gained in earlier lessons, in previous classes.

Students' appreciation

For both *Benzies & Batchies* and *Boys*, the students' appreciation of the program had been explored with questions about, among other things, the timing of execution of the lessons (i.e., appropriateness for their age). In addition, teachers' appreciation of both programs had been explored with questions about, among other things, the amount of preparation time of the course components and the possibility to fit in the components within the usual curriculum. Besides, students and teachers both assessed the programs with a score, ranging from 1 (low score) to 10 (high score).

Students appreciated the theatre play of *Benzies & Batchies* with an average score of 7.8, and the skills lessons with an average score of 7.6; teachers appreciated the intervention as a whole with an average score of 8.3. A vast majority of students indicated that the program was

given to them at the right time considering their development; the results for the teachers were mixed with some teachers being positive about the preparation time and possibility of fitting in the components within the curriculum, and some being more negative (Janssens and De Lijster 2013). Students appreciated the *Boys* program with an average score of 7.8; teachers appreciated the intervention with an average score of 8. A large majority of the students that had followed the *Boys* program indicated the program was appropriate for their age, but 1 in 10 thought of himself as being too young (Van Oosten and De Lijster 2014).

Students' educational level

Recent research showed differences in prevalence rates of sexual behaviors, and attitudes towards these behaviors in 12-14 year-old students from different educational levels (De Graaf et al. 2017). It showed that twice as many boys with a lower level of education reported having experience with sexual intercourse than boys with a higher level of education. In addition, sexual harassment behaviors, such as being forced into sexual acts, seemed to occur twice as much among girls with a lower level of education than among girls with a higher level of education.

With regard to background characteristics, we found that students in the studies 3 (chapter 4) and 4 (chapter 5) had the same average age. Their educational level however, differed, with twice as much students in study 4 attending practical and vocational oriented learning pathways (pre-vocational education) than students in study 3. Besides, the percentage of students who had experience with sexual intercourse was about twice as large in study 4 (19%) compared to study 3 (12%). In our fourth study (chapter 5) we found much higher perpetration rates at baseline for students (male only; 48%) than we found for students (male and female; 29%) in the third study (chapter 4). Students in the fourth study had a more positive attitude towards sexual harassment perpetration, and had more traditional views on gender roles, than students in the third study, which was shown by their baseline scores. Our research results showed that the *Benzies & Batchies* program seemed to have more effect on students who followed theoretical education than on students who followed pre-vocational education (study 3); no effect was found of the *Boys* program with the students (study 4).

As students in lower-education pathways have learning and developmental disabilities, it is important that our understanding of the differences in problems they experience, whether they are behavioral, educative or development-oriented, increases. We therefor recommend further research into the suitability of preventive programs to the needs of those students whose educational level is lower. In addition, providers of such programs are advised to include varying teaching methods that correspond to the educational level and the learning habits of the adolescent students (Kirby et al. 2007).

Content

What knowledge has this dissertation yielded with regard to the content of the programs? Are the programs forerunners or obsolete? What does the current generation of programs look like? What are our recommendations in this area?

Different types of school-based interventions on sexual health and relationship education exist, including programs that focus on abstinence, or other programs that advocate a comprehensive approach, (i.e., combining attention to preventing, stopping or reducing sexual behavior, and emphasizing safe sexual behavior). Abstinence only interventions have an effect on knowledge, but this increase in knowledge does not affect subsequent actual behavior change; and although comprehensive interventions also lead to improvements in knowledge, attitudes and skills, findings on positive changes in subesquent behavior are not consistent (Denford et al. 2017). We know from literature that the content and underlying message of sex and relationship education interventions are very important to a young person. Young people not only want to learn about the physical, and technical facts of sex, they also want to learn how to deal with the pressures they perceive from the media, family, and friends (Pound et al. 2016). In addition, sexuality education that pays attention to one's internal experiences of sexuality, such as thoughts and desires about sex, and romantic aspects of sexuality, may benefit the adolescent's healthy sexual development (Dalenberg et al. 2018).

Both interventions *Benzies & Batchies* and *Boys* were developed more than 10 years ago at a time when much attention had been paid to the prevention of adolescent sexual harassment behavior in the Netherlands. They were among the first school-based programs aiming at sexual harassment, were examples of good practice, and used an innovative approach in educating adolescents of lower educational level in the Netherlands on sex and relationship skills. Besides, both programs deal with perceived social pressure from peers and media, and also discuss the adolescent's wishes and desires with regard to sex and relationships. Overall, both programs are still up to date, and are being used at this moment. The intervention owners regularly carry out internal evaluations. However, following up on our results with regard to the differences between the sexes, we recommend future intervention developers to pay attention to these differences when working with mixed-gender groups, and to ensure that each sex gains a greater insight into the beliefs of the other (Pringle et al. 2017). In addition, we advise future intervention developers to incorporate the underlying ideas and criteria of the Flag System (Frans 2010) in their program, not only to identify acceptable and unacceptable sexual behaviors, but also as a means of discussing sexual behavior with adolescents (Rutgers 2018). Finally, when intervention developers combine their practical experience with evidence-based theories in developing their program, this will increase it's effectiveness (Bartholomew Eldredge et al. 2016).

Implementation and adoption

Besides looking at context and content, it is important to also take into account the implementation, adoption and maintenance of an intervention (Bartholomew Eldredge et al. 2016). Whether or not an effect has been found of an intervention can be related to the implementation (Fleuren et al. 2004), and on the adoption thereof (Dearing 2009). What have we learned about the implementation and adoption of the two programs *Benzies & Batchies* and *Boys*? What are our recommendations in this area?

We found that both intervention developers had paid attention, in any way, to the implementation, adoption and maintenance of their program (study 2, chapter 3). However, it was not clear whether the developers had used a theoretical framework to identify factors that could influence the implementation – and consequently the effectiveness – of their intervention, such as the Consolidated Framework for Implementation Research (CFIR; Damschroder et al. 2009). The CFIR has already been used across a wide range of studies (Kirk et al. 2016), and distinguishes five domains, each comprising specific constructs: 1) characteristics of the intervention (e.g., adaptability, complexity and costs of the intervention); 2) outer setting (e.g., external policies and incentives); 3) inner setting (e.g., implementation climate and culture of the organization); 4) characteristics of individuals (e.g., knowledge and beliefs about the intervention); 5) process (e.g., engaging individuals in the implementation and use of the intervention).

With the results of our research in mind, we recommend that future intervention developers develop an implementation plan for adopting, implementing and maintaining their program. In addition, we advise them to use a theoretical framework for implementation, such as the CFIR. This will support them in thinking about factors that could influence the implementation of their intervention in advance, including the training of instructors, ethnicity of the students and cultural sensitivity of the intervention (Poobalan et al. 2009).

General Conclusion

This dissertation dealt with school-based sex and relationship education, and in particular with the prevention of adolescent sexual harassment behavior. As a consequence, it also addressed the positive sexual health development of adolescents. We have gathered new knowledge with regard to determinants of adolescent sexual harassment behavior, and the development of interventions that aim to prevent adolescent sexual harassment through school-based programs. Besides, we have demonstrated that such programs are effective in changing determinants of behavior. The research in this PhD dissertation has contributed to the existing knowledge on the prevention of adolescent sexual harassment. In addition, it offers support to professionals who develop preventive interventions, and to professionals who work with adolescents in schools, such as teachers and school staff.

The overall results of this dissertation show that school-based programs that aim to prevent adolescent sexual harassment behaviors are potentially effective. We found effects on determinants of adolescent sexual harassment behaviors, but not on sexual harassment behavior itself. Perceived behavioral control and sex were significantly associated with the intention to reject and to stop sexual harassment. Intervention developers need to focus on combining their practice-based experience with evidence-based theories, as this will increase the success and effectiveness of their interventions. As our society is changing rapidly, especially when it comes to social media and internet use, intervention developers need to keep in touch with their target group and involve them in the development process of their intervention. Besides, intervention developers need to pay attention to the various beliefs and cognitions between the two sexes. When it comes to further research, we recommend to study theories and insights of adolescent development, which will gain our understanding of their sexual development as well. Moreover, we advise further research into measurement instruments that will fit the target groups addressed in the research of this dissertation.

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REFERENCES, SUMMARY, SAMENVATTING, VALORISATIE ADDENDUM, HET IS KLAAR! & CURRICULUM VITAE

References

AAUW (American Association of University Women Educational Foundation) (2001). *Hostile hallways: Sexual harassment and bullying in schools.* Harris/Scholastic Research, Washington, DC.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50,* 179-211.

Albarracín, D., Johnson, B.T., Fishbein, M., & Muellerleile, P.A. (2001). Theories of Reasoned Action and Planned Behavior as Models of Condom Use: A Meta-Analysis. *Psychological Bulletin, 127,* 142-161.

American Association of University Women Educational Foundation (2001). *Hostile hallways: Sexual harassment and bullying in schools*. Harris/Scholastic Research, Washington, DC

Arnab, S., Brown, K., Clarke, S., Dunwell, I., Lim, T., Suttie, N., Louchart, S., Hendrix, M., & de Freitas,S. (2013). The development approach of a pedagogically-driven serious game to support relationship and sex education (RSE) within a classroom setting. *Computers & Education, 69*, 15-30.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice-Hall.

Bartholomew Eldredge, L.K., Markham, C.M., Ruiter, R.A.C., Fernández, M.E., Kok, G., & Parcel, G.S. (2016). *Planning health promotion programs: an intervention mapping approach.* 4th ed. San Fransisco, CA: Jossey-Bass.

Bartholomew Eldredge, L.K., Parcel, G.S., Kok, G., Gottlieb, N.H., & Fernández, M.E. (2011). *Planning health promotion programs: an intervention mapping approach, 3rd ed.* San Francisco, CA: Jossey-Bass.

Black, B., Weisz, A., Coats, S., & Patterson, D. (2000). Evaluating a psychoeducational sexual assault prevention program incorporating theatrical presentation, peer education and social work. *Research on Social Work Practice, 10,* 589-606.

Bowling, A. (2005). Mode of questionnaire administration can have serious effects on data quality. *Journal of Public Health, 27(3)*, 281-291.

Breukelen, G.J.P. van (2006). ANCOVA versus change from baseline had more power in randomized studies and more bias in nonrandomized studies. *Journal of Clinical Epidemiology, 59,* 920-925.

Bruijn, P. de, Burrie, I., & Wel, F. van (2006). A risky boundary: unwanted sexual behaviour among youth. *Journal of Sexual Aggression, 12(2)*, 81-96.

Buhi, E.R., & Goodson, P. (2007). Predictors of adolescent sexual behavior and intention: a theory-guided systematic review. *Journal of Adolescent Health, 40(1)*, 4–21.

Byers, E.S., O'Sullivan, L.F., & Brotto, L.A. (2016). Time out from sex or romance: sexually experienced adolescents' decisions to purposefully avoid sexual activity or romantic relationships. *Journal of Youth and Adolescence, 45(5),* 831-845.

Casey, E.A., & Lindhorst, T.P. (2009). Toward a multi-level, ecological approach to the primary prevention of sexual assault. Prevention in peer and community contexts. *Trauma, Violence & Abuse, 10(2)*, 91-114.

Chiodo, D., Crooks, C.V., Wolfe, D.A., McIsaac, C., Hughes, R., & Jaffe, P.G. (2012). Longitudinal prediction and concurrent functioning of adolescent girls demonstrating various profiles of dating violence and victimization. *Prevention Science, 13(4),* 350-359.

Chiodo, D., Wolfe, D.A., Crooks, C., Hughes, R., & Jaffe, P. (2009). Impact of sexual harassment victimization by peers on subsequent adolescent victimization and adjustment: a longitudinal study. *Journal of Adolescent Health, 45,* 246-252.

Clear, E.R., Coker, A.L., Cook-Craig, P.G., Bush, H.M., Garcia, L.S., Williams, C.M., Lewis, A.M., & Fisher, B.S. (2014). Sexual harassment victimization and perpetration among high school students. *Violence against Women, 20*(10), 1203-1219.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155-159.

Connor, M., & Norman, P. (2005). *Predicting health behavior.* Berkshire: Open University Press.

Colquhoun, H.L., Squires, J.E., Kolehmainen, N., Fraser, C., & Grimshaw, J.M. (2017). Methods for designing interventions to change healthcare professionals' behaviour: a systematic review. *Implementation Science, 12*, 30.

Cooper, K., Quayle, E., Jonsson, L., & Svedin, C.G. (2016). Adolescents and self-taken sexual images: a review of the literature. *Computers in Human Behavior, 55(part B)*, 706-716.

Crutzen, R., Peters, G.Y., & Noijen, J. (2017). Using Confidence Interval-Based Estimation of Relevance to select social-cognitive determinants for behavior change interventions. *Front. Public Health, https:// doi:10.3389/fpubh.2017.00165.*

Dalenberg, W.G., Timmerman, M.C., & Van Geert, P.L.C. (2018). Dutch adolescents' everyday expressions of sexual behavior trajectories over a 2-year period: a mixed-methods study. *Archives of Sexual Behavior, 47,* 1811–1823.

Dalum, P., Schaalma, H., & Kok. G. (2012). The development of an adolescent smoking cessation intervention- an Intervention Mapping approach to planning. *Health Education Research, 27,* 172-181.

Dalum, P., Paludan-Müller, G., Engholm, G., & Kok, G. (2012). A cluster randomised controlled trial of an adolescent smoking cessation intervention: short and long-term effects. *Scandinavian Journal of Public Health, 40,* 167–176.

Damschroder, L.J., Aron, D.C., Keith, R.E., Kirsh, S.R., Alexander, J.A., & Lowery, J.C. (2009). Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implementation Science,* 4, 50-65.

Dardis, C.H., Dixon, K.J., Edwards, K.M., & Turchik, J.A. (2014). An examination of the factors related to dating violence perpetration among young men and women and associated theoretical explanations: a review of the literature. *Trauma, Violence & Abuse,* 1-17.

Dearing, J.W. (2009). Applying diffusion of innovation theory to intervention development. *Res Soc Work Pract, 19(5)*, 503-518.

De Bruijn, P., Burrie, I., & van Wel, F. (2006). A risky boundary: unwanted sexual behaviour among youth. *Journal of Sexual Aggression, 12*(2), 81-96.

De Graaf, H., Egten, C. van, Hoog, S. van & Berlo, W. van (2009). *Seksualisering: aandacht voor etniciteit [Sexualization: attention for etnicity].* Utrecht: Rutgers Nisso Groep/E-Quality.

De Graaf, H., Kruijer, H., Acker, J. van, & Meijer, S. (2012). *Seks onder je 25e. Seksuele Gezondheid van Jongeren in Nederland anno 2012 [Sex under the age of 25. Sexual Health of Dutch Adolescents in the year 2012].* Delft: Eburon.

De Graaf, H., Meijer, S., Poelman, J. & Vanwesenbeeck, I. (2005). *Seks onder je 25e. Seksuele gezondheid van jongeren in Nederland anno 2005 [Sex under the age of 25. Sexual health of Dutch adolescents in the year 2005]* . Delft: Eburon

De Graaf, H., Van den Borne, M., Nikkelen, S., Twisk, D., & Meijer, S. (2017). *Seks onder je 25e. Seksuele gezondheid van jongeren in Nederland anno 2017. [Sex under the age of 25. Sexual health of young people in the Netherlands 2017].* Rutgers/ Soa Aids Nederland, Uitgeverij Eburon.

De Graaf, H., Vanwesenbeeck, I., & Meijer, S. (2014). Educational differences in adolescents' sexual health: a pervasive phenomenon in a national Dutch sample. *Journal of Sex Research, 0*(0),1-11.

De Graaf, H., Vanwesenbeeck, I., Meijer, S., Woertman, L., & Meeus, W. (2007). Sexual trajectories during adolescence: relation to demographic characteristics and sexual risk. *Archives of Sexual Behavior,* https://doi: 10.1007/s10508-007-9281-1.

De Koker, P., Mathews, C., Zuch, M., Bastien, S., & Mason-Jones, A.J. (2014). A Systematic Review of Interventions for Preventing Adolescent Intimate Partner Violence. *Journal of Adolescent Health, 54,* 3-13.

De La Rue, L., Polanin, J.R., Espelage, D.L., & Pigott, T.D. (2017). A meta-analysis of school-based interventions aimed to prevent or reduce violence in teen dating relationships. *Review of Educational Research, 87*(1), 7-34.

De Lijster, G.P.A., Felten, H., Kok, G., & Kocken, P.L. (2016). Effects of an interactive school-based program to prevent adolescent sexual harassment. A cluster randomized controlled evaluation study, *Journal of Youth and Adolescence, 45(5),* 874-886.

De Lijster, G.P.A., Vink, R., Van Oosten, N., Kok, G., & Kocken, P.L. (to be submitted). Effects of a school-based program for preventing adolescent sexual harassment in male students: A quasi-experimental controlled evaluation study.

De Lijster-van Kampen, G.P.A., Vink, R.M., Berlo, W. van, Kuyper, A., Boer, A.H., & Höing, M.A. (2017). *Het Vlaggensysteem RJ. Rapportage implementatie, outcome- en tevredenheidsonderzoek. [The Flag System RJ. Report on implementation, outcome and satisfaction research.]* Leiden/ Utrecht/'s-Hertogenbosch: TNO, Rutgers kenniscentrum Seksualiteit, Avans Hogeschool Expertisecentrum Veiligheid.

Denford, S., Abraham, C., Campbell, R., & Busse, H. (2017). Systematic review and meta-analyses. A comprehensive review of reviews of school-based interventions to improve sexual-health. *Health Psychology Review, 11(1),* 33-52.

Drouin, M., Vogel, K.N., Surbey, A., & Stills, J.R. (2013). Let's talk about sexting, baby: Computer-mediated sexual behaviors among young adults. *Computers in Human Behavior, 29(5)*, A25–A30.

Evans, R.I., Getz, J.G., & Raines, B.S. (1992). *Applying social inoculation concepts to prevention of HIV/AIDS in adolescents: Just say no is obviously not enough.* Paper presented at the meeting of the Society of Behavioral Medicine, New York.

Exner-Cortens, D., Eckenrode, J., & Rothman, E. (2013). Longitudinal associations between teen dating violence victimization and adverse health outcomes. *Pediatrics, 131(1)*, 71–78.

Fellmeth, G.L.T., Heffernan, C., Nurse, J., Habibula, S., & Sethi, D. (2013). Educational and skills-based interventions for preventing relationship and dating violence in adolescents and young adults. *Cochrane Database of Systematic Reviews*, *6,* Art. No.: CD004534. DOI: 10.4073/ csr.2013.14.

Felten, H., & Janssens, K. (2014). *Handboek 'Benzies & Batchies' en 'Ik hou van mij'. Theaterproject, peer education en weerbaarheidstraining [Handbook 'Benzies & Batchies' and 'I love me'. Theatre, peer-education and social skills and resilience training].* Utrecht: MOVISIE.

Fishbein, M., & Ajzen, I. (2010). *Predicting and changing behavior: the reasoned action approach.* New York, NY: Psychology Press.

Fleuren M., Wiefferink, K., & Paulussen, T. (2004). Determinants of innovation within health care organizations. *International Journal for Quality in Health Care, 16(2)*, 107–123.

Foshee, V.A., Bauman, K.E., Arriaga, X.B., Helms, R.W., Koch, G.G., & Linder, G.F. (1998). An evaluation of Safe Dates, an adolescent dating violence prevention program. *American Journal of Public Health, 88(1)*, 45-50.

Foshee, V.A., Bauman, K.E., Ennett, S.T., Linder, G.F., Benefield, T., & Suchindran, C. (2004). Assessing the long-term effects of the Safe Dates program and a booster in preventing and reducing adolescent dating violence victimization and perpetration. *American Journal of Public Health, 94(4)*, 619-624.

Foshee, V.A., Bauman, K.E., Greene, W.F., Koch, G.G., Linder, G.F., & MacDougall, J.E. (2000). The Safe Dates program: 1-year follow-up results. *American Journal of Public Health, 90,* 1619-1622.

Frans, E. (2010). *Seksueel gedrag van kinderen bespreekbaar stellen. Het Vlaggensysteem als pedagogische interventie. [To discuss sexual behavior of children. The Flag system as pedagogical intervention.]* Antwerpen: Sensoa.

Franssens, D., Hospers, H.J., & Kok, G. (2009). Social-cognitive determinants of condom use in a cohort of young gay and bisexual men. *AIDS Care, 21(11)*, 1471-1479.

Garba, R.M., & Gadanya, M.A. (2017). The role of Intervention Mapping in designing disease prevention interventions: a systematic review of the literature. *PLoS ONE 12(3)*, e0174438.

Gardner, M., & Steinberg, L. (2005). Peer Influence on risk taking, risk preference, and risky decision making in adolescence and adulthood: an experimental study. *Developmental Psychology, 41(4)*, 625–635.

Gerrard, M., Gibbons, F.X., Houlihan, A.E., Stock, M.L., & Pomery, E.A. (2008). A dual-process approach to health risk decision making: the prototype willingness model. *Developmental Review, 28(1)*, 29-61.

Gibbons, F.X., Gerrard, M., Vande Lune, L.S., Wills, T.A., Brody, G. & Conger, R.D. (2004). Context and cognitions: environmental risk, social influence, and adolescent substance use. *Personality and Social Psychology Bulletin, 30(8),* 1048-1061.

Gijs, L., Gianotten, W., Vanwesenbeeck, I., & Weijenborg, P. (2009). *Seksuologie [Sexuology].* Houten: Bohn Stafleu van Loghum.

Godin, G., Gagnon, H., Alary, M., Levy, J.L., & Otis, J. (2007). The degree of planning: an indicator of the potential success of health education programs. *Promotion & Education, 14,* 138-142.

Goldstein, S.E., Malanchuk, O., Davis-Kean, P.E., & Eccles, J.S. (2007). Risk factors of sexual harassment by peers: a longitudinal investigation of African American and European American adolescents. *Journal of Research on Adolescents, 17*, 285-300.

Government of the Netherlands, Ministry of Education, Culture and Science. (n.d.). *Secondary Education.* Retrieved from https://www.government.nl/topics/secondary-education.

Griebler, U., Rojatz, D., Simovska, V., & Forster, R. (2017). Effects of student participation in school health promotion: a systematic review. *Health Promotion International, 32*, 195–206.

Grossman, J.M., Frye, A., Charmaraman, L., & Erkut, S. (2013). Family homework and school-based sex education: delaying early adolescents' sexual behavior. *Journal of School Health, 83*, 810-817.

Grossman, J.M., Tracy, A.J., Charmaraman, L., Ceder, I., & Erkut, S. (2014). Protective effects of middle school comprehensive sex education with family involvement. *Journal of School Health, 84*, 739-747.

Guse, K., Levine, D., Martins, S., Lira, A., Gaarde, J., Westmorland, W., & Gilliam, M. (2012). Interventions using new digital media to improve adolescent sexual health: a systematic review. *Journal of Adolescent Health, 51(6)*, 535–543.

Hartgers, M. (2012). Onderwijs [Education]. In R. van der Vliet, J. Ooijevaar, R. van der Bie (Ed.), *Jaarrapport Integratie 2012 [Year report Integration 2012] (pp. 69-92).* Den Haag/Heerlen: Centraal Bureau voor de Statistiek.

Hecht, M.L., Corman, S.R., & Miller-Rassulo, M. (1993). An evaluation of the drug resistance project: a comparison of film versus live performance media. *Health Communication, 5*, 75-88.

Hensel, D.J., Fortenberry, J.D., O'Sullivan, L.F., & Orr, D.P. (2011). The developmental association of sexual self-concept with sexual behavior among adolescent women. *J Adolesc., 34(4)*, 675–684.

Hill, C., & Kearl, H. (2011). *Crossing the line: sexual harassment at school.* Washington, D.C.: American Association of University Women.

Hofstetter, H., Peters, L.W.H., Meijer, S, Keulen, H.M. van, Schutte, L., & Empelen, P. van (2014). Evaluation of the effectiveness and implementation of the sexual health program Long Live Love iv. *European Health Psychologist, 16*, 489.

Houck, C.D., Barker, D., Rizzo, C., Hancock, E., Norton, A., & Brown, L.K. (2013). Sexting and Sexual Behavior in At-Risk Adolescents. *Pediatrics, https://doi:10.1542/peds.2013-1157.*

Hukkelberg, S.S., & Dykstra, J.L. (2009). Using the Prototype/Willingness model to predict smoking
behaviour among Norwegian adolescents. *Addictive Behaviors, 34*(3), 270-276.

Hynynen, S-T., Van Stralen, M.M., Sniehotta, F.F., Araújo-Soares, V., Hardeman, W., Chinapaw, M.J.M., Vasankari, T., & Hankonen, N. (2016). A systematic review of school-based interventions targeting physical activity and sedentary behaviour among older adolescents. *International Review of Sport and Exercise Psychology, 9*, 22-44.

Janssens, K., & de Lijster-van Kampen, G.P.A. (2013*). Procesevaluatie Benzies & Batchies / Ik hou van mij [Procesevaluation Benzies & Batchies / I love me]*. Utrecht: MOVISIE; Project number P2179.

Jewell, J.A., & Brown, C.S. (2013). Sexting, catcalls, and butt slaps: how gender stereotypes and perceived group norms predict sexualized behavior. *Sex Roles, 69(11-12),* 594-604.

Kirby, D.B., Laris, B.A., & Rolleri, L.A. (2007). Sex and HIV education programs: their impact on sexual behaviors of young people throughout the world. *Journal of Adolescent Health, 40,* 206-217.

Kirk, M.A., Kelley, C., Yankey, N., Birken, S.A., Abadie, B., & Damschroder, L. (2016). A systematic review of the use of the Consolidated Framework for Implementation Research. *Implementation Science, 11*, 72.

Klettke, B., Hallford, D.J., & Mellor, D.J. (2014). Sexting prevalence and correlates: a systematic literature review. *Clinical Psychology Review, 34(1),* 44-53.

Kocken, P., Weber, S., Bekkema, N., Van Dorst, A., Van Kesteren, N., & Wiefferink, K. (2007). *Een inventarisatie van seksuele gezondheidsbevorderingsinterventies voor de jeugd van 10 tot 21 jaar [An inventory of sexual health promotion interventions for youth from 10 to 21 years]*. Leiden: TNO, KvL/P&Z 2007.112.

Krahé, B., Tomaszewska, P., Kuyper, L., & Vanwesenbeeck, I. (2014). Prevalence of sexual aggression among young people in Europe: a review of the evidence from 27 EU countries. *Aggression and Violent Behavior, 19*(5)*,* 545–558.

Kuyper, L., de Wit, J., Adam, P., Woertman, L., & van Berlo, W. (2009). *Laat je nu horen! Een onderzoek naar grensoverschrijdende seksuele ervaringen en gedragingen onder jongeren [Speak up now! Unwanted sexual experiences and behaviors among young people]*. Utrecht: Universiteit Utrecht.

Langhinrichsen-Rohling, J., McCullars, A., & Misra, T.A. (2012). Motivations for men and women's intimate partner violence perpetration: a comprehensive review. *Partner Abuse, 3(4),* 429-468.

Leen, E., Sorbring, E., Mawer, M., Holdsworth, E., Helsing, B., & Bowen, E. (2013).Prevalence, dynamic risk factors and the efficacy of primary interventions for adolescent dating violence: An international review. *Aggression and violent behavior, 18(1),* 159-174.

Li, M.Y., Frieze, I., & Tang, C.S (2010). Understanding adolescent peer sexual harassment and abuse: using the theory of planned behavior. *Sexual Abuse, 22(2),* 157-171.

Livingstone, S., Haddon, L., Görzig, A., & Ólafsson, K. (2011). *Risks and safety on the internet: the perspective of European children: full findings and policy implications from the EU Kids Online survey of 9-16 year olds and their parents in 25 countries.* EU Kids Online,
Deliverable D4. EU Kids Online Network, London, UK.

Lundgren, R., & Amin, A. (2015). Addressing intimate partner violence and sexual violence among adolescents: emerging evidence of effectiveness. *Journal of Adolescent Health, 56*, S42-S50.

Madigan, S., Ly, A., Rash, C., Ouytsel, J. van, & Temple, J.R. (2018). Prevalence of multiple forms of sexting behavior among youth: a systematic review and meta-analysis. *JAMA Pediatrics, https://doi:10.1001/jamapediatrics.2017.5314.*

Maes, M., Adams, J.M., Bousquet, S., & Moussoux, A. (2004). *Vocational education and training in the Netherlands. Short description.* Luxembourg: Office for Official Publications of the European Communities.

Marlatt, G.A., & Donovan, D.M. (Eds.) (2005). *Relapse prevention; maintenance strategies in the treatment of addictive behaviors* (2nd ed.) New York: Guilford.

McAlister, A.L, Perry, C.L, & Parcel, G.S. (2008). How individuals, environments and health behaviors interact: Social Cognitive Theory. In K. Glanz, B.K. Rimer & K. Viswanath (Eds). *Health behavior and health education* (4th ed., pp 169-188). San Fransisco: Jossey-Bass.

McGuire, W.J. (2001). Input and output variables currently promising for constructing persuasive communications. In: R.E. Rice & C.K. Atkins (Eds.), *Public communication campaigns* (3rd ed., pp. 22-48). Thousand Oaks, CA: Sage.

McMaster, L.E., Connolly, J., Pepler, D., & Craig, W.M. (2002). Peer to peer sexual harassment in early adolescence: a developmental perspective. *Development and Psychopathology, 14,* 91-105.

McNaughton Reyes, H.L., Foshee, V.A., Holditch Niolon, P., Reidy, D.E., & Hall, J.E. (2016). Gender role attitudes and male adolescent dating violence perpetration: normative beliefs as moderators. *Journal of Youth and Adolescence, 45*(2), 350-360.

Mellanby, A.R., Newcombe, R.G., Rees, J., & Tripp, J.H. (2001). A comparative study of peer-led and adult-led school sex education. *Health Education Research, 16*, 481-492.

Mevissen, F.E.F., Van Empelen, P., Watzeels, A., Van Duin, G., Meijer, S., van Lieshout, S. & Kok, G. (2018). Development of Long Live Love+, a school-based online sexual health programme for young adults. An intervention mapping approach, *Sex Education*, 18:1, 47-73, DOI: 10.1080/14681811.2017.1389717.

Michie, S., Richardson, M., Johnston, M., Abraham, C., Francis, J., Hardeman, W., Eccles, M.P., Cane, J., & Wood, C.E. (2013). The Behavior Change Technique Taxonomy (v1) of 93 hierarchically clustered techniques: building an international consensus for the reporting of behavior change interventions. *Ann. Behavioral Medicine, 46(1),* 81-95.

Miller, E., Tancredi, D.J., McCauley, H.L., Decker, M.R., Virata, M.C.D., Anderson, H.A., Stetkevich, N., Brown, E.W., Moideen, F., & Silverman, J.G. (2012). "Coaching boys into men": a cluster-randomized controlled trial of a dating violence prevention program. *Journal of Adolescent Health, 51*, 431-438.

Miller, S., Williams, J., Cutbush, S., Gibbs, D., Clinton-Sherrod, M., & Jones, S. (2013). Dating violence, bullying, and sexual harassment: longitudinal profiles and transitions over time. *Journal of Youth and Adolescence, 42(4),* 607-618.

Moinester, M., & Gottfried, R. (2014). Sample size estimation for correlations with pre-specified confidence interval. *The Quantitative Methods for Psychology, 10(2)*, 124-130.

Morris, J.L., & Rushwan, H. (2015). Adolescent sexual and reproductive health: The global challenges. *International Journal of Gynecology and Obstetrics, 131,* S40–S42.

Nation, M., Crusto, C., Wandersman, A., Kumpfer, K.L., Seybolt, D., Morrissey-Kane, E., & Davino, K. (2003). What works in prevention. Principles of effective prevention programs. *American Psychologist, 58*(6/7), 449-456.

Nikken, P. (2007). *Jongeren, media en seksualiteit [Adolescents, media and sexuality].* Utrecht: Nederlands Jeugd Instituut.

Payton, J., Weissberg, R.P., Durlak, J.A., Dymnicki, A.B., Taylor, R.D., Schellinger, K.B., & Pachan, M. (2008). *The positive impact of social and emotional learning for kindergarten to eighth-grade students: findings from three scientific reviews.* Chicago, IL: Collaborative for Academic, Social, and Emotional Learning.

Perry, C.L., Zauner, M., Oakes, J.M., Taylor, G., & Bishop, D.B. (2002). Evaluation of a theater production about eating behavior of children. *Journal of School Health, 72*, 256-261.

Peter, C.R., Tasker, T.B., & Horn, S.S. (2015). Parents' attitudes toward comprehensive and inclusive sexuality education. Beliefs about sexual health topics. *Health Education, 115*, 71-92.

Peters, G.Y. (2014). A practical guide to effective behavior change: How to identify what to change in the first place. *European Health Psychologist, 16(5),* 142-155.

Peters, G.Y. (2017). Userfriendlyscience: Quantitative analysis made accessible.

Peters, G.Y., & Crutzen, R. (2017). Knowing exactly how effective an intervention, treatment, or manipulation is and ensuring that a study replicates: accuracy in parameter estimation as a partial solution to the replication crisis. *https://doi.org/10.31234/osf.io/cjsk2.*

Peters, L.W.H., Dam, G.T.M. ten, Kocken, P.L., Buijs, G.J., Dusseldorp, E., & Paulussen, T.G.W.M. (2013). Effects of transfer-oriented curriculum on multiple behaviors in the Netherlands. *Health Promotion International,* doi:10.1093/heapro/dat039.

Petty, R., & Cacioppo, J.T. (2012). *Communication and persuasion: Central and peripheral routes to attitude change*. New York, NY: Springer Science and Business Media.

Poobalan, A.S., Pitchforth, E., Imamura, M., Tucker, J.S., Philip, K., Spratt, J., Mandava, L., & van Teijlingen, E. (2009). Characteristics of effective interventions in improving young people's sexual health: a review of reviews. *Sex Education, 9(3),* 319-336.

Pound, P., Langford, R., & Campbell, R. (2016). What do young people think about their school-based sex and relationship education? A qualitative synthesis of young people's views and experiences. *BMJ Open*; 6:e011329. doi:10.1136/bmjopen-2016-011329.

Pringle, J., Mills, K.L., McAteer, J., Jepson, R., Hogg, E., Anand, N., & Blakemore, S., (2017). The physiology of adolescent sexual behaviour: a systematic review. *Cogent Social Sciences*, *3*, 1368858.

Quek, L., White, A., Low, C., Brown, J., Dalton, N., Dow, D., & Connor, J.P. (2012). Good choices, great future: An applied theatre prevention program to reduce alcohol-related risky behaviours during Schoolies. *Drug and Alcohol Review,* 31, 897–902.

R Development Core Team (2014). *R: A Language and Environment for Statistical Computing*. Vienna, Austria.

Rinehart, S.J., Espelage, D.L. (2015). A multilevel analysis of school climate, homophobic name-calling, and sexual harassment victimization/perpetration among middle school youth. *Psychology of Violence, 6(2)*, 213–222.

Rivis, A., Sheeran, P., & Armitage, C.J. (2006). Augmenting the Theory of Planned Behaviour with the Prototype/Willingness Model: predictive validity of actor versus abstainer prototypes for adolescents' health-protective and health-risk intentions. *British Journal of Health Psychology, 11,* 483–500.

Rijksoverheid. (n.d). *Hoe krijgt mijn kind praktijkonderwijs (pro)? [How does my child get practical education (pro)?] Retrieved from https://www.rijksoverheid.nl/onderwerpen/passend-onderwijs/vraag-en-antwoord/hoe-krijgt-mijn-kind-praktijkonderwijs.*

Rostosky, S.S., Dekhtyar, O., Cupp, P.K., & Anderman, E.M. (2008). Sexual self-concept and sexual self-efficacy in adolescents: a possible clue to promoting sexual health? *The Journal of Sex Research, 45(3),* 277-286.

Rutgers (2018). https://flagsystem.org/.

Schaafsma, D., Kok, G., Stoffelen, J.M.T., & Curfs, L.M.G. (2017). People with intellectual disabilities talk about sexuality: implications for the development of sex education. *Sexual Disability, 35,* 21-38.

Schaafsma, D., Stoffelen, J.M.T., Kok, G., & Curfs, L.M.G. (2013). Exploring the development of existing sex education programmes for people with intellectual disabilities: an intervention mapping approach. *Journal of Applied Research in Intellectual Disabilities, 26*, 157-166.

Schaalma, H.P., Abraham, C., Rogers Gillmore, M., & Kok, G. (2004). Sex Education as Health Promotion: What Does It Take? *Archives of Sexual Behavior, 33*, 259–269.

Schmidt, M., & Čreslovnik, H. (2010). Learning habits of students with special needs in short-term vocational education programmes. *Educational Studies, 36*(4), 415-430.

Shackleton, N., Jamal, F., Viner, R.M., Dickson, K., Patton, G., & Bonell, C. (2016). School-based interventions going beyond health education to promote adolescent health: systematic review of reviews. *Journal of Adolescent Health, 58*, 382-396.

Singh, A.S., Chin A Paw, M.J.M., Kremers, S.P.J., Visscher, T.L.S., Brug, J., & Mechelen, W. van (2006). Design of the Dutch Obesity Intervention in Teenagers (NRG-DOiT): systematic development,implementation and evaluation of a school-based intervention aimed at the prevention of excessive weight gain in adolescents. *BMC Public Health, 6,* 304-319.

Steinberg, L., & Monahan, K.C. (2007). Age differences in resistance to peer influence. *Developmental Psychology, 43,* 1531-1543.

Stephenson, J., Strange, V., Allen, E., Copas, A., Johnson, A., et al. (2008). The long-term effects of a peer-led sex education programma (RIPPLE): a cluster randomised trial in schools in England. *PLoS Medicine 5(11): e224,* doi:10.1371/journal.pmed.0050224.

SurveyMonkey. (1999-2018). *Retrieved from https://nl.surveymonkey.com/.*

Taylor, B.G., Stein, N.D., Mumford, E.A., & Woods, D. (2013). Shifting Boundaries: an experimental evaluation of a dating violence prevention program in middle schools. *Prevention Science, 14,* 64–76.

Temple, J.R., & Choi, H. (2014). Longitudinal association between teen sexting and sexual behavior. *Pediatrics, 134(5),* 1-6.

Timmerman, G. (2005). A comparison between girls' and boys' experiences of unwanted sexual behaviour in secondary schools. *Educational Research, 47*(3), 291-306.

Todd, J., & Mullan, B. (2011). Using the Theory of Planned Behaviour and Prototype Willingness Model to target binge drinking in female undergraduate university students. *Addictive Behaviors, 36*(10), 980-986.

Tolman, D.L., & McClelland, S.I. (2011). Normative sexuality development in adolescence: a decade in review, 2000–2009. *Journal of Research on Adolescence, 21(1),* 242 – 255.

Vagi, K.J, Rothman, E., Latzman, N.E., Teten Tharp, A., Hall, D.M., & Breiding, M.J. (2013). Beyond correlates: a review of risk and protective factors for adolescent dating violence perpetration. *Journal of Youth and Adolescence, 42*(4), 633–649.

Van Ardenne, B., Boom, A., Gijsbers, R., & Sterrenburg, L. (2008). *Jongens. Docentenhandleiding [Boys. Teachers manual].* Den Haag: Centrum 16.22.

Van Breukelen, G.J.P. (2006). ANCOVA versus change from baseline had more power in randomized studies and more bias in nonrandomized studies. *Journal of Clinical Epidemiology, 59*, 920-925.

Van Lettow, B., de Vries, H., Burdorf, A., & van Empelen, P. (2014). Quantifying the strength of the associations of prototype perceptions with behaviour, behavioural willingness, and intentions: A meta-analysis. *Health Psychology Review, 10(1)*, 25-43.

Van Lieshout, S., Mevissen, F.E.F., van Breukelen, G., Jonker, M., & Ruiter, R.A.C. (2016). Make a Move: a comprehensive effect evaluation of a sexual harassment prevention program in Dutch residential youth care. *Journal of Interpersonal Violence,* 1-29.

Van Oosten, N., & De Lijster, G. (2014). *Jongens, seks en grenzen. Procesevaluatie lespakket Jongens*

[Boys, sex and boundaries. Process evaluation educational program Boys]. Utrecht: MOVISIE; Project number P2265.

Vega-Gea, E., Ortega-Ruiz, R., & Sánchez, V. (2016). Peer sexual harassment in adolescence: Dimensions of the sexual harassment survey in boys and girls. *International Journal of Clinical and Health Psychology, 16*, 47-57.

Vladutiu, C.J., Martin, S.L., & Macy, R.J. (2011). College- or university-based sexual assault prevention programs: a review of program outcomes, characteristics, and recommendations. *Trauma, Violence, & Abuse, 12(2),* 67-86.

Walrave, M., Ponnet, K., Ouytsel, J. van, Gool, E. van, Heirman, W., & Verbeek, A. (2015). Whether or not to engage in sexting: Explaining adolescent sexting behaviour by applying the prototype willingness model. *Telematics and Informatics, 32(4),* 796-808.

Weaver, H., Smith, G., & Kippax, W. (2005). School-based sex education policies and indicators of sexual health among young people: a comparison of the Netherlands, France, Australia and the United States. *Sex Education, 5(2),* 171-188.

Webb, T.L., & Sheeran, P. (2006). Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence. *Psychological Bulletin, 132*(2), 249-268.

Weinstein, N.D. (1988). The Precaution Adoption Process. *Health Psychology, 7(4)*, 355-386.

Wierenga, L.M., Bos, M.G.N., Schreuders, E., Vd Kamp, F., Peper, J.S., Tamnes, C.K., Crone, E.A. (2018). Unraveling age, puberty and testosterone effects on subcortical brain development across adolescence. *Psychoneuroendocrinology, 91*, 105-114.

Wincentak, K., Connolly, J., & Card, N. (2017). Teen dating violence: A meta-analytic review of prevalence rates. *Psychology of Violence,* 7(2), 224-241.

Witkowska, E. & Menckel, E. (2005). Perceptions of sexual harassment in Swedish high schools: experiences and school-environment problems. *European Journal of Public Health, 15*, 78-85.

Wolfe, D.A., Crooks, C., Jaffe, P., Chiodo, D., Hughes, R., Ellis, W., Stitt, L., & Donner, A. (2009). A school-based program to prevent adolescent dating violence. A cluster randomized trial. *Archives of Pediatrics & Adolescent Medicine, 163(8),* 692-699.

World Health Organization (2006). *Defining sexual health: report of a technical consultation on sexual health, 28–31 January 2002, Geneva*. Geneva: World Health Organization.

Ybarra, M.L., & Thompson, R.E. (2017). Predicting the emergence of sexual violence in adolescence. *Prevention Science,* https://doi: 10.1007/s11121-017-0810-4.

Young, A.M., Grey, M., & Boyd, C.J. (2009). Adolescents' experiences of sexual assault by peers: prevalence and nature of victimization occurring within and outside of school. *Journal of Youth and Adolescence, 38(8),* 1072-1083.

Summary

Chapter 1 provides the background of this PhD research on school-based sex and relationship education, and in particular on the prevention of adolescent sexual harassment behaviors. For the purpose of this PhD research, two existing Dutch school-based programs for the prevention of adolescent sexual harassment were evaluated: *Benzies & Batchies* and *Boys. Benzies & Batchies* is an interactive school-based program for both adolescent boys and girls, and consists of four complementary elements: (a) an introductory lesson, (b) a peer-performed theatre play followed by a peer-led group discussion, (c) three classroom lessons to teach skills and resilience regarding social and sexual behavior given by trained instructors, and (d) a closing lesson. The *Boys* program is given by a trained male instructor and consists of five consecutive lessons – each constituted around a specific subject – intended to teach adolescent male students skills with regard to relational and sexual behavior.

A growing number of adolescents encounter sexual harassment behaviors, such as sexting (i.e., sending and receiving nonconsensual sexually tinted messages), sexual remarks and dating violence. They can be a victim of it, perpetrator or both. There is no clear definition of what sexual harassment entails, and prevalence rates vary depending on the definition that researchers use, the age of the adolescents involved, their ethnicity and educational level. Having been a victim of sexual harassment has negative health effects. There is therefore a need for effective, theory based, preventive interventions. Such interventions can be effective, if they target the right underlying factors (i.e., determinants of behavior) that influence the behavior. Adolescent sexual harassment behavior may be prevented by using school-based programs that have been developed through systematic planning, and based on theoretical evidence. For this the six steps of Intervention Mapping can be used. The aims of this PhD research were to gain insight into determinants of adolescent sexual harassment behavior, which we defined as 'any sexual behavior against someone's will'; to evaluate the process of development of *Benzies & Batchies* and *Boys* by using the Intervention Mapping framework; and to gain insight into the short and longer term effects of these programs.

Chapter 2 describes a study which aimed to establish which determinants from the Reasoned Action Approach (i.e., attitude, perceived norm and perceived behavioral control) are associated with the intention to reject or to stop adolescent sexual harassment; which additional determinants that the literature deemed as important, i.e., risk perception, knowledge, prototype image (i.e., cognitive representations or social images of the type of person of one's age who engages in specific risk behaviors), sexual self-esteem, and sexual harassment behavior in the past six months, were associated with adolescent's intentions to reject or to stop sexual

harassment; and which beliefs, underlying the determinants, should be selected when developing a program with regard to the prevention of adolescent sexual harassment behavior. We conducted a cross sectional study in adolescents aged 12-16 years (N = 571; 52% girls) within 25 schools for secondary education. The results of our study show that significantly more girls than boys reported they had been victim of sexual harassment, particularly of sexual remarks and being forced into sex. Boys on the other hand, reported significantly more perpetration behaviors in the past six months than girls, especially on having made sexual remarks about someone. We found that perceived behavioral control was significantly associated with both the intention to reject sexual harassment (i.e., having more confidence in being able to reject sexually explicit pictures and remarks) and with the intention to stop committing it (i.e., having more confidence in being able to stop kissing someone against their will). Furthermore, we found that sex (i.e., being female) was significantly associated with the behavioral intention in all three scenarios as well; and that age (i.e., being older) was associated with the intention to reject sexually explicit pictures. The results of our study suggest that an intervention at least has to allow for different beliefs and cognitions of boys and girls.

Chapter 3 presents the results of a retrospective evaluation of the process of development of *Benzies & Batchies* and *Boys*. While each intervention had been developed by professionals in practice, little was known about the process of development or the theoretical rationale underlying it. The aim of this study therefore was to retrospectively evaluate the strengths and weaknesses of both programs, and to establish the extent to which the development, implementation and evaluation of the interventions had followed a planned process by using the Intervention Mapping framework. We combined desk research into the context and content of the interventions with face-to-face interviews to gather the opinions of the initial intervention developers on the development process. Next, two researchers rated the degree of project planning of each intervention by coding each of 40 planning criteria within the 19 tasks of the six steps of Intervention Mapping. We found that the intervention developers had worked out tasks within the steps concerning the programs' production, adoption, implementation and evaluation further than they had within steps regarding the needs assessment and theoretical underpinning of the programs. The results of this study show that, although both programs lacked a thorough theoretical foundation, the methods and materials that were used represented aspects of evidence-based behavior change theories. Besides, the developers of *Benzies & Batchies* had used twice as many methods as the developers of the *Boys* program; as well as more practical applications. We advise future intervention developers to combine their practice-based experience with evidence-based theories so that the development of practice-based interventions will improve which leads to more successful and effective interventions.

In **chapter 4** a study is described which aimed to establish any effects of *Benzies & Batchies* on sexual harassment behavior (victimization and perpetration) and five determinants: attitude, perceived social norm, self-efficacy, intention, and prototype; to establish any effects of *Benzies & Batchies* on three distal factors: attitude towards gender roles, attitude towards media influence and sexual self-esteem; and to establish whether any effects found differed with regard to the adolescents' gender, educational level and ethnicity. We evaluated its effectiveness, using a cluster-randomized controlled design to assign schools to an experimental condition (n = 14 schools; 431 students (51% female)) and a control condition (n = 11 schools; 384 students (51% female)). At post-test, students in the experimental group reported a reduced intention to commit sexual harassment behavior and higher self-efficacy in rejecting it. At post-test and follow-up there was a significant positive effect on social norms for rejecting sexual harassment behavior. At follow-up, sexual self-esteem was higher in students in the experimental group than in the control group. Based on the results of the study, we conclude that the combination of the theatre play and the lessons have the potential to prevent adolescent sexual harassment behavior.

Chapter 5 presents the findings of a study which aimed to establish the effects of *Boys* on sexual harassment behaviors and six determinants. We used a quasi-experimental design (experimental condition n = 15 schools, 159 male students; control condition n = 14 schools, 132 male students; mean age 13.8 years). All students filled out a questionnaire before the program started (baseline), just after the program had ended (first post-test), and again six months later (follow-up). We found less traditional attitudes toward gender roles in the intervention group at first post-test, and at six months follow-up. However, the control group showed a decrease in these attitudes as well. A similar effect was found for sexual harassment behaviors at follow up: male students in both groups showed an increase in perpetration behaviors and slightly more favorable rejection behaviors. No statistically significant effects on self-reported sexual harassment behaviors were found. The results of our study suggest that a similar, natural course in the male adolescents' sexual and behavioral development can be observed, regardless of being a participant of the *Boys* intervention. We recommend that the program's teaching methods should be further adapted to the needs and development of male students attending pre-vocational education.

Finally, **chapter 6** summarizes the main results of the four studies. Moreover, implications for practice and future development of school-based sex and relationship education programs are discussed, as well as recommendations for further research.

The prevention of adolescent sexual harassment behaviors is important, preferably from a relatively young age, as these behaviors progress from milder acts into more violent ones in

time. We found no clear definition in the literature of what sexual harassment behavior entails, as researchers classify it in different ways. Besides, not all sexual activities carried out by young people have negative health consequences, but are part of their developmentally normative sexual development. To emphasize the dynamic aspect of definition of sexual harassment, we recommend to incorporate the six criteria of the Flag System into the definition, to assure that attention is payed to respecting mutual consent, voluntariness and equality, and standards regarding context, age and self-respect when it comes to adolescent sexual activities. In addition, the underlying ideas and criteria of the Flag System can be incorporated by future intervention developers in their program, to identify acceptable and unacceptable sexual behaviors, and also as a means of discussing sexual behavior with adolescents.

We found that some of the determinants that we had selected for our study were associated with adolescent sexual harassment behavior, and others were not. We believe that expanding the theoretical model we used with behavioral willingness and prototype similarity can add to our understanding of the prediction of engaging or refraining from harassment. Besides, we recommend further research into theories and insights of adolescent development, which will gain our understanding for their sexual development as well.

Involving adolescents and their parents in the development of research designs and methods ensures that intervention developers will keep in touch with their target group and keep track of the developments that take place in the rapidly changing society in which we live, especially with regard to social media and internet use. In addition, we recommend that future intervention developers develop a theory-based implementation plan for adopting, implementing and maintaining their program. By doing so, they take into account the factors that could influence the implementation of their intervention in advance.

As a result of the effect studies of *Benzies & Batchies* and *Boys*, we found differences in outcomes between boys and girls, but also between students of different educational levels. It is important that our understanding of the differences in problems that the students of different educational levels experience, whether they are behavioral, educative or developmental-oriented, is increased. Besides, we recommend future intervention developers to pay attention to the differences between the sexes when working with mixed-gender groups, and to ensure that each sex gains a greater insight into the beliefs of the other.

We conclude that the research in this PhD dissertation has contributed to the existing body of evidence on the prevention of adolescent sexual harassment and the knowledge thereof. In addition, it offers support to professionals who develop preventive interventions, and to professionals who work with adolescents in schools, such as teachers and school staff.

Samenvatting

Hoofdstuk 1 schetst de achtergrond van dit promotieonderzoek naar lesprogramma's over seks en relaties op school, en in het bijzonder naar het voorkomen van seksueel grensoverschrijdend gedrag van jongeren. Voor dit promotieonderzoek zijn twee bestaande Nederlandse lesprogramma's voor de preventie van seksueel grensoverschrijdend gedrag van jongeren geëvalueerd: *Benzies & Batchies* en *Jongens. Benzies & Batchies* is een interactief lesprogramma voor zowel jongens als meisjes bestaande uit vier complementaire elementen: (a) een inleidende les, (b) een theatervoorstelling uitgevoerd door peer-educators, gevolgd door een groepsgesprek onder leiding van de peer-educators, (c) drie weerbaarheidslessen – gegeven door professionele instructeurs – om sociale en relationele vaardigheden aan te leren; en (d) een afsluitende les. Het *Jongens* lesprogramma wordt gegeven door een getrainde, mannelijke, instructeur en bestaat uit vijf opeenvolgende lessen – elk rondom een specifiek onderwerp – en is bedoeld om jonge mannelijke leerlingen vaardigheden aan te leren met betrekking tot relationeel en seksueel gedrag.

Een toenemend aantal jongeren krijgt te maken met seksueel grensoverschrijdend gedrag, zoals sexting (i.e., het versturen en ontvangen van seksueel getinte afbeeldingen of berichten tegen iemands wil), seksuele opmerkingen en datinggeweld. Ze kunnen er het slachtoffer van zijn, dader of allebei. Er is geen duidelijke definitie van seksueel grensoverschrijdend gedrag en de prevalentiecijfers variëren afhankelijk van de definitie die de onderzoekers gebruiken, de leeftijd van de betrokken jongeren, hun etniciteit en opleidingsniveau. Slachtoffer zijn geweest van seksueel grensoverschrijdend gedrag heeft negatieve gevolgen voor de gezondheid. Er is daarom behoefte aan effectieve, op theorie gebaseerde, preventieve interventies. Dergelijke interventies kunnen effectief zijn als ze zich richten op de onderliggende factoren (determinanten van gedrag) die het gedrag beïnvloeden. Seksueel grensoverschrijdend gedrag van jongeren kan worden voorkomen door lesprogramma's te gebruiken die zijn ontwikkeld met behulp van systematische planning en gebaseerd op theorie. Hiervoor kunnen de zes stappen van Intervention Mapping worden gebruikt. Het doel van dit promotieonderzoek is om inzicht te krijgen in determinanten van seksueel grensoverschrijdend gedrag van jongeren, dat we definiëren als 'elk seksueel gedrag tegen iemands wil'; de evaluatie van het ontwikkelingsproces van *Benzies & Batchies* en *Jongens* met behulp van Intervention Mapping; en inzicht te krijgen in de effecten op korte en langere termijn van deze twee lesprogramma's.

Hoofdstuk 2 beschrijft een onderzoek dat tot doel had vast te stellen welke determinanten van de Reasoned Action Approach (i.e, attitude, ervaren sociale norm en ervaren gedragscontrole) verband houden met de intentie van jongeren om seksueel grensoverschrijdend gedrag af te

wijzen of te stoppen; welke aanvullende determinanten die de literatuur als belangrijk beschouwt een rol spelen – namelijk risicoperceptie, kennis, prototype (i.e., cognitieve representaties of sociale beelden van het type persoon met dezelfde leeftijd die specifiek risicogedrag vertoont), seksuele eigenwaarde en seksueel grensoverschrijdend gedrag in de afgelopen zes maanden; en welke overtuigingen, die ten grondslag liggen aan de determinanten, moeten worden geselecteerd bij het ontwikkelen van een programma voor de preventie van seksueel grensoverschrijdend gedrag door jongeren. We hebben een cross-sectionele studie uitgevoerd bij jongeren in de leeftijd van 12-16 jaar (N = 571, 52% meisjes) op 25 scholen voor voortgezet onderwijs. De resultaten van onze studie tonen aan dat aanzienlijk meer meisjes dan jongens aangaven slachtoffer te zijn geweest van seksueel grensoverschrijdend gedrag, met name van seksuele opmerkingen en gedwongen seks. Jongens daarentegen rapporteerden over de afgelopen zes maanden aanzienlijk meer pleger gedrag dan meisjes, vooral omdat ze seksuele opmerkingen over iemand hadden gemaakt. We vonden dat waargenomen gedragscontrole significant verband hield met zowel de intentie om seksueel grensoverschrijdend gedrag af te wijzen (i.e., meer zelfvertrouwen hebben om seksueel getinte foto's en opmerkingen te kunnen afwijzen) en met de intentie om te stoppen met het plegen ervan (i.e., meer vertrouwen hebben in het kunnen stoppen met zoenen tegen iemands wil). Verder vonden we dat sekse (i.e., vrouw zijn) in alle drie de scenario's significant geassocieerd was met gedragsintentie; en dat leeftijd (i.e., ouder zijn) was geassocieerd met de intentie om seksueel getinte afbeeldingen af te wijzen. De resultaten van onze studie suggereren dat een interventie op zijn minst rekening moet houden met de verschillen in opvattingen en cognities tussen jongens en meisjes.

Hoofdstuk 3 presenteert de resultaten van de retrospectieve evaluatie van het ontwikkelingsproces van *Benzies & Batchies* en *Jongens*. Hoewel elke interventie in de praktijk door professionals was ontwikkeld, was er weinig bekend over het ontwikkelingsproces of de theoretische achtergrond ervan. Het doel van deze studie was daarom om retrospectief en met behulp van Intervention Mapping de sterke en zwakke punten van beide programma's te evalueren en om vast te stellen in hoeverre de ontwikkeling, implementatie en evaluatie van de interventies een gepland proces hadden gevolgd. We hebben deskresearch naar de context en inhoud van de interventies gecombineerd met face-to-face interviews om de meningen van de initiële interventieontwikkelaars over het ontwikkelingsproces te verzamelen. Vervolgens hebben twee onderzoekers de mate van projectplanning van elke interventie beoordeeld door elk van de 40 planningscriteria te coderen binnen de 19 taken van de zes stappen van Intervention Mapping. De resultaten toonden aan dat de interventieontwikkelaars de taken binnen de stappen die betrekking hadden tot de productie, de adoptie, de implementatie en de evaluatie van de lesprogramma's verder hadden uitgewerkt dan de stappen die betrekking

hadden op de needs-assessment en de theoretische onderbouwing van de lesprogramma's. De resultaten van dit onderzoek tonen aan dat, hoewel bij beide programma's de theoretische basis ontbrak, er in de gebruikte methoden en materialen wel aspecten van evidence-based gedragsveranderingstheorieën zichtbaar waren. Bovendien hadden de ontwikkelaars van *Benzies & Batchies* tweemaal zoveel methoden gebruikt als de ontwikkelaars van het *Jongens* lesprogramma; en ook meer praktische toepassingen. We adviseren toekomstige interventieontwikkelaars om hun praktijkervaring te combineren met evidence-based theorieën, zodat de ontwikkeling van praktijkgerichte interventies verbetert, wat vervolgens leidt tot meer succesvolle en effectieve interventies.

In **hoofdstuk 4** wordt een studie beschreven die gericht was op het vaststellen van eventuele effecten van *Benzies & Batchies* op seksueel grensoverschrijdend gedrag (slachtofferschap en plegerschap) en vijf determinanten: attitude, ervaren sociale norm, eigen effectiviteit, intentie en prototype; om effecten van *Benzies & Batchies* op drie distale factoren vast te stellen: houding ten opzichte van genderrollen, houding ten opzichte van media-invloeden en seksuele eigenwaarde; en om vast te stellen of de gevonden effecten verschilden met betrekking tot sekse, opleidingsniveau en etniciteit van de jongere. We hebben het effect van het lesprogramma geëvalueerd met behulp van een cluster-gerandomiseerd controlled design en scholen toegewezen aan een experimentele groep (n = 14 scholen, 431 leerlingen (51% meisje)) en een controle groep (n = 11 scholen; 384 leerlingen (51% meisje)). Op de eerste nameting rapporteerden leerlingen in de experimentele groep een verminderde intentie om seksueel grensoverschrijdend gedrag te plegen en een hogere eigen effectiviteit in het afwijzen ervan. Op de eerste en de tweede nameting was er een significant positief effect op de ervaren sociale norm voor het afwijzen van seksueel grensoverschrijdend gedrag. Op de tweede nameting was het seksuele zelfbeeld hoger bij leerlingen in de experimentele groep dan bij leerlingen in de controlegroep. Op basis van de resultaten van de studie concluderen we dat de combinatie van de theatervoorstelling en de weerbaarheidslessen potentie hebben om seksueel grensoverschrijdend gedrag van jongeren te voorkomen.

Hoofdstuk 5 presenteert de resultaten van een onderzoek dat gericht was op het vaststellen van de effecten van *Jongens* op seksueel grensoverschrijdend gedrag en zes determinanten. We hebben een quasi-experimenteel onderzoeksdesign gebruikt (experimentele groep n = 15 scholen, 159 mannelijke leerlingen; controle groep n = 14 scholen, 132 mannelijke leerlingen; gemiddelde leeftijd 13.8 jaar). Alle leerlingen vulden een vragenlijst in voordat het lesprogramma begon, net nadat het programma was afgelopen (eerste nameting) en weer zes maanden later (tweede nameting). Op de eerste en tweede nameting vonden we minder

traditionele opvattingen over genderrollen in de interventiegroep. De controlegroep vertoonde echter ook een afname in deze attitudes. Een soortgelijk effect werd gevonden voor seksueel grensoverschrijdend gedrag op de tweede nameting: jongens in beide groepen vertoonden een toename van het plegergedrag en in afkeuringsgedrag, een gunstiger uitkomst. Er werden geen statistisch significante effecten gevonden op zelf gerapporteerd seksueel grensoverschrijdend gedrag. De resultaten van ons onderzoek suggereren dat een vergelijkbaar, natuurlijk verloop in de seksuele en gedragsontwikkeling van de jongens kan worden waargenomen, ongeacht of ze deelnemer zijn aan de interventie *Jongens*. We bevelen aan dat de onderwijsmethoden van het programma verder worden aangepast aan de behoeften en de ontwikkeling van deze leerlingen op het praktijkonderwijs.

Tenslotte vat **hoofdstuk 6** de belangrijkste resultaten van de vier onderzoeken samen. Bovendien worden implicaties voor de praktijk en de toekomstige ontwikkeling van lesprogramma's voor seksuele voorlichting en relatieonderwijs besproken, evenals aanbevelingen voor verder onderzoek.

De preventie van seksueel grensoverschrijdend gedrag van jongeren is belangrijk, bij voorkeur vanaf een relatief jonge leeftijd, aangezien deze gedragingen zich in de loop van de tijd ontwikkelen van mildere handelingen tot meer gewelddadige. We vonden in de literatuur geen duidelijke definitie van seksueel grensoverschrijdend gedrag van jongeren, omdat onderzoekers het op verschillende manieren classificeren. Bovendien hebben niet alle seksuele activiteiten van jongeren negatieve gevolgen voor de gezondheid, maar maken ze deel uit van hun normatieve seksuele ontwikkeling. Om het dynamische aspect van de definitie van seksueel grensoverschrijdend gedrag te benadrukken, adviseren we om de zes criteria van het Vlaggensysteem op te nemen in de definitie, zodat er aandacht wordt besteed aan het respecteren van wederzijdse instemming, vrijwilligheid en gelijkheid, en normen met betrekking tot context, leeftijd en zelfrespect, waar het gaat om seksuele activiteiten van jongeren. Bovendien kunnen de onderliggende ideeën en criteria van het Vlaggensysteem door toekomstige interventieontwikkelaars in hun programma worden opgenomen, niet alleen om aanvaardbaar en onaanvaardbaar seksueel gedrag te herkennen, maar ook als een middel om seksueel gedrag met jongeren te bespreken.

We vonden dat sommige van de determinanten die we voor onze studie hadden geselecteerd, verband hielden met seksueel grensoverschrijdend gedrag van jongeren en andere niet. We denken dat uitbreiding van het theoretische model dat we gebruikten met 'behavioral willingness' (bereidheid om gedrag uit te voeren) en 'prototype similarity' (iemands perceptie mbt het wel of niet overeenkomen van het prototype met zichzelf) kan bijdragen aan het begrip van de voorspelling van het vertonen of afwijzen van seksueel grensoverschrijdend gedrag.

Daarnaast bevelen we verder onderzoek aan naar theorieën en inzichten van de ontwikkeling van jongeren, die ons tevens meer inzicht kunnen geven in hun seksuele ontwikkeling.

Het betrekken van jongeren en hun ouders bij het ontwikkelen van onderzoeksdesigns en -methoden zorgt ervoor dat interventieontwikkelaars in contact blijven met hun doelgroep en de ontwikkelingen kunnen volgen die plaatsvinden in de snel veranderende samenleving waarin we leven, vooral met betrekking tot sociale media en internetgebruik. Daarnaast bevelen we aan dat toekomstige interventieontwikkelaars een op theorie gebaseerd implementatieplan ontwikkelen voor het adopteren, implementeren en onderhouden van hun programma. Ze houden in dat geval van tevoren al rekening met de factoren die de uitvoering van hun interventie kunnen beïnvloeden.

Als resultaat van de effectstudies van *Benzies & Batchies* en *Jongens*, vonden we verschillen in uitkomsten tussen jongens en meisjes, maar ook tussen leerlingen van verschillende onderwijsniveaus. Het is belangrijk dat ons begrip wordt vergroot van de verschillen in problemen die de leerlingen van verschillende onderwijsniveaus ervaren, of deze nu te maken hebben met gedrag, ontwikkeling, of manier van leren. Daarnaast raden we toekomstige interventieontwikkelaars aan om aandacht te besteden aan de verschillen tussen de seksen bij het werken met groepen met zowel jongens als meisjes, en om ervoor te zorgen dat elke sekse meer inzicht krijgt in de overtuigingen van de ander.

We concluderen dat het onderzoek in dit proefschrift heeft bijgedragen aan de bestaande hoeveelheid evidence met betrekking tot de preventie van seksueel grensoverschrijdend gedrag van jongeren en de kennis daarover. Daarnaast biedt het ondersteuning aan professionals die preventieve interventies ontwikkelen, en aan professionals die werken met jongeren op scholen, zoals leraren en schoolpersoneel.

Valorisatie addendum

Dit proefschrift handelt over lesprogramma's ter preventie van seksueel grensoverschrijdend gedrag door jongeren. Het proefschrift wil een bijdrage leveren aan de ontwikkeling van toekomstige preventieve interventies, en als gevolg daarvan, levert dit proefschrift een bijdrage aan de ontwikkeling van de seksuele gezondheid van jongeren. Het promotieonderzoek heeft resultaten opgeleverd met betrekking tot determinanten die geassocieerd zijn met de intentie van jongeren om 'nee' te zeggen tegen seksueel grensoverschrijdend gedrag en met de intentie om te stoppen met het plegen van dit gedrag; het ontwikkelproces van dergelijke lesprogramma's voor jongeren; en met betrekking tot de effecten van preventieve lesprogramma's op seksueel grensoverschrijdend gedrag van jongeren, of op de determinanten van dit gedrag.

In dit addendum wordt beschreven in hoeverre de kennis die is opgedaan tijdens de uitvoering van het promotieonderzoek zoals beschreven in dit proefschrift geschikt of beschikbaar gemaakt kan worden voor algemeen maatschappelijk en/of economisch nut (kennisvalorisatie; Van Drooge et al. 2011).

Maatschappelijke en economische relevantie

Naast de wetenschappelijke relevantie van de onderzoeksresultaten, heeft dit onderzoek ook resultaten opgeleverd die maatschappelijk en economisch relevant zijn. Op wetenschappelijk gebied heeft het promotieonderzoek inzichten opgeleverd met betrekking tot determinanten van seksueel grensoverschrijdend gedrag door jongeren, de effectiviteit van de onderzochte lesprogramma's, en de theoretische onderbouwing van de programma's. De maatschappelijke relevantie van dit proefschrift heeft betrekking op de kennis die het onderzoek heeft opgeleverd voor professionals die in de praktijk werkzaam zijn. Deze nieuwe kennis kan door (toekomstige) interventie ontwikkelaars gebruikt worden om nieuwe interventies te ontwikkelen en bestaande interventies door te ontwikkelen. Daarnaast worden in dit proefschrift twee preventieve interventies beschreven die door hun aanpak (waaronder de inzet van peereducators bij *Benzies & Batchies*, en het gebruik van verschillende werkvormen bij *Jongens*) als inspiratie kunnen dienen voor andere interventie ontwikkelaars. Door het inzetten van interventies ter preventie van seksueel grensoverschrijdend gedrag door jongeren kunnen gezondheidsrisico's op latere leeftijd (zoals depressie en middelengebruik; Exner-Cortens et al. 2013) worden voorkomen, dit kan vervolgens leiden tot een besparing van zorgkosten. Hiermee heeft dit proefschrift ook een economische relevantie.

Doelgroep

De resultaten van dit promotieonderzoek zijn niet alleen interessant voor vertegenwoordigers van de wetenschap, waaronder onderzoekers. Ook professionals die in de praktijk werkzaam zijn, zoals interventie ontwikkelaars en docenten, kunnen inspiratie halen uit dit promotieonderzoek, bijvoorbeeld met betrekking tot de te volgen stappen voor het ontwikkelen van een interventie. Daarnaast kunnen ook beleidsmedewerkers bij een gemeente baat hebben bij dit promotieonderzoek, bijvoorbeeld om scholen te adviseren met betrekking tot het gebruik van lesprogramma's ter preventie van seksueel grensoverschrijdend gedrag door jongeren.

Activiteiten/producten

Met dit promotieonderzoek is onderzoek gedaan naar twee reeds bestaande lesprogramma's ter preventie van seksueel grensoverschrijdend gedrag door jongeren. Naar aanleiding van de resultaten naar de effectiviteit van de programma's, en de adviezen die vervolgens zijn gegeven, hebben de eigenaren van beide interventies hun lesprogramma aangepast; zo is de theatervoorstelling *Benzies & Batchies* aangepast waardoor er meer interactie mogelijk is tussen de leerlingen en de peereducators (acteurs in de voorstelling), en is het filmmateriaal van het lesprogramma *Jongens* geùpdatet en zijn de werkbladen aangepast aan de huidige tijdsgeest.

Innovatie

Het aanbod van lesprogramma's ter preventie van seksueel grensoverschrijdend gedrag is in de afgelopen jaren enigszins toegenomen. Stichting Kikid, ontwikkelaar en eigenaar van *Benzies & Batchies*, heeft voor haar lesprogramma bewust gekozen voor de inzet van peereducators. Deze peereducators zijn studenten aan een hogeschool die stage lopen bij Kikid. Kikid heeft voor deze studenten een compleet traject opgesteld, waarbij de studenten middels een training worden opgeleid tot peereducator en vervolgens in de theatervoorstelling in hun rol als acteur peereducation uitvoeren. Op deze manier is een innovatieve en unieke vorm van peereducation ontstaan. Stichting Centrum 16.22, ontwikkelaar en eigenaar van *Jongens*, wil met het lesprogramma onder andere bereiken dat de jongens die de lessen volgen zelf, en in gesprek met elkaar, op zoek gaan naar hun eigen normen met betrekking tot seksueel gedrag. Op deze manier worden de jongens, als individu en als lid van de groep, eigenaar van het onderwerp.

Planning en realisatie

Zowel Stichting Kikid en Stichting Centrum 16.22 zijn continue bezig met het actualiseren van hun lesprogramma, waarbij zij hun input halen uit de evaluaties met de gebruikers van de programma's (waaronder jongeren, peereducators, docenten). Daarnaast wordt op dit moment een uitgebreide beschrijving opgesteld van het *Jongens* lesprogramma, waarmee vervolgens

erkenning kan worden aangevraagd bij de Interventiedatabase Gezond en Actief Leven van het Centrum Gezond Leven (niveau: goed onderbouwd). Het lesprogramma *Benzies & Batchies* is inmiddels opgenomen in deze interventiedatabase (niveau: goed onderbouwd).

Referenties

Exner-Cortens, D., Eckenrode, J., & Rothman, E. (2013). Longitudinal associations between teen dating violence victimization and adverse health outcomes. *Pediatrics, 131(1)*, 71–78.

Van Drooge, L., Vandeberg, R., Zuijdam, F., Mostert, B., Van der Meulen, B. & Bruins, E. (2011). *Waardevol: Indicatoren voor Valorisatie.* Den Haag: Rathenau Instituut.

7

Het is klaar!

In het academisch jaar 2012/2013 promoveerden in Nederland ruim vierduizend mensen. Ruim 46 procent hiervan was vrouw. In de leeftijd van 45 tot 60 jaar lag het aantal gepromoveerde vrouwen met 20 procent een stuk lager, zo blijkt uit cijfers van het Centraal Bureau voor de Statistiek [1].

Promoveren. Ik wist aan het begin van het hele traject toch echt niet waar ik aan begon! Ik was net afgestudeerd en had helemaal geen referentiekader in mijn directe omgeving. Ik had weleens gehoord van een oom die in Rotterdam was gepromoveerd, maar verder dan dat reikte mijn kennis niet. Het was een heel spannend avontuur waar ik helemaal blanco in ben gestapt. Het bleek de ultieme strijd met mezelf. Wanneer ik dacht 'eureka!', dan was ik er toch net weer niet.

Halverwege het traject begon mijn vertrouwen te groeien. Ik zag hoe Helma, Meinou, Jeroen, en Jorinde met trots hun proefschrift verdedigden. 'Dat wil ik ook!', dacht ik, ik zag zelfs al voor me hoe mijn feest er uit zou komen te zien en wie mijn paranimf zou moeten zijn. Toch zakte de moed mij ook regelmatig in de schoenen. Met behulp van coachgesprekken ben ik telkens weer opgekrabbeld. Op woensdag 5 april 2017 ontving ik een email uit Noorwegen. Iemand had mijn artikel gelezen en had interesse in mijn onderzoek, wat tof!! En de eerste keer dat het artikel over *Benzies & Batchies* werd geciteerd in een ander artikel: wat een fantastisch gevoel! Ik ging door met mijn 'strijd'!

Ik had ook zeer uiteenlopende ervaringen met het indienen van artikelen. Bijvoorbeeld met indienen van het artikel over *Jongens*: de eerste keer dat ik het indiende bij een tijdschrift waarvan we dachten dat het goed aansloot bij het thema (Violence Against Women), kreeg ik een afwijzing "*Unfortunately, based on the reviewers' assessments of the manuscript, I am sorry to say that I cannot agree to publish your paper.*" Kan gebeuren, geen probleem. Ik paste het artikel aan en maakte daarbij gebruik van de feedback die de twee reviewers hadden gegeven. Vervolgens diende ik het weer in bij een ander tijdschrift (Journal of Youth and Adolescence). Wat gebeurde er: ik kreeg op maandag 19 maart 2018 om 14.28 uur de bevestiging van de editorial office dat het artikel was ingediend. Om 15.12 uur (op 1 minuut na driekwartier (!) later) volgde de afwijzing: "*Unfortunately, the editors have completed an internal review of your manuscript and have deemed it inappropriate for full review given some of its limitations and overall sense that it was unclear what original and substantive contribution could be made to the developmental understanding of adolescent development.*" Misschien iets voor het Guiness Book of Records?

Gedurende het hele traject is de steun van mijn thuisfront onontbeerlijk geweest! Er is een heleboel gebeurd in de tussentijd, ups en downs, balanceren tussen privé, werk en promotie. Nogmaals, een ultieme persoonlijke strijd! Ik denk dat een promotietraject de ultieme strijd is

met jezelf, vergelijkbaar met de strijd die een bergbeklimmer levert bij het beklimmen van de Mount Everest bijvoorbeeld. Mijn ervaringen als moeder van twee opgroeiende dochters heeft me telkens scherp en betrokken gehouden bij het onderwerp. Dat het onderwerp leeft in de maatschappij moge duidelijk zijn.

Natuurlijk wil ik van deze gelegenheid, en op deze pagina, graag gebruik maken om een aantal personen in het zonnetje te zetten (in de hoop niemand te hebben vergeten, bij voorbaat excuses!). Zonder hen was deze hele promotie echt niet mogelijk geweest: allereerst mijn promotor Gerjo en mijn co-promotor en collega bij TNO Paul, jullie hebben mij vanaf het begin af aan het gevoel gegeven dat ik dit met goed gevolg zou gaan afronden, jullie waren altijd bereid tot sparren en hebben mijn vele concepten altijd van positieve en opbouwende feedback voorzien, dank daarvoor; maar ook de leden van de leescommissie die mijn proefschrift hebben gelezen en beoordeeld; Mariëlla voor haar secretariële ondersteuning vanuit Maastricht University; mijn collega's bij TNO; Stichting Kikid, en in het bijzonder Janine en Mahutin; Stichting Centrum 16.22, en in het bijzonder Ben en Annelies; mede-onderzoekers en co-auteurs Remy, Liesbeth, Hanneke, Nico, Rik, Winnie; studentassistenten van ASA; Minah; alle jongeren die de vragenlijsten hebben ingevuld ("*Maar mevrouw, wat denkt u wel dat wij allemaal doen!*"); kamergenoot aan de Wassenaarseweg Helma; Meinou en Paula voor hun hulp met statistiek; het promotieklasje met Noortje, Jorinde, Janine en Marion; notariskantoor Jop Mendelts voor het beschikbaar stellen van werkruimte; Paul Kamphuis (helaas in april 2018 overleden aan de gevolgen van de spierziekte ALS), Tineke Stel en Angelique van Duijn voor hun coaching als ik het echt niet meer zag zitten en de weg kwijt was; alle vriendinnen voor hun berichtjes op FB, app etc; paranimf en dierbare vriendin Carola (weet je nog: samen naar de PC om alvast te kijken welke jurk zou passen?); mijn twee mooie dochters Emily (tevens paranimf) en Myrthe: je zal maar zo'n moeder hebben die onderzoek doet naar iets met seks bij jongeren; Marcel: mijn constante rots in de branding en ultieme positiviteitsgoeroe. Wat hebben we in deze periode veel meegemaakt: je raakte je baan kwijt, we kwamen op de landelijke televisie, je raakte besmet met TBC, we waren 25 jaar getrouwd, onze oudste dochter ging samenwonen EN verloven, teveel om op te noemen. Ik ben je onnoemelijk dankbaar voor elke keer dat ik tegen je aan mocht zeuren, maar ook omdat je me hebt laten gaan en mij mijn ding hebt laten doen! Love you to the moon and back! Mijn moeder: je hebt meerdere malen gezegd dat je zo trots op me bent, dank je wel daarvoor! Ik ben omgekeerd ook zo trots op mijn moeder! Je staat aan de zijlijn, zonder pa, maar wel zó betrokken en geïnteresseerd. Daarnaast ben je altijd positief, ook toen er borstkanker bij je werd geconstateerd. Wellicht is dat voor mij ook een rode draad die door mijn leven loopt: opgeven is geen optie en ik volg mijn eigen pad! Mijn vader: pa, je bent er nu precies 10 jaar niet meer, maar ik weet dat je zo trots zou zijn als een pauw! Toen ik mijn bachelordiploma kwam laten zien in

het ziekenhuis, moest iedereen het weten, ook de zuster die toen op de kamer was. Je vond het vreselijk dat je niet bij de uitreiking kon zijn in de Hooglandse Kerk. Pa, dit proefschrift is niet alleen voor mij, maar zeker ook voor jou en ma! Kus.

Dank jullie wel allemaal! Het is klaar!!

[1] http://www.cbs.nl/nl-NL/menu/themas/arbeid-sociale-zekerheid/publicaties/artikelen/archief/2014/2014-4185-ta.htm

Curriculum Vitae

Gaby van Kampen was born in Delft on August 2, 1969. She completed her secondary school education at Christelijk Lyceum Delft in 1987. After having pursued several careers with corresponding practice-based trainings and the birth of her two daughters (1996 and 2001), she started the part-time bachelor study Psychology at Leiden University in 2001. In 2010 she obtained her Master's degree in Health Psychology from Leiden University. She wrote her Master thesis on the effectiveness of a treatment program for children 8-12 years with overweight and obesity ('Door Dik en Dun' ['Through Thick and Thin']) under supervision of dr. Paul Kocken at TNO, an independent Dutch research institute. After her graduation she got employed by TNO as research scientist. In 2011 she started her PhD project at TNO as an external PhD student associated to Maastricht University under the guidance of emeritus Prof. dr. Gerjo Kok and associate supervisor dr. Paul Kocken. Gaby presented parts of her PhD project at several conferences and workshops, national as well as international; in addition she took several academic courses on academic writing and statistics. Since 2014 she is a proud and active member of Rotary Club Voorhout, of which she was president in 2017-2018.