Maneuvering through a world of stressors: adolescents' experience of stress, the effectiveness of a psychoeducational program about stress, and the self-perceived need for additional support

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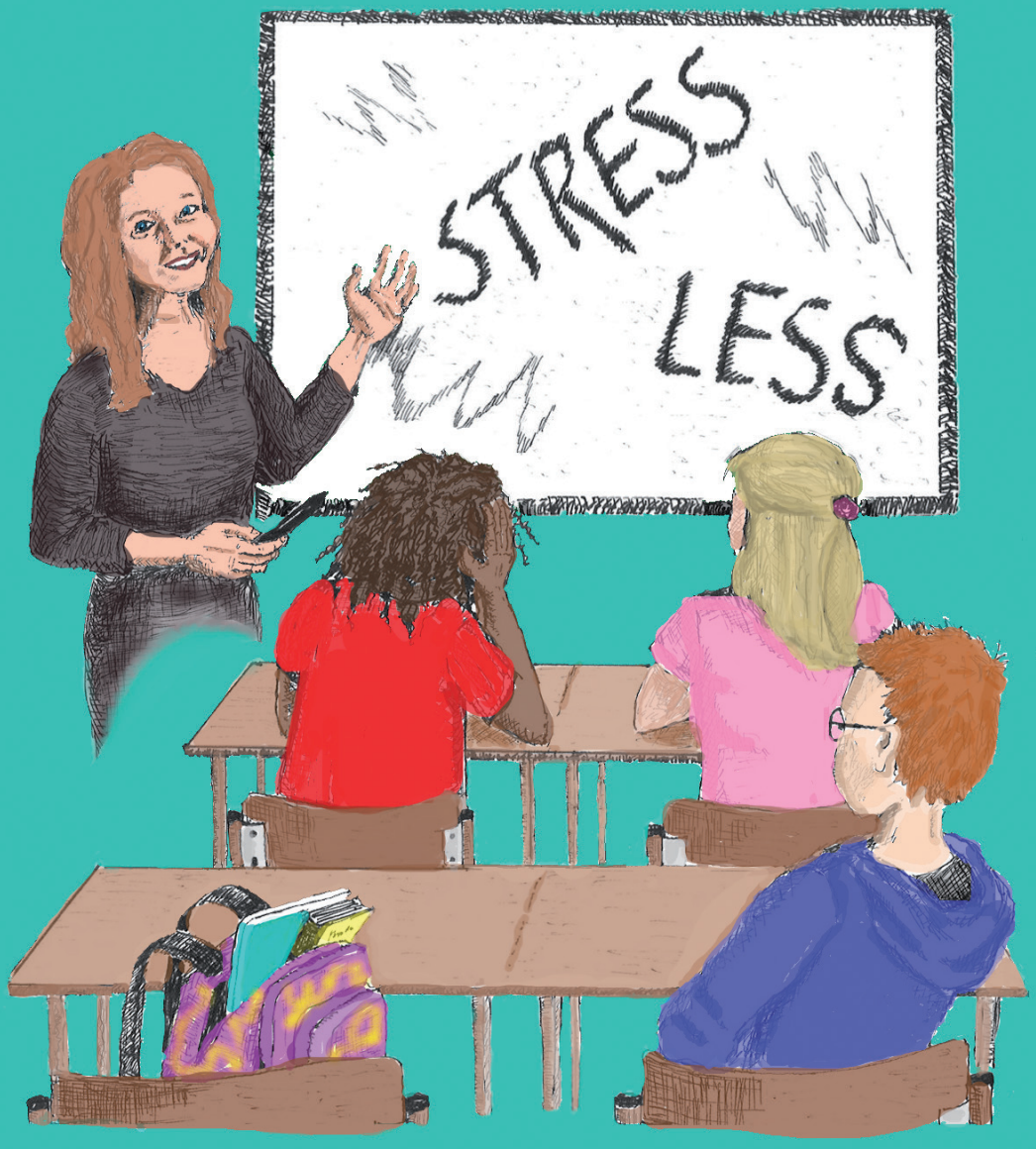

STRESS
LESS

Chapter 1

General Introduction

In the last few years, the extent to which adolescents experience stress has been given a lot of attention in the media and scientific articles (e.g., De Vriendt et al., 2012; Kleinjan et al., 2020; NOS, 2019, 2022; Stevens et al., 2017). Recently, the findings of a large survey among Dutch secondary school students showed that students suffer primarily from achievement pressure (particularly among girls; Kleinjan et al., 2020). Another Dutch study found that between 2001 and 2017, the number of adolescents who experience pressure from school has more than doubled, from 16 to 35 percent (Stevens et al., 2017). There is therefore reason to comprehensively study stress in adolescents. In this context, this dissertation focusses on young adolescents' perceptions of what makes them stressed, whether they profit from a psychoeducation course about stress, and to what extent they report interest in an intervention to reduce performance anxiety or improve social skills. A large and heterogeneous sample was recruited from schools with variation in educational tracks and ethnic backgrounds. This enabled the investigation of differences between demographic groups in terms of vulnerability to particular stressors and the effect of psychoeducation.

Ideally, every adolescent should have access to low-threshold psychosocial support to help deal with mental health issues. In practice, however, adolescents often receive professional help too late and by then, problems may have worsened, which increases the need for intensive, specialized help (Zwaanswijk et al., 2011). Therefore, prevention and early detection of mental health problems are of great importance in order to address these problems and prevent them from worsening (Jorm et al., 1997). As adolescents spend a large amount of their time at school (Eccles & Roeser, 2011), the school context is viewed as a suitable place for prevention and early detection of beginning mental health problems. If problems are detected in an educational context, a good connection with mental health care is required. A connection between education and mental health care entails a framework in which adolescents who are in need of preventive support are detected at school and receive

low-threshold support from a professional. Such a connection is particularly useful for groups of adolescents who normally never seek help or only seek help when they are in need of intensive, specialized help instead of preventive support. However, the majority of adolescents with mental health issues do not receive treatment (Merikangas et al., 2011), indicating that the connection between education and mental health care could be improved.

Response to Intervention model

The Response to Intervention (RtI) Model is a useful framework through which a good connection between education and mental health care can be achieved. The RtI model is designed to allow early and effective referral to interventions according to the level of psychological need (Fox et al., 2010). RtI has three tiers, with increasingly intensive interventions (Searle, 2010). Tier 1 is a universal approach in which all students are exposed to an intervention (e.g., about stress) that promotes awareness, provides knowledge for all adolescents, and potential prevention of mental health issues (Searle, 2010). Additionally, Tier 1 is used to detect adolescents who do not benefit from the knowledge given during the universal intervention (Searle, 2010). According to Searle (2010), universal programs should meet the needs of eighty to ninety percent of adolescents in order to be successful. Approximately five to ten percent of adolescents might need additional support at Tier 2. In Tier 2, targeted interventions are offered, usually in a small group setting. Tier 3, encompassing intensive interventions, is directed towards adolescents with severe or complex problems who require a more individualized program than given in Tier 2. Searle (2010) stated that one to five percent of all adolescents may need additional support with a Tier 3 intervention after Tier 2. In practice, most schools have the opposite approach to the RtI framework: the most time is dedicated to adolescents who need a Tier 3 intervention (van den Essenburg, 2023). Therefore, professionals may miss the signs of early onset of problems in

other adolescents who nevertheless would benefit from a Tier 2 intervention to minimise the problems and prevent them from worsening (van den Essenburg, 2023).

From the RtI perspective we developed a Tier 1 universal psychoeducational program targeting stress for adolescents, the Stress Lessons, in early secondary education. The research reported in this dissertation was carried out in the context of a larger research project comprising two dissertations. This larger project aimed to examine the effectiveness of a Tier 1 Stress Lessons and the effectiveness of Tier 2 targeted school-based interventions in early secondary education. The present dissertation is the result of the PhD project about the Tier 1 Stress Lessons. Adolescents who followed the Tier 1 Stress Lessons (Vogelaar et al., 2023b) were given the opportunity to *self-refer* to one of two Tier 2 level interventions at their school (van Loon et al., 2023). Specifically, adolescents were able to choose between the Tier 2 school-based intervention targeting reduction of performance anxiety or a school-based intervention targeting improvement of social skills. These two skills-intervention programs were pre-selected based on the preferences of the participating schools and because stress about school and social situations are most salient among adolescents (Núñez-Regueiro & Núñez-Regueiro, 2021).

The decision to offer a subsequent intervention at Tier 2 (or Tier 3) is frequently made on the basis of screening instruments and the recommendation of school professionals in consultation with the adolescent's parents (Kearney & Graczyk, 2014; Searle, 2010). A potential advantage of self-referral is that adolescents would be more intrinsically motivated before joining and during the program, which should positively affect the transfer of acquired skills into the real world (Bradley et al., 2012). More motivation during the treatment may lead to better treatment outcomes (Sin & Lyubomirsky, 2009).

We focused on stress for the Tier 1 intervention as this is a phenomenon that most adolescents experience, which can be both functional (Dhabhar, 2009) by making an

individual more alert and motivated (Kumari & Gartia, 2012) and detrimental when experienced for too long and at a high intensity (Dhabhar, 2009). When adolescents experience too much stress, it can have a negative influence on their well-being (Zimmer-Gembeck & Skinner, 2008) and may lead to for example emotional problems (Compas et al., 2012; Kim et al., 2003) or burnout complaints (Gerber et al., 2015). A psychoeducation about stress may help to prevent mental health issues from emerging and beginning issues from worsening.

Adolescence and stress

Stress is defined as a certain feeling one experiences due to demanding situations that exceeds one's personal, psychological, or social resources (Lazarus, 1966). Adolescence is a transitional period from child- to adulthood in which vulnerability to stress increases (Sawyer et al., 2018). Throughout this period adolescents experience various changes, such as physiological (Blakemore et al., 2010; e.g., increase in testosterone and oestrogen production), social (e.g., increased importance of peer relationships (Blakemore, 2008; Sim, 2000), and cognitive (e.g., increased cognitive ability; Yurgelun-Todd, 2007). These changes are necessary for adolescents to become healthy and functioning adults. Yet, these changes can increase the number of stressors adolescents experience (Seiffge-Krenke, 2000). Adolescents are vulnerable to possible stressors during adolescence, as the brain areas sensitive to stress (e.g., prefrontal cortex and amygdala) develop during adolescence (Giedd & Rapoport, 2010; Nelson et al., 2005). The affective areas in the brain (e.g., limbic regions), which determine the emotional value of a stimulus, mature faster during adolescence, whereas the cognitive areas in the brain (e.g., prefrontal cortex), which includes inhibition, have a delayed maturation (Nelson et al., 2005). This imbalance in maturation rate may lead to adolescents' increased sensitivity to stress regarding social evaluation, which makes them

more susceptible to psychological problems, such as an anxiety disorder (van den Bos et al., 2014) or a depression (Andersen & Teicher, 2008).

This increased sensitivity to stress during adolescence is often seen as negative, but stress can be functional (Dhabhar, 2009). Without a fight-or-flight stress response, we would not have a chance to survive dangerous situations (e.g., a person trying to escape someone with a knife). The activation of this fight-or-flight response in the brain ensures that relevant bodily systems are activated (e.g., release of the stress hormones adrenaline and cortisol; Maduka et al., 2015) in response to a stressor (Dhabhar, 2009; Sapolsky, 2009). The activation of this fight-or-flight response leads to increased heart rate, blood pressure (Dhabhar, 2009; Sapolsky, 2009), breathing rate, sharpened senses, and improved memory (Sapolsky, 2009). Where some systems are activated, others are suppressed, like the digestive system, since digestion is less important during a stressful period (Sapolsky, 2009). Overall, the person becomes more alert and is better able to respond to a stressor (Sapolsky, 2009). After the stressor is over, the body returns to its normal state (Sapolsky, 2009). In addition to surviving dangerous situations, a certain amount of stress is also beneficial for academic achievement. For adolescents, it can increase alertness and motivation (Kumari & Gartia, 2012).

When adolescents experience stressors for a prolonged period of time (i.e., chronic stress), it threatens their well-being (Zimmer-Gembeck & Skinner, 2008). When someone experiences chronic stress, certain hormones (e.g., cortisol) are made in such abundance, which can alter the function of brain regions (Ulrich-lai & Herman, 2009) and impact the immune system (Dhabhar, 2009). Eventually chronic stress increase the risk of emotional (e.g., depression, anxiety, and somatic complaints), behavioural (e.g., aggression and conduct problems), competence difficulties (e.g., social and academic competence problems; Compas et al., 2001).

Stress can be attributed to a number of different sources, or stressors. Sources of stress that are most salient (i.e., defined as commonly occurring and intense) to adolescents are related to social relationships (e.g., problems with parents, peers, romantic relationships, teachers), their own or other person's welfare (e.g., their own or a family members' health problems, parental separation), and school (e.g., future uncertainty, academic difficulties (Núñez-Regueiro & Núñez-Regueiro, 2021). Less salient sources of stress are financial problems, parental work difficulties, feeling left out by peers, and school trouble (Núñez-Regueiro & Núñez-Regueiro, 2021).

Stress and stressors can be measured in a variety of ways, for example with a self-reported questionnaire. A commonly used questionnaire that assesses overall stress and experienced stressors in the lives of adolescents is the Adolescent Stress Questionnaire – Short (ASQ-S; Anniko et al., 2018). The ASQ-S consists of 27 items, covering nine subscales (Anniko et al., 2018), focusing on three main areas: school, family, and personal life (Byrne et al., 1995). The present dissertation employed the ASQ-S to comprehensively investigate which stressors adolescents experience, as a means to examine the effect of the Tier 1 Stress Lessons program on stress levels, and as a means to examine whether self-reported stress levels predicted the willingness to self-refer.

Psychoeducational program 'Stress Lessons'

The current dissertation aimed to examine the effectiveness of the Tier 1 Stress Lessons in terms of knowledge about stress and experienced stress. The Stress Lessons have four different aims: 1) providing *knowledge* about stress, 2) enhancing *awareness* regarding stress in students' body through playing stress games, and 3) knowing what adolescents can do to *cope with and prevent* stress, and 4) to motivate adolescents to *seek help* if needed. To broaden the knowledge of adolescents, several topics were covered during the Stress Lessons,

such as a definition of stress, the experienced stressors, symptoms of stress, possible coping strategies, and when a stressor is good and when it is bad for one's health.

Second, to teach students how they can recognize stress in their own body (Bruce, 2009), we induced stress through stress games. For example, the students build a house of cards. To increase the pressure, the teacher tells the adolescents that the group with the highest house of cards wins a prize and that the group with the lowest house of cards has to sing a song. In addition, the adolescents have only two minutes to do so. After two minutes, the teacher asks the adolescents what they felt (e.g., higher heart rate or breathing rate), thought (e.g., 'I can do it' or 'it is too difficult, I give up'), and did while making the house of cards (e.g., continue trying or giving up), enabling them to talk about their physical symptoms and coping behaviour.

Third, in the Stress Lessons, adolescents learned how to prevent and cope with stress. The stress management techniques that adolescents were taught, were progressive muscle relaxation exercises (Pawlow & Jones, 2002; Varvogli & Darviri, 2011), changing a negative thought into a positive one, based on the principles of cognitive behavioural therapy (Varvogli & Darviri, 2011), and a deep breathing exercise (Varvogli & Darviri, 2011). Moreover, adolescents did an exercise where they should not think of the pink elephant (Lakoff, 2014). The main message of this exercise is that if they are discouraged to think about something, they will automatically think about that. Therefore, it is better to think about something positive. For example, when adolescents are afraid to stumble over their words during a presentation, it will not help to think "I should not stumble over my words", because it is more likely to happen. It is better to think positively, such as "my presentation will go just fine". Lastly, students received tips during the Stress Lessons how to prevent stress (e.g., stop postponing tasks or stop multitasking) and how they could maneuver well through stressful

situations (e.g., listening to music, laughing, and seeking social support; Bruce, 2009; Lohaus, 2011).

The last aim of the Stress Lessons was to motivate adolescents to seek help if needed. During the Stress Lessons, adolescents were motivated to think about their own stressors, how much stress they experience of that stressor on a scale, and how they might cope with their stressor. The idea is that adolescents become aware of their own stressors and that they could estimate whether they needed more help after the Stress Lessons. Educating adolescents about stress, might help adolescents to recognize symptoms of mental health issues (Gulliver et al., 2010) or appraise the symptoms as something to seek help for (Rickwood et al., 2007). Moreover, education might lead to having more knowledge about mental health services and their purposes (Fortheringham & Sawyer, 1995). For example, adolescents might have less concerns of confidentiality and fear of what the service will do after gaining more information (Donald et al., 2000). While we did not educate adolescents about the mental health services during the Stress Lessons, we did offer adolescents to self-refer to a school-based intervention directly after the Stress Lessons. Additionally, adolescents experience less stigma and embarrassment about their mental health issues after they gain more knowledge about mental health (Gulliver et al., 2010), as universal interventions normalize a mental illness (e.g., anxiety disorder) and encourage students to engage in activities that promote mental well-being (Stephan et al., 2007).

The implementation of the Stress Lessons was a close collaboration between the researchers and the nine secondary schools. During the implementation, regular meetings were scheduled with the schools and decisions were made collaboratively. Also, several evaluation moments with teachers and adolescents were used to improve the Stress Lessons. For example, during an evaluation about the Stress Lessons, mentors of the school said that the theory was too difficult in some classes. Therefore, three different versions of the Stress

Lessons were created for three different educational tracks (i.e., practical, pre-vocational, and senior general / pre-university education). The different topics were all discussed in the different versions for the standardization of the research, but the amount of theory differed. The Stress Lessons were mostly given during mentor lessons, as we did not want to keep adolescents in school during their free time and we did not want adolescents to miss other classes. Moreover, the Stress Lessons were given by the PhD candidates, trained students, and, at one of the nine schools, trained school mentors.

Effectiveness of school-based psychoeducation targeting stress and self-referral to a Tier 2 targeted intervention

During their school period, adolescents learn different subjects (e.g., math, English, history). However, in the Dutch education context, it is unusual to teach about psychological principles, such as stress, even though a school-based psychoeducation program can help adolescents to gain more information about mental health and to learn more about adaptive coping strategies in order for adolescents to maneuver through stressful situations. Coping strategies are established and stabilized during adolescence, and adaptive coping behaviour is associated with a decrease in mental health issues over time (Syed & Seiffge-Krenke, 2015). Hence, school-based psychoeducational programs about stress may be particularly promising for students to become aware of their stress levels and to seek preventive support if needed (Milin et al., 2016). In a psychoeducational program teaching and knowledge transfer should be key (van Daele et al., 2012).

Knowledge about the effectiveness of such programs in terms of gained knowledge and impact on stress levels is scarce, in particular for a short universal psychoeducational program about stress aimed at adolescent samples with a randomised controlled trial design. Previous studies reported increases in factual knowledge about stress (Varlow et al., 2009) and self-

perceived increases in knowledge about stress (Shapiro et al., 2016). However, neither study included a control versus intervention condition.

Regarding change in stress levels, van Daele and colleagues (2012) conducted a meta-analytic review focusing on the effectiveness of psychoeducation programs on managing stress in the general population (age range 11 - 44 years). The interventions showed mixed results regarding the effect on stress; small increases as well as large decreases in stress after psychoeducation were found. However, none of the psychoeducation programs in the meta-analytic review of van Daele and colleagues (2012) randomly allocated participants to the intervention versus control conditions, together with an adolescent sample, and a relatively short psychoeducation program. Therefore, no firm conclusions can be drawn from previous studies regarding the effect on stress levels after a psychoeducation program about stress.

We were interested what factors would affect self-referral to mental health programs offered in school. To the best of our knowledge no study to date directly asked adolescents whether they would want to participate in an available school-based intervention targeting mental health. Therefore, we investigated to what extent adolescents self-refer to a Tier 2 targeted intervention in the school context. Moreover, we examined whether this self-referral likelihood is influenced by attending the Stress Lessons program, by demographic or intrapersonal factors, and by combinations of intrapersonal factors and having attended the Stress Lessons or demographic factors. Adolescents were asked during the post-test whether they would like to self-refer to a Tier 2 targeted intervention. Participants were given the following answer options: (a) overcoming your school stress intervention program (i.e., school-based intervention targeting reduction of performance anxiety), (b) me and the other intervention program (i.e., school-based intervention targeting improvement of social skills), (c) I do not know which of the two interventions I would like to follow, or (d) no intervention.

Demographic groupings and vulnerability to stress: gender, educational track, and ethnic background

In order to develop effective intervention programs and select the best program for a specific population, it is important to investigate moderators of experienced stress and program effectiveness (Kraemer et al., 2002). In this dissertation we therefore investigated experienced stress, the effect of a psychoeducational program about stress, and the self-perceived need for additional support in three demographic groupings: gender, educational track, and self-perceived ethnic background. Moreover, more knowledge about which demographic variables influences adolescents' decision to self-refer could help tailor the self-referral procedure.

Gender

We investigated whether gender differences were present in experienced stress, the effect of a psychoeducational program about stress, and the self-perceived need for additional support. Several studies have reported gender differences in overall stress and salient stressors. Studies consistently show that girls report higher levels of stress than boys about home life, school performance, peer pressure, future uncertainty, and school / leisure conflict (Byrne et al., 2007; De Vriendt et al., 2012). Moreover, gender moderator tests reveal mixed findings for the effectiveness of a psychoeducational program about stress. Whereas Shapiro and colleagues (2016) and Varlow and colleagues (2009) did not find gender differences in knowledge gain, van Daele and colleagues (2012) did report that women benefited more from psychoeducational intervention in terms of stress reduction. The extent to which adolescents seek help appears to be influenced by gender. Studies found that girls have greater intention to seek help when they need support than boys (Barney et al., 2006; Campos et al., 2018; Donald et al., 2000; Guo et al., 2016; Haavik et al., 2019; Mackenzie et al., 2006; Oliver et al., 2005). An explanation for this finding might be that boys tend to use coping defence strategies such

as denial and avoidance, while girls tend to express their feelings and seek social support (Donald et al., 2000).

Educational track

In the Netherlands, adolescents transfer from primary to the secondary school context around the age of 12. Previous studies found that this transition appears to be quite stressful for some adolescents (Nowland & Qualter, 2019; Sirsch, 2003) due to the new social environment and the new system where adolescents have multiple teachers instead of just one or two (Blakemore, 2019). Girls compared to boys seem to experience the transition as more stressful (Suldo & Shaunessy-dedrick, 2013). Therefore, in this dissertation we focused on adolescents who just started secondary education. In the last year of primary school, adolescents receive an advice for an educational track. Adolescents are streamed into one of the following educational tracks: practical education, pre-vocational education, senior general education, and pre-university education; Driessen & van Langen, 2013). Both practical and pre-vocational education lasts four years (Maslowski & van der Werf, 2017). Practical education prepares adolescents to start working directly after secondary school (Maslowski & van der Werf, 2017) and pre-vocational education gives access to the senior vocational education. Senior general education lasts five years, which gives access to higher professional education and pre-university education lasts six years and gives access to university (Jeliazkova & Westerheijden, 2004). Throughout the dissertation, two educational tracks were used: academic education (i.e., senior general and pre-university education) and vocational education (i.e., practical and pre-vocational education).

We examined the experienced stress, the effect of a psychoeducational program about stress, and the self-perceived need for additional support across educational tracks. Previous studies did examine potential differences in salient stressors from different educational tracks, but this was not examined, to date, for overall stress levels. Studies found that adolescents

following academic education reported more school pressure (Kleinjan et al., 2020; Stevens et al., 2017; Suldo et al., 2009), an accumulation of stressors (e.g., school, homework, social media, work, and sports; Kleinjan et al., 2020) than adolescents following vocational education. Adolescents following vocational education reported higher levels of stress associated from a variety of stressors, including stressors at school, from family and peers (Suldo et al., 2009) than adolescents following academic education. Regarding the effectiveness of the psychoeducational program, to date, no differential effects have been examined for educational tracks. Hence, the current dissertation aimed to fill this gap by examining the effectiveness of the Stress Lessons across eductional track groups. Moreover, one study reported that the extent to which adolescents seek help appears to be influenced by educational tracks. Haavik and colleagues (2019) found that adolescents who followed academic education reported that they made more use of mental health services than adolescents from vocational education.

Self-perceived ethnic background

As 28 percent of adolescents between the 10 and 15 years old has a migration background (Central Bureau of Statistics, 2023), adolescents with a variety of ethnicities are present in the classroom. The differences in values, norms, and habits between the culture of the country of origin and the culture of the country can be large (Stevens et al., 2017), which may lead to cultural misunderstandings within the classroom (Thijs et al., 2012). Therefore, studying the stress levels across ethnic background groups is important.

Inter-individual differences between self-perceived ethnic backgrounds were examined for experienced stress, the effect of a psychoeducational program about stress, and the self-perceived need for additional support. Self-perceived ethnic background represents the feeling of belonging to a specific ethnic group due to similarities in customs, history, and religion (Burchard et al., 2003). Throughout the dissertation, three groups were used: (a)

Dutch, (b) non-Dutch (e.g., Moroccan), and (c) mixed (e.g., Moroccan-Dutch). For experienced stress, contradictory findings were reported in the literature regarding ethnic background. A Dutch study examining self-reported overall stress in 705 adolescents from various ethnic backgrounds (i.e., Dutch, non-Dutch, and mixed) found no differences in the overall stress levels between the ethnic background groups (Vollebergh & Huiberts, 1997). Another Dutch study including 6718 adolescents found that adolescents whose parents migrated to the Netherlands can experience acculturative stress, as the differences in values, norms, and habits between the culture of the country of origin and the culture of the country they live in can be large, which may lead to more conflicts at home, prejudices, and discrimination (Stevens et al., 2017). In contrast, a meta-analysis including 83 studies found that having a mixed ethnicity was more positively related to psychological and sociocultural-related adjustment than having non-mixed ethnicity (Nguyen et al., 2013). The current dissertation aimed to fill the gaps in the literature in terms of knowledge regarding overall stress levels and experienced salient stressors in adolescents from ethnic background. Regarding the effectiveness of the psychoeducational program, to date, no differential effects have been examined across ethnic background groups. Hence, the current dissertation aimed to fill this gap by examining the effectiveness of the Stress Lessons across ethnic background groups. The extent to which adolescents seek help appears to be influenced by adolescents' ethnicity. A review by Rickwood and colleagues (2007) revealed that young people between 12 and 24 years old from ethnic minority groups tend to be more reluctant to seek help than adolescents from majority groups. This can be for example influenced by the family obligations, as adolescents in minority groups with a strong sense of family obligation may be hesitant about placing their own needs over those of the family (Telzer & Fuligni, 2009). In the current dissertation, we examined whether the same outcome is present for self-perceived ethnic background.

Outline and objectives of dissertation

The present dissertation investigated adolescents' overall stress and stressors, the effectiveness of a universal psychoeducational course about stress, and adolescents' self-referral to a targeted school-based intervention. Figure 1 presents the conceptual model of the present dissertation. For **Chapters 2 and 3**, the ASQ-S was filled in by a large and diverse adolescent sample in terms of educational tracks and ethnic backgrounds to examine the psychometric properties and the experienced overall stress and salient stressors. **Chapter 2** starts by investigating the applicability of the ASQ-S. Specifically, measurement invariance of the ASQ-S across gender, educational tracks, and self-perceived ethnic background groups was investigated. In **Chapter 3**, the ASQ-S is used to identify overall stress and salient stressors experienced by adolescents from different educational tracks and self-perceived ethnic background. For **Chapter 4 and 5**, a randomised controlled trial including a pre-test – post-test design was conducted. Figure 2 presents the research design of the current dissertation. The experimental condition received the Stress Lessons between the pre-test and post-test and the control condition received the Stress Lessons after the post-test. During the post-test measurement, adolescents were asked to self-refer to a targeted school-based intervention. In **Chapter 4,** the effectiveness of the Stress Lessons was evaluated in terms of knowledge and experienced overall and school-related stress across gender, educational tracks, and ethnic backgrounds. In **Chapter 5**, we examined to what extent early adolescents self-refer to available school-based intervention programs (when offered at school). Moreover, we examined whether this self-referral likelihood is influenced by attending a psychoeducational program about stress, the Stress Lessons program, whether self-referral is affected by demographic (i.e., gender, educational tracks, self-perceived ethnic backgrounds) or intrapersonal factors (various self-reported mental health indicators), and combinations of intrapersonal factors and having followed the Stress Lessons or demographic factors. Finally,

in **Chapter 6**, the main results of the studies presented in this dissertation are discussed and put in a broader perspective from a theoretical, methodological, and school perspective. Directions for future research are also discussed.

Figure 1

Conceptual model of the present dissertation

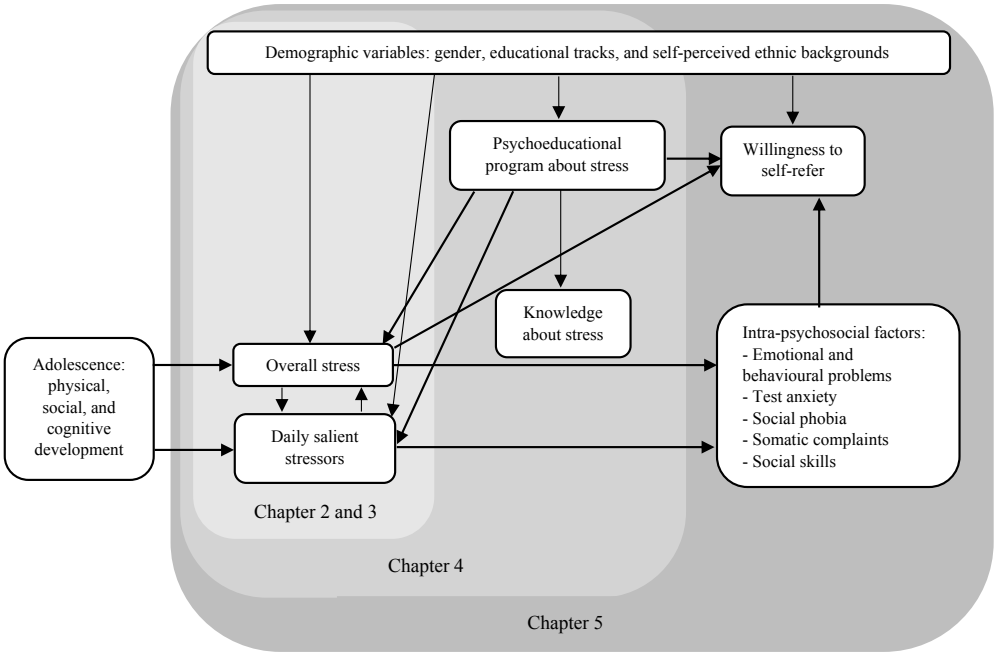
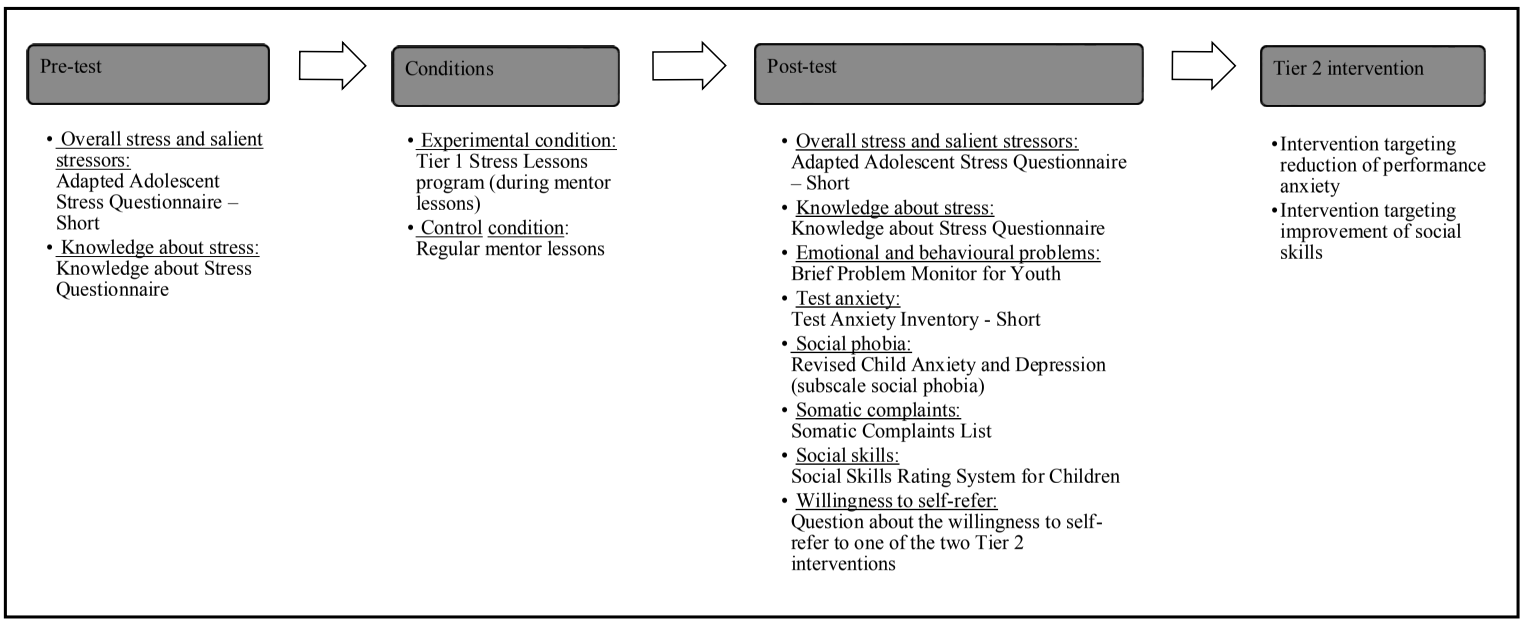


Figure 2

Design of the present dissertation



Note. School classes were randomly assigned to either an experimental or a control condition. Adolescents in the experimental condition received the Stress Lessons between the pre- and post-measurement. Adolescents in the control condition received the Stress Lessons after post-measurement. The present dissertation entails the pre- to post-measurement (including the willingness to self-refer to a Tier 2 intervention for both conditions). The Tier 2 intervention falls thus outside the scope of the present dissertation.