

Effectiveness of a Brief School-Based Stress Management Program for Adolescents

Amy J. Shapiro

Department of Educational and Counselling Psychology

McGill University, Montreal, QC

“Special Project” report submitted in partial fulfillment of the requirements for the

Degree of Master of Education in Educational Psychology

© 2013, Amy J. Shapiro

Abstract

Recent literature has shed light on adolescent stress as a risk factor for poor mental health (Murray, Byrne, & Rieger, 2011). There is growing evidence that the school may play an important role in addressing stress-related problems in youth by providing equal access to treatment (e.g., reducing barriers such as cost and transportation) (Lock & Barrett, 2003). While school-based stress reduction programs may help offset the negative effects of stress, existing programs are often difficult to implement as they demand additional time and personnel resources schools do not often have (Fridrici & Lohaus, 2009). The current study reported on students' stress, including pre- and post-program reports of acquired knowledge and willingness to use stress management techniques following a single-session, universal, adolescent-targeted stress management program, developed for delivery by school personnel (StressOFF Strategies; Shapiro & Heath, 2012). Grade 9 students ($n = 218$; 56% female, 44% male) were recruited from schools to participate in the study. Students were interested in learning about stress management and reported high ratings of program satisfaction, with relatively high rates of understanding and likelihood of using the strategies taught. Further research is necessary to validate whether effects can be maintained following participation in the program.

Keywords: stress management, adolescents, school-based intervention

Contributions by others to the project

This project incorporates some material that is result of collaborative work with Tina Hu, MSc, and Nancy Heath, PhD. Dr. Heath played an integral role in putting forth the idea of this project and in the subsequent creation of StressOFF Strategies: A stress management workshop for teens. Other contributions by the co-authors were primarily through data analyses. The writing of the ethics, arrangement, coordination and supervision of all the workshops were executed by the primary author, who also was responsible for data collection and entry.

The current project is expected to result in a conference presentation and a manuscript for submission. The primary author of the special project will be first author on both these products.

Acknowledgements

This project could not have been possible without the collaboration and invaluable guidance provided by my supervisor and mentor, Dr. Nancy Heath.

I also owe my deepest gratitude to my colleague, Tina Hu, for her hard work and dedication to this project.

To my family, Mira & Addison, and MK—your unwavering support throughout this entire process has been a gift that I will forever cherish.

Table of Contents

	Page
Abstract	2
Contributions by others to the project	3
Acknowledgements	4
Review of the Literature	6
Method	21
Participants	21
The program	22
Procedure	22
Measures	23
Results	25
Discussion	45
Limitations and final conclusions	49
References	50
Appendix A	57
Appendix B	58
Appendix C	59
Appendix D	63
Appendix E	64
Appendix F	67

Review of the Literature

Introduction

Today's youth are reporting increased levels of stress. In a recent survey, 45% of American youth aged 13 to 17 reported experiencing higher levels of stress when asked to compare their current stress level to that of the previous year. Of the youth surveyed, 43% attributed academic pressure to a major source of personal stress, followed by family financial difficulties (31%), and anxiety about the future (29%) (American Psychological Association, 2009). While adolescent stress has often been cited as a risk factor for poor mental health (Murray, Byrne, & Rieger, 2011), there is evidence that one's ability to effectively manage stress is strongly related to his or her psychological adjustment (e.g., Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001). The teaching of coping skills is therefore an integral part of any stress management intervention (Pincus & Friedman, 2004).

In recent years, the school has gained increased support as a setting for promoting mental health in youth (Frydenberg et al., 2004). Consequently, efforts have been made to transport clinic-based treatment to the school setting in the form of school-based prevention programs. While these programs may offset the negative effects of stress, they are often difficult to implement as they demand additional time and personnel resources schools are often lacking (Fridrici & Lohaus, 2009). To resolve some of these issues, brief school-based programs have been proposed by researchers as an alternative to traditional school-based programs (e.g., Balle & Tortella-Feliu, 2010; Pincus & Friedman, 2004); however, these programs are still considered lengthy, often running several weeks long.

Most stress management programs to date promote resilience through the teaching of coping skills borrowed primarily from cognitive behavioral interventions. While cognitive

behavioral therapy (CBT) maintains its title as the dominant treatment modality for a range of disorders in both an individual therapeutic context and in the school setting, mindfulness and acceptance-based interventions (MABIs) have recently grown in popularity and are consistently receiving support as an effective treatment for stress and stress-related disorders (Vøllestad, Nielsen & Nielsen, 2011). Several school-based programs using MABIs do exist (e.g., Learning to BREATHE; Broderick & Metz, 2009, Minding the Mind; Compion & Rocco, 2009); however, research examining the effectiveness of such interventions, particularly among adolescents, is still in its infancy (Schonert-Reichl & Lawlor, 2010).

The following paper begins with a brief review of the theoretical underpinnings of adolescent stress, followed by a rationale for universal school-based interventions. Several school-based stress management programs for youth will then be reviewed. A description will be provided of a brief school-based stress management program incorporating both cognitive-behavioral and mindfulness and acceptance-based strategies, and preliminary results of a study of student stress and evaluation of the program for 218 participants will be shared.

Theoretical Background: Stress and Coping

While adolescent stress is reportedly on the rise, there is suggestion that one's capacity to employ effective coping strategies may mitigate the impact of stress on adjustment and psychopathology (Compas et al., 2001). Central to the research on stress and coping is Lazarus and Folkman's (1984) cognitive appraisal theory (Pincus & Friedman, 2004). According to this theory, stress is defined as "[...] a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (Lazarus & Folkman, 1984). This transactional relationship is mediated by the individual's appraisal of what is at stake and an evaluation of his or her

coping resources. Coping efforts are then employed in response to one's appraisal of the existing stress. Such efforts fall into two general categories, as put forth by Folkman and Lazarus (1980): (1) 'problem-focused' coping' and (2) 'emotion-focused' coping. The first refers to cognitive problem-solving and behavioral efforts to manage the source of the problem by altering the environment or by seeking resources to allay the threat of the situation. The second refers to cognitive and behavioral efforts to regulate emotional distress evoked by the problem. Cognitive distraction, cognitive restructuring, emotional regulation and selective attention are examples of strategies that can be employed to manage distress (Pincus & Friedman, 2004). By and large, adaptive problem- and emotion-focused coping are indicative of better psychological adjustment (Hampel, Meier & Kummel, 2008) whereas poorer psychological adjustment is associated with maladaptive coping strategies (e.g., cognitive and behavioral avoidance, social withdrawal, emotional ventilation and self-criticism) (Compas et al., 2001).

Earlier research by Folkman and Lazarus (1980) suggests that one's coping style may vary according to the context of the stressful episode. Results from an adult sample revealed that problem-focused coping was employed in response to work-related contexts while emotion-focused coping strategies were preferred in health-related contexts. Research has demonstrated that youth also employ different coping strategies depending on the demands of the stressful situation encountered (Pincus & Friedmann, 2004). For example, Hampel and Petermann (2005) examined whether developmental differences would affect situation-specific coping in two stress domains: (a) academic stressors and (b) interpersonal stressors. While inconsistent developmental differences were reported, results showed that when confronted with academic stressors, youth engaged in significantly more problem-focused strategies (e.g., support seeking) than when confronted with interpersonal stressors. Controllability of the situation may influence

one's coping style, where problem-focused strategies may be favored in response to situations where it is perceived that something constructive can be done while emotion-focused strategies are favored when coping with situations that are deemed uncontrollable and must therefore be accepted (Folkman & Lazarus, 1980).

There is evidence in the research that coping strategies vary according to gender and age. In an earlier study, Nolen-Hoeksema, Larson and Grayson (1999) suggested that females were more prone to experience more rumination and less mastery over stressful situations, making them more vulnerable to depressive symptoms in comparison to their male counterparts. This finding was supported by results from Hampel and Petermann (2005), who showed that girls, aged eight to 14 years exhibited decreased emotional regulating strategies (e.g., minimization and distraction/reaction) and increased maladaptive emotion-focused coping strategies (e.g., rumination and resignation). On the other hand, boys have been found to employ emotion-distraction coping strategies, which encourage problem-focused coping and provide a sense of control over the environment. While such strategies are considered positive in that they have been associated with a decrease in non-depressive symptoms, it has been suggested that emotion-distraction strategies may lead to increased aggression and conduct problems brought on as a result of boys' desire to achieve control over their environment (Compas, Orosan, & Grant, 1993). This finding was supported by results from Calvete and Cadenoso (2005) who showed that delinquent behavior in youth aged 14 to 17 was partially attributed to an impulsive style of problem solving among males.

Coping also varies according to age. For example, there is evidence that problem-focused strategies are generally used by young children while emotion-focused strategies are acquired in late childhood and early adolescence (Pincus & Friedmann, 2004). Hampel and

Petermann's (2005) study support this assumption, claiming that problem-based strategies (e.g., support seeking and positive self-instruction) are developed in early childhood, yet taper off in early adolescence. The researchers found that the use of distraction or reaction as a coping strategy decreased with age whereas maladaptive coping strategies (e.g., rumination and aggression) increased from childhood to adolescence—a finding that sheds light on the insufficient coping capacity of youth in early to middle adolescence.

Rationale for School-Based Interventions

Given the decrease in adaptive coping and increase in maladaptive coping strategies in middle adolescent years (Frydenberg & Lewis, 2000; Hampel & Petermann, 2005, 2006), there is a need for adolescent-targeted programs to promote adaptive coping through the teaching of effective coping skills (Frydenberg & Lewis, 2000). The school has been proposed as an appropriate site to implement such programs, due in part to the frequency of which youth in this age group are reporting school-related stressors (de Anda, 1997). Nevertheless, the school provides favorable conditions in which stress and stress-related conditions can be addressed in order to prevent the onset or worsening of such difficulties. First, the school provides an avenue where a large number of young people can be reached, as the vast majority of youth attend public and private schools (Huberty, 2012). Moreover, in such a setting, access to treatment is maximized as common barriers to treatment (e.g., costs and transportation) are reduced (Lock & Barrett, 2003). In addition to increased access to care, providing treatment to youth in which they typically experience their greatest difficulties allows them to apply what they have learned to real-world situations (Fisher, Masia-Warner, & Klein, 2004).

In the current literature, interventions are classified as universal, selective or indicated. Universal interventions involve all individuals in the targeted population, selective interventions

are directed at students who are at risk of developing a disorder, while indicated interventions only target students who meet the diagnostic criteria for a disorder (Angelosante, Colognori, Goldstein, & Masia-Warner, 2011; Gordon, 1987; Institute of Medicine, 1994). Universal interventions have numerous benefits when implemented in school-based settings. First, despite the reported prevalence of school-related stressors, many students suffering from stress and stress-related disorders fall under the school's radar, since more often than not, there is a much greater need to address and prevent overt behavioral problems that disrupt the smooth functioning of the classroom setting (Fisher, Masia-Warner, & Klein, 2004; Weems et al., 2010). By targeting a broad range of students, universal interventions ensure that equal access to treatment is provided for all.

There are also other advantages associated with universal school-based prevention programs. Such programs may minimize difficulties with screening, recruitment (Lock & Barrett, 2003), and prevent problems such as low participation and retention rates (Shochet et al., 2001). Moreover, when implemented universally, school-based prevention programs aid in decreasing stigma (Lock & Barrett, 2003) and help avert potentially negative peer consequences likely to accompany the experience of being targeted for a particular intervention (Weems et al., 2010).

Barrett and Turner (2001) and Lowry-Webster, Barrett and Dadds (2001) conducted some of the first studies examining school-based universal programs for the prevention of mental health disorders (Miller, 2008). Both teams successfully implemented FRIENDS (Barrett, 1998), a universal school-based program targeting anxiety and depression in children. Overall, significant gains were noted in each study, as participants reported fewer symptoms on follow up measures. Specifically, Lowry-Webster et al. (2001) examined pre- and post-intervention

changes universally and for those who met the criteria for anxiety and depression in children aged 10 to 13 years ($n = 594$). Children who participated in the 10-session FRIENDS program compared to children in a control group, indicated fewer anxiety symptoms according to self-report on the Spence Children's Anxiety Scale, regardless of their risk status (SCAS; 1994, cited in Spence 1997). Lowry-Webster, Barrett and Lock (2003) noted that intervention gains had been maintained, a finding supported by results from self-reports and diagnostic interviews at 12-month follow up. Eighty-five percent of the children who had been assigned to the intervention group, and who had met the criteria for anxiety and depression, were found to be diagnosis-free in comparison to 31.2% of children in the control group.

In a later study, Barrett, Lock and Farrell (2005) compared the effects of the FRIENDS program at the elementary and secondary level. Grade 6 ($n = 293$) students aged 9 to 10 years, and Grade 9 ($n = 399$) students aged 14 to 16 years were assigned to either the FRIENDS program intervention or to a control condition. Post-assessment results showed that Grade 6 participants demonstrated more significant reductions in anxiety in comparison to Grade 9 participants; however, at a 12-month follow up, equal reductions were indicated at both the elementary and secondary level. Overall, results from the studies briefly reviewed above support the benefits of universal programs at the school level. An investigation of the components of the FRIENDS is warranted to gain a better understanding of the success of the program.

FRIENDS: A Cognitive-Behavioral Intervention

Kendall's Coping Cat Program (1990) largely influenced the development and structure of the FRIENDS program. Kendall (1994)'s study was the first to investigate the effectiveness of a cognitive-behavioral program in a sample of youth with anxiety disorders (Lowry-Webster et al., 2001). Forty-seven children (aged nine to 13 years) were recruited for the study. Twenty-

seven received the treatment while the remaining 20 formed the wait-list condition. Results revealed that those who completed the 16-session treatment program demonstrated clinical improvement compared to those in the wait-list condition. Specifically, at post assessment, 64% of the participants who had received the treatment were reported to be without a diagnosis. At 12-month follow up, intervention gains were maintained. While Kendall's study is the first of its kind, the majority of subsequent clinical trials comparing CBT treatment to wait-list conditions yielded overwhelmingly positive results, thus validating the therapeutic gains and long lasting effects of this treatment with young people (Miller, 2008).

CBT is an evidence-based, symptom-focused treatment approach rooted in both cognitive therapy and behavior therapy (Rachman, 1997). CBT is built around the theoretical assumption that an individual's cognitions are largely influenced by previous experiences. Previous experiences may contribute to the development of schemas, which may influence the way individuals interpret future experiences (Beck, Rush, Shaw & Emery, 1979). Therefore, a crucial component of CBT is to identify and correct distorted thinking through a process known as cognitive restructuring (Beck, Emery, & Greenberg, 1985). Nevertheless, CBT is not limited to cognitive modification (Hofmann & Asmundson, 2008); rather, this treatment approach endorses both problem- and emotion-focused coping through the teaching of cognitive, behavioral and social strategies deemed necessary to effect change (Kendall, 2012). Accordingly, CBT treatment programs for anxiety generally touch upon five components: Psychoeducation, relaxation techniques, cognitive modification, exposure and relapse prevention.

Psychoeducation helps individuals understand anxiety as a normative experience comprised of physiological, behavioral and psychological components. Relaxation techniques help individuals learn how to manage the unpleasant physiological responses that accompany anxiety. Exposure

techniques involve progressively and systematically exposing individuals to feared stimuli and finally, relapse prevention methods ensure that individuals have learned the necessary skills to manage their anxiety, and can generalize them to everyday situations to prevent recurrence of symptoms and ensure the maintenance of treatment gains (Albano & Kendall, 2002).

The FRIENDS program is a cognitive-behavioral intervention designed to help children and youth develop effective coping strategies to manage situations that are difficult and/or anxiety provoking in nature. The FRIENDS Program addresses the three major processes associated with stress and anxiety (e.g., cognitive, physiological and behavioral), and provides skill instruction in each domain. FRIENDS teaches cognitive skills (e.g., positive self-talk and self-reward), physiological skills (e.g., relaxation and deep breathing) and behavioral skills (e.g., problem solving and reward systems) (Barrett, 2005).

Given the strong evidence of its effectiveness, CBT has been the leading treatment in anxiety disorder interventions, a finding supported by Fisak and colleagues. Recently, Fisak et al. (2011) conducted a meta-analytic review of 31 studies evaluating child and adolescent anxiety prevention programs. Out of the 31 studies reviewed, 25 evaluated prevention programs that used cognitive-behavioral techniques, with the FRIENDS program yielding the greatest overall effects (Schwartz et al., 2012). In addition to anxiety disorder interventions, CBT has also been used in interventions targeting depression (e.g., Gillham et al., 2006), and is increasingly used in stress management programs (e.g., de Anda, 1998; Frydenberg, 2004; Hampel et al., 2008).

Cognitive Behavioral School-Based Stress Management Programs

In an earlier study, de Anda (1998) evaluated the effectiveness of a 10-week cognitive-behavioral stress management program for middle school adolescents based on an earlier, abridged program that had been developed for, and implemented with pregnant teens (de Anda,

Darroch, Davidson, Gilly & Morejon, 1990). Of the 54 adolescent participants, 36 received the intervention and 18 participants served as controls. The intervention consisted of a psychoeducational component, in which they were taught to recognize the signs and symptoms of stress and to tell apart adaptive and maladaptive stress responses. The cognitive and physiological components focused on the identification of participants' cognitive and physiological reactions to stress, followed by instruction of a "Calm Body, Clear Mind" method where participants learned how to engage in muscle relaxation and accurate self-talk. Finally, adolescents were instructed on effectively coping with stressful situations through problem solving. In-session practice and homework were crucial components of the intervention. An evaluation of the program demonstrated positive effects, particularly with respect to the development of a coping repertoire as evidenced by reports of greater use of cognitive strategies and the 67.5% improvement in muscle relaxation following guided instruction of the techniques.

Frydenberg et al. (2004) investigated the effectiveness of The Best of Coping Skills Program (Frydenberg & Brandon, 2002), a school-based cognitive-behavioral stress management program delivered in two schools on four different occasions. Participants from the first school consisted of 83 Grade 10 students (39 male, 41 female), and 88 Grade 7 students (49 male, 39 female). The program, integrated into students' pastoral care program, consisted of 10 weekly one-hour sessions that targeted different themes in stress management such as adaptive vs. maladaptive coping, positive self-talk, cognitive appraisal, effective communication, problem solving, goal setting, and time management. Overall, results of the program yielded modest support for the acquisition of effective coping skills, but also caution that gender differences must be taking into account when developing such programs given reports of opposing program effects on males and females. Furthermore, treatment integrity was cited as a potential concern

as greater improvements were noted among students who had received the program from teachers who had been trained by the psychologist than teachers who had not received training.

Hampel et al. (2008) evaluated the effectiveness of Anti-Stress Training (AST; Hampel & Petermann, 2003), a school-based cognitive behavioral stress management program designed for early and middle adolescents. Intervention effects of age and gender on perceived stress, adaptive coping (e.g., distraction and social support), maladaptive coping (e.g., avoidance and rumination), and self-efficacy were examined in a sample of 320 adolescents. One hundred thirty-eight participants received the AST program while 182 participants comprised the no-treatment control group. The AST is a six-week training program addressing subjects related to stress management such as stress theory, coping, recovery activities, positive self-instruction, repetition and consolidation and transfer into daily life. Overall results demonstrated positive treatment effects. Participants in the experimental condition showed improvements in perceived stress, self-efficacy and adaptive coping, whereas no significant changes were noted in the control group. Gender differences in coping were reported with girls demonstrating more maladaptive coping strategies than boys. Finally, age differences were noted with early adolescents demonstrating greater overall improvement than older participants.

Mindfulness and Acceptance School-Based Stress Management Programs

While CBT maintains its title as the dominant treatment modality for a range of disorders in both an individual therapeutic context and in the school setting, Mindfulness and acceptance-based interventions (MABIs) have recently grown in popularity and are consistently receiving support as an effective treatment for stress and stress-related disorders (Vøllestad, Nielsen & Nielsen, 2011).

The development of MABIs was put forth by two separate, yet overlapping trajectories.

In the first trajectory, mindfulness exercises were used as the primary intervention as seen in programs such as Mindfulness Based Stress Reduction (MBSR), developed by Jon Kabat-Zinn (1990) and Mindfulness Based Cognitive Therapy (MBCT) developed by Segal, Williams and Teasedale (2002). In the second developmental trajectory, components of mindfulness and acceptance were integrated into treatment programs such as in Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) and Acceptance Based Behavior Therapy (ABBT) (Vøllestad et al., 2011).

One of the main goals of MABIs is to increase awareness of the present moment with an open and accepting attitude that welcomes all experiences, both positive and negative (Hayes, 2004; Kabat-Zinn, 1990). Efforts to rid oneself of unwanted thoughts, feelings and sensations may in fact have a counteractive effect. Consider, for instance, a metaphor often used in ACT to demonstrate the ineffectiveness of thought control, or what is known in ACT, as experiential avoidance. Individuals are provided with a vivid description of a chocolate cake and are instructed immediately after the description to not think of the food described, naturally leading to increased thoughts of the chocolate cake (Brown et al., 2011; Hayes et al., 1999). Given the contradictory effects of thought suppression, MABIs encourage individuals to adopt a non-judging, present-centered attitude so they can move toward valued goals in spite of the unpleasant feelings experienced in the process (Forman, Herbert, Moitra, Yeomans, & Geller, 2007).

Mindfulness-Based Programs Targeting Mental Health in Schools

Broderick and Metz (2009) evaluated a pilot trial of Learning to BREATHE, school-based program for adolescents designed to cultivate students' development of emotional-regulation and wellbeing through the practice of mindfulness. The program was delivered to 120

students of a private all-girls school as part of their health curriculum while 17 students comprised the no-treatment control group. Learning to BREATHE is a six-session mindfulness program built around the BREATHE acronym. Each lesson contains a different theme, such as body awareness, understanding and working with feelings, and reducing harmful self-judgments. At post-assessment, students who participated in the program reported decreased negative affect, fatigue, aches and pain and increases in feelings of calmness, relaxation and self-acceptance. They also demonstrated greater emotion regulation and awareness of feelings compared to participants in the control group.

Schonert-Reichel and Lawlor (2010) evaluated the effectiveness of Mindfulness Education (ME), a school-based program for pre- and early adolescents developed to promote social and emotional competence and positive emotions through mindful attention training. Two hundred forty-six Grade 4 to Grade 7 participated in the study. One hundred thirty-nine students received the ME program while 107 students comprised the control group. The 10-week program consisted of topics, such as, quieting the mind and focusing on the breath, mindful attention (e.g., paying attention to sensations, thoughts and feelings), and managing negative thoughts and feelings. Participants who received the ME program in comparison to controls demonstrated increased social and emotional competence, as reported by their teachers. Moreover, improvements in positive emotions, namely optimism were noted.

Brown and colleagues (2011) found promising results for MABIs when used to treat test anxiety in college and university students. In Brown et al.'s (2011) study, university students ($n = 16$) who had been screened for test anxiety were randomly assigned to a cognitive therapy (CT) or acceptance based behavior therapy (ABBT) group intervention in the form of a two-hour workshop. The CT treatment condition taught students to engage in cognitive restructuring, a

technique that involves replacing the negative content of one's self-talk with content that is more positive (Vøllestad et al., 2011), to manage their test anxiety. In the ABBT group, cognitive defusion was introduced as an alternative to cognitive structuring. Through cognitive defusion, individuals were shown how to create distance from the negative, distracting thoughts that may impact performance. For example, in order to illustrate cognitive defusion, Brown et al. (2011) implemented the "I'm having the thought/feeling that" exercise from ACT as part of the intervention. In this exercise, participants experienced how adding the sentence, "I'm having the thought" before an actual thought can change its meaning. (e.g., "I'm going to fail the test" would become "I'm having the thought that I'm going to fail the test"). The aim of cognitive defusion is therefore to decrease self-identification with negative thoughts, and to understand that thoughts, feelings and sensations only appear threatening until they are perceived to be what they really are – bits and pieces of language and images (Harris, 2006).

As hypothesized, the ABBT intervention was found to be more effective than CT with respect to test performance and test anxiety reduction. In fact, a slight decline in performance was noted among CT participants, whereas ABBT participants' exam scores significantly improved. The authors suggest that this finding may be due to the fact that efforts to control and restructure negative (e.g., cognitive restructuring) may actually hinder performance due to the amount of time individuals would have to spend repairing negative, distracting thoughts, when full attention should be given to the test itself rather than on the anxious thoughts elicited by the test. Therefore, MABI techniques do not encourage individuals to modify the content of their thoughts, which is often the case with CBT techniques, particularly cognitive restructuring, but rather they encourage individuals to foster a different relationship with their anxiety by promoting distance and objectivity (Hofmann et al., 2010).

Overall, findings from each of the prevention programs reviewed earlier suggest that youth can be taught coping skills to help effectively manage stress. While cognitive-behavioral techniques remain the most extensively researched and practiced treatment modality in mental health prevention, mindfulness and acceptance-based interventions are gaining increased support for the prevention of stress and related disorders and are being used more frequently in stress management interventions (e.g., Broderick & Metz, 2009; Schonert-Reichel & Lawlor, 2010); however, no studies to the authors' knowledge have examined the use of both cognitive behavioral *and* mindfulness and acceptance-based techniques in a school-based stress management program for adolescents.

While the school is gaining increased recognition as an ideal site to implement mental health prevention programs, existing programs are frequently lengthy and require extra time, which schools are often lacking (Fridrici & Lohaus, 2009). Further, the provision of such programs often demands additional personnel resources and special training, which pose added barriers to their implementation (Evans & Weist, 2004). While brief school-based programs exist, these often consist of numerous sessions running over the course of several weeks, which schools are likely to reject due to interference with the curriculum. In the next section, the special project research study evaluating the effectiveness of a brief *single-session* adolescent-targeted, school-based program developed for delivery by school personnel, which incorporates cognitive-behavioral techniques (e.g., cognitive restructuring, progressive muscle relaxation) and mindfulness and acceptance-based techniques (e.g., present-moment awareness) is described.

Effectiveness of a brief, school-based stress management program

Goals of the Study

The first aim of the study was to report on students' stress, knowledge of stress and stress management techniques, including previous stress management instruction. The second aim of the study was to evaluate the stress management program by examining participants' pre- and post-program reports of understanding of stress and stress management and willingness to use stress management techniques, as well as their overall satisfaction with the program. Finally, the third aim of the study was to investigate the role of stress, gender and previous training as predictors of overall satisfaction of the program.

Method

Participants

The overall sample for this study consisted of 218 Grade 9 students (56% female, 44% male). Participants ranged from 14 to 16 years of age ($M = 14.92$, $SD = 0.37$). Participants were drawn from 16 Grade 9 public education classrooms in two secondary schools (Montreal, Quebec, Canada) that had been involved in a longitudinal 3-year study on stress and coping during the transition to secondary school. While only a portion of Grade 9 students completed the 3-year study, *all* Grade 9 students ($N = 404$) were offered and completed a workshop on effective stress management. Fifty-four percent of these students returned signed student assent and parent consent forms and were included in the current study ($n = 218$).

Once ethics approval was granted by the university (see Appendix A), the procedure for the dissemination of assent and consent forms was determined through consultation with the school administration in order to comply with school policy and to minimize interference with the daily class schedule. Upon receiving the forms, students were read a standard oral script

explaining the research program in order to ensure that all students received the same information (see Appendix B). The assent and consent forms also explained the entire program of study, including any risks and benefits associated with the research. Both parents and students were invited to contact the researcher with any questions or concerns (see Appendix C).

The Program

Program summary. StressOFF Strategies (Shapiro & Heath, 2012) is a 45-minute, adolescent-targeted school-based stress management program that aims to equip teenagers with the necessary coping skills to effectively manage stress. The development of the program content was guided by research and theory in the area of stress management, and consists of four key components: (a) Psychoeducation (b) Decreasing stigma (c) Coping skills (cognitive behavioral and mindfulness and acceptance-based techniques), and (d) Follow-up (pamphlet and online activities) (see Appendix D).

Program implementation. Five graduate students were trained to deliver the StressOFF Strategies program. Program training consisted of a 1.5-hour training session by the co-authors of the program. During this training, graduate students were given a detailed script of the stress management program and accompanying PowerPoint/video presentation. The script provided step-by-step instructions in order to facilitate training and ensure treatment integrity. The training also included simulated exercises of the strategies taught (e.g., progressive muscle relaxation and present-moment awareness).

Procedure

Prior arrangements were made with school administrators for graduate students to deliver the program and to carry out the data collection. On the day of program delivery, students were informed that they would participate in a stress management workshop and would fill out

questionnaires, although only those who had returned completed and signed parent consent and student assent forms would participate in the present research study.

Both the program and data collection took place in classes of 30 to 35 students in their classrooms, which were either equipped with a Smart Board or a screen and LCD projector. Teachers had the choice whether or not they wished to stay in the class for the program, although most opted not to.

Data collection was comprised of two self-report questionnaires filled out by the students immediately before and immediately after the 45-minute stress management program. Program delivery and data collection were both administered and completed within one classroom period. The purpose of the pre-program questionnaires was to evaluate students' stress, understanding of stress and their use of stress management techniques (see Appendix E). Immediately following the workshop, students were asked to fill out another brief questionnaire, which evaluated their understanding and willingness to use the stress management techniques they had learned. In this questionnaire, students were also asked to evaluate the program and provide feedback (see Appendix F).

Measures

Pre-program Measures.

Perceived stress. Perceived stress was assessed by ten items on the Perceived Stress Scale (PSS; Cohen, 1994), adapted by the researchers. Students were asked to report how often they had been burdened by feelings of uncontrollability, unpredictability and inability to cope with stressors in the previous month. Items were evaluated on a 5-point Likert scale, ranging from “never” (0) to “very often” (4). While overall stress score is obtained by summing all scale items, four positively stated items therefore must be scored reversely (e.g., 0 = 4, 1 = 3, 2 = 2, 3

= 1 & 4 = 0). The researchers adapted the wording of the items to facilitate summation for students, who were asked to calculate their own stress score, which was referred back to in the program. The PSS is a widely used measure of overall stress. Internal consistency is good ($\alpha = .85$), and test-re-test reliability ranges from .75 to .86 (Cohen, Kamarch, & Mermelstein, 1983).

Knowledge of stress/stress management and use of stress management techniques.

Participants were asked to rate their knowledge of stress and stress management on a Likert-type 4-point scale ranging from “nothing at all” (0) to “a lot” (4). Participants were also asked whether they used stress management techniques and to identify their strategies of choice from a list of possible stress management techniques including listening to music, taking a walk, talking to a friend and exercise. In addition, participants were asked if they have received previous stress management instruction. Also, they were asked to rate their interest in learning about stress and stress management on a Likert-type 4-point scale ranging from “not at all interested” (0) to “very interested” (3).

Postprogram measures.

Acquired knowledge of stress/stress management and understanding of specific stress management techniques. Following the program, items were structured to assess participant’s perceived new knowledge of stress and stress management. A Likert-type 4-point scale ranging from “nothing” to “a lot” was used. Participants were also asked to rate their understanding of specific stress management techniques taught in the StressOFF program (e.g., thought challenge, muscle relaxation, self-observer, and support and better choices) on a Likert-type scale ranging from “not very well” (1) to “already knew” (4).

Willingness to use stress management strategies and program satisfaction. Participants were asked to rate their willingness to use the specific strategies learned in the program (e.g.,

thought challenge, muscle relaxation, self-observer and support and better choices) on a Likert-type scale ranging from “never: I don’t like this technique” (1) to “always” (4). Participants who did not identify a need for stress management were given the option to choose “never: I don’t need to use stress-management” (0). Furthermore, participants were asked to rate their overall satisfaction with the program on a Likert-type 4-point scale ranging from “poor” (1) to “excellent” (4).

Results

Preprogram Results.

Perceived stress and gender differences. As shown in Figure 1, the average overall perceived stress level reported by Grade 9 students was 17.10 ($SD = 8.68$). There was a significant effect of gender on perceived stress level with females reporting a higher overall stress level, $F(1, 216) = 33.98, p < .001$. Female students reported a mean stress level of 19.90 ($SD = 8.30$) while male students reported a mean stress level of 13.46 ($SD = 7.81$).

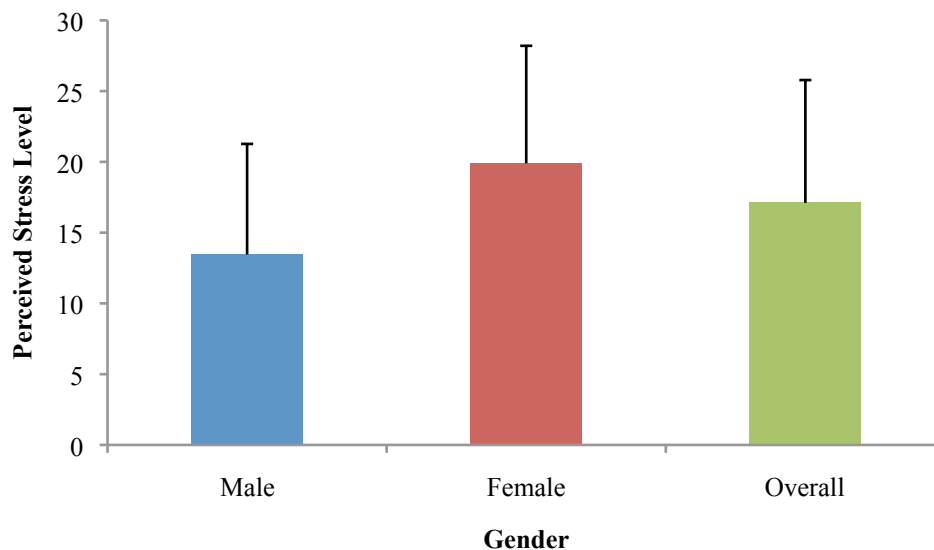


Figure 1.a. Perceived stress levels and gender effect.

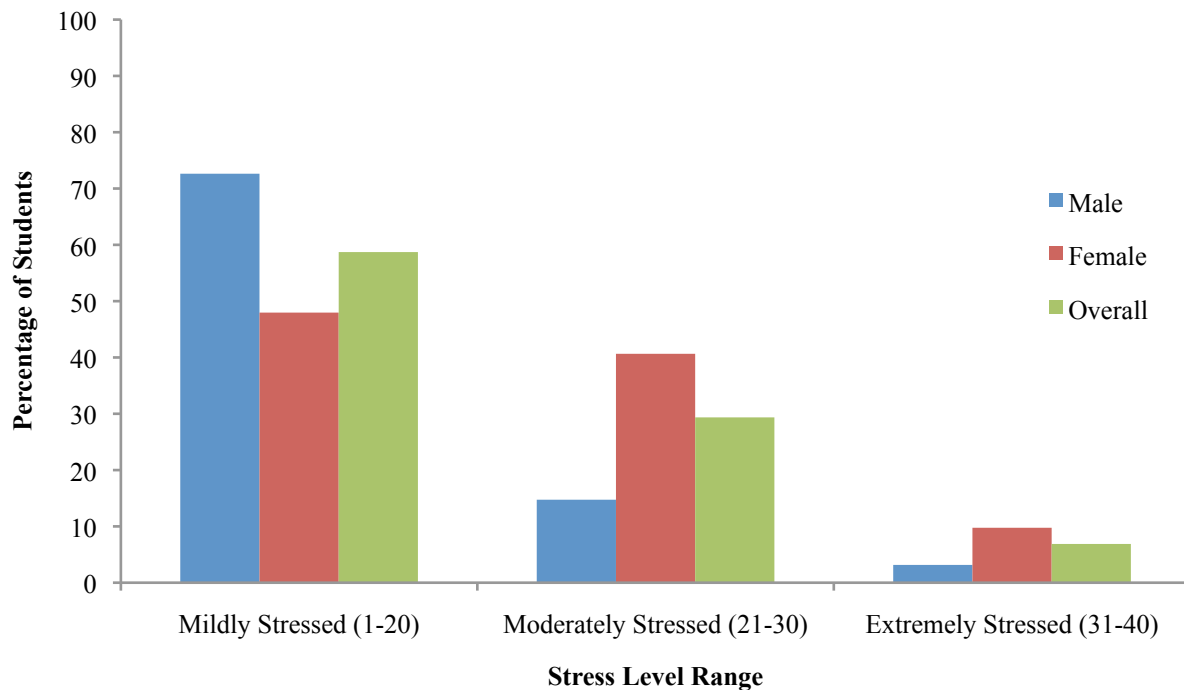


Figure 1.b. Stress level range

Understanding of stress and stress management and gender differences. As shown in Figure 2, a majority (67%) of students answered “a bit” when asked about previous knowledge about stress and stress management. As reported in Table 1, based on the Likert-type 4-point scale ranging from “nothing at all” (0) to “a lot” (4), male students reported a mean scaled score of 1.13 ($SD = 0.66$) while female students reported a mean scaled score of 1.17 ($SD = 0.60$). There was no significant effect of gender on knowledge about stress and stress management before the StressOFF program, $F(1, 216) = 0.27, p = .60$.

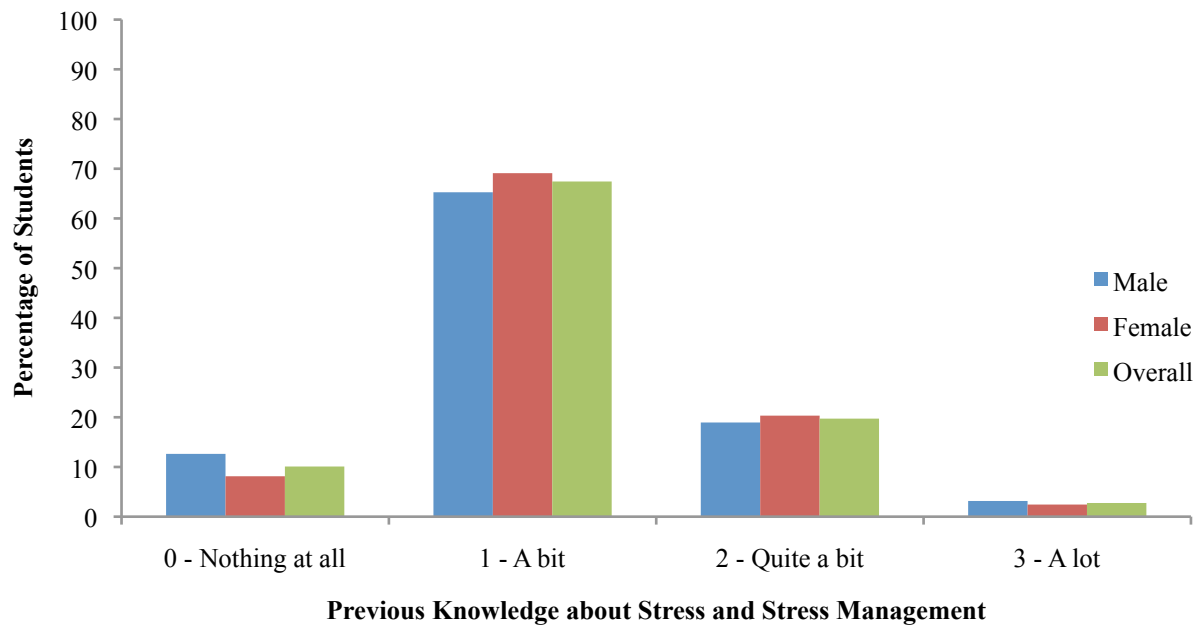


Figure 2. Previous knowledge about stress and stress management

Table 1. Pre-StressOFF Program Responses and Scaled Scores

	Male (n = 95)	Female (n = 123)	Overall (n = 218)	Scale
Knowledge about Stress and Stress Management	1.13 (0.66)	1.17 (0.60)	1.15 (0.62)	0. Nothing at all 1. A bit 2. Quite a bit 3. A lot
Interest in Knowing about Stress and Stress Management	1.60 (0.69)	1.86 (0.64)*	1.75 (0.68)	0. Not at all interested 1. A bit interested 2. Quite interested 3. Very interested
Frequency of Using Stress Management Techniques	1.19 (0.87)	1.83 (0.85)*	1.55 (0.91)	0. Never 1. Almost Never 2. Sometimes 3. Very often

All data are expressed as the mean $\pm$ standard deviation.

Also, students were asked whether they received previous stress management training before attending the StressOFF program. As shown in Figure 3, only 20% of students reported that they had previous stress management training. Approximately 17% of male students and 22% of female students had previous stress management training. There was no statistically significant relationship between gender and previous stress management training, $\chi^2(1, n = 218) = 0.88, p = .35$.

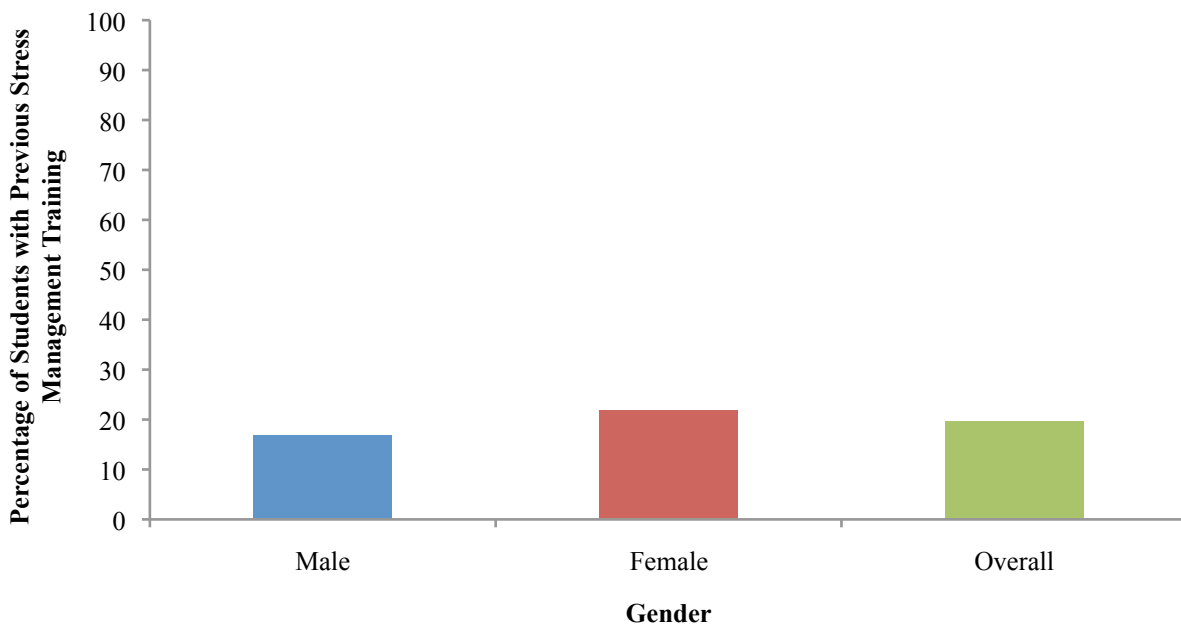


Figure 3. Previous stress management training and gender effect.

In addition, students were asked to rate their interest in learning about stress and stress management before attending the StressOFF program. As shown in Table 1, based on the Likert-type 4-point scale ranging from “not at all interested” (0) to “very interested” (3), male students reported a mean scaled score of 1.60 ($SD = 0.69$) while female students reported a mean scaled score of 1.86 ($SD = 0.64$). Overall, students reported a mean scaled score of 1.75 ($SD = 0.68$).

There was a significant effect of gender on interest in learning about stress and stress management , $F(1, 216) = 8.31, p = .004$.

PostProgram Results.

Following the StressOFF program, a majority (59%) of students reported that they learned a medium amount about stress and stress management (Figure 4). As reported in Table 2, based on the Likert-type 4-point scale ranging from “nothing” (0) to “a lot” (3), male students reported a mean scaled score of 2.12 ($SD = 0.67$) while female students reported a mean scaled score of 2.21 ($SD = 0.59$). There was no significant effect of gender on the amount students learned about stress and stress management after the StressOFF program, $F(1, 215) = 1.29, p = .26$.

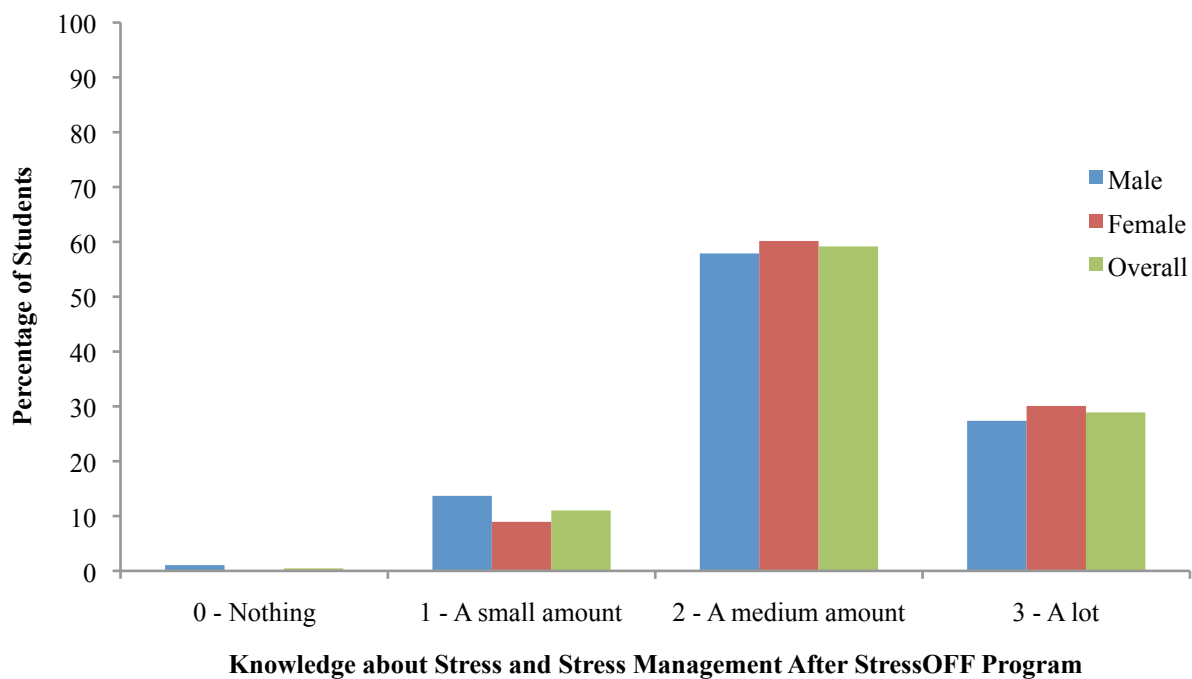


Figure 4. Amount that students learned about stress and stress management after the StressOFF program and gender effect.

Table 2. Post-StressOFF Program Responses

	Male (n = 95)	Female (n = 123)	Overall (n = 218)	Scale
Amount Students Learned about Stress Management After Workshop	2.12 (0.67)	2.21 (0.59)	2.17 (0.63)	0. Nothing 1. Small amount 2. Medium amount 3. A lot
Understanding/Knowledge about Stress Management Techniques (Specific):				
Stop, Thought Challenge	2.41 (0.74)	2.60 (0.66)*	2.52 (0.70)	1. Not very well 2. Understand quite well 3. Understand very well 4. Already knew
Relaxation (Muscle Relaxation)	2.71 (0.65)	2.93 (0.61)*	2.83 (0.63)	1. Not very well 2. Understand quite well 3. Understand very well 4. Already knew
Self-Observer	2.27 (0.81)	2.50 (0.69)*	2.40 (0.75)	1. Not very well 2. Understand quite well 3. Understand very well 4. Already knew
Support and Better Choices	2.47 (0.79)	2.74 (0.69)*	2.62 (0.75)	1. Not very well 2. Understand quite well 3. Understand very well 4. Already knew
Future Willingness to Use Stress Management Techniques (Specific) in the Future:				
Stop, Thought Challenge	1.62 (0.93)	2.14 (0.78)*	1.91 (0.88)	0. Never (don't need to use stress management) 1. Never (don't like this technique) 2. Sometimes 3. Fairly Often 4. Always

Relaxation (Muscle Relaxation)	2.04 (1.09)	2.52 (0.86)*	2.31 (1.00)	0. Never (don't need to use stress management) 1. Never (don't like this technique) 2. Sometimes 3. Fairly Often 4. Always
Self-Observer	1.63 (0.95)	2.18 (0.95)*	1.94 (0.99)	0. Never (don't need to use stress management) 1. Never (don't like this technique) 2. Sometimes 3. Fairly Often 4. Always
Support and Better Choices	1.74 (1.02)	2.36 (0.95)*	2.09 (1.02)	0. Never (don't need to use stress management) 1. Never (don't like this technique) 2. Sometimes 3. Fairly Often 4. Always
Program Satisfaction/Recommendation				
Overall Program Rating	3.08 (0.65)	3.23 (0.56)	3.17 (0.60)	1. Poor 2. Satisfactory 3. Good 4. Excellent

All data are expressed as the mean $\pm$ standard deviation.

Also, following the StressOFF program, students were asked to rate their understanding of specific stress management techniques taught in the program. As shown in Figure 5, approximately 42% of students reported that they understood the “Stop, Thought Challenge” stress management technique very well. As reported in Table 2, based on the Likert-type 4-point

scale ranging from “not very well” (1) to “already knew” (4), male students reported a mean scaled score of 2.41 ($SD = 0.74$) while female students reported a mean scaled score of 2.60 ($SD = 0.66$) for understanding of this technique. There was a significant effect of gender on understanding of the “Stop, Thought Challenge” stress management technique, $F(1, 214) = 4.07$, $p = .045$.

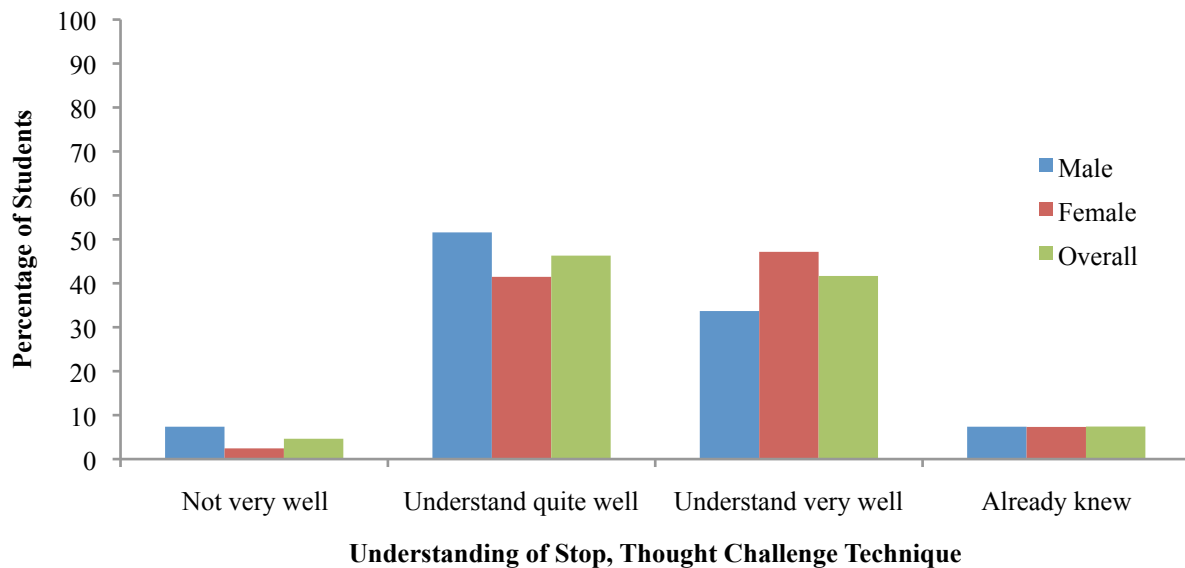


Figure 5. Understanding of the “Stop, Thought Challenge” stress management technique and gender effect.

As shown in Figure 6, a majority (66%) of students reported that they understood the relaxation (muscle relaxation) stress management technique very well. As reported in Table 2, based on the Likert-type 4-point scale ranging from “not very well” (1) to “already knew” (4), male students reported a mean scaled score of 2.71 ($SD = 0.65$) while female students reported a mean scaled score of 2.93 ($SD = 0.61$) for understanding of this technique. There was a significant effect of gender on understanding of the relaxation (muscle relaxation) stress management technique, $F(1, 123) = 2.40$, $p = .014$.

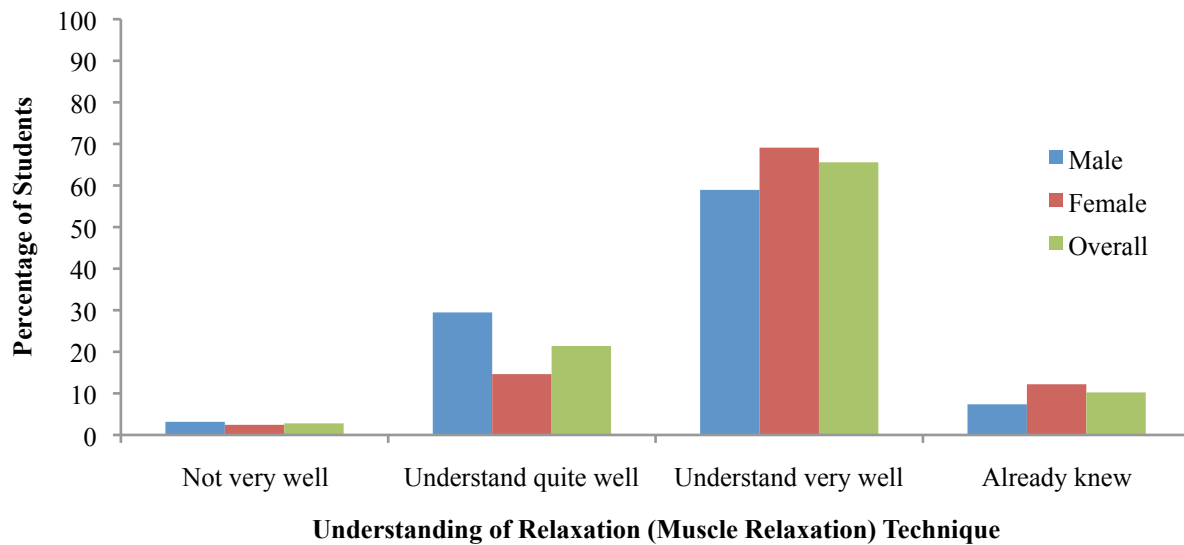


Figure 6. Understanding of the relaxation (muscle relaxation) stress management technique and gender effect.

As shown in Figure 7, approximately 43% of students reported that they understood the self-observer stress management technique very well. As reported in Table 2, based on the Likert-type 4-point scale ranging from “not very well” (1) to “already knew” (4), male students reported a mean scaled score of 1.63 ($SD = 0.95$) while female students reported a mean scaled score of 2.18 ($SD = 0.95$) for understanding of this technique. There was a significant effect of gender on understanding of the self-observer stress management technique, $F(1, 213) = 5.48, p = .020$.

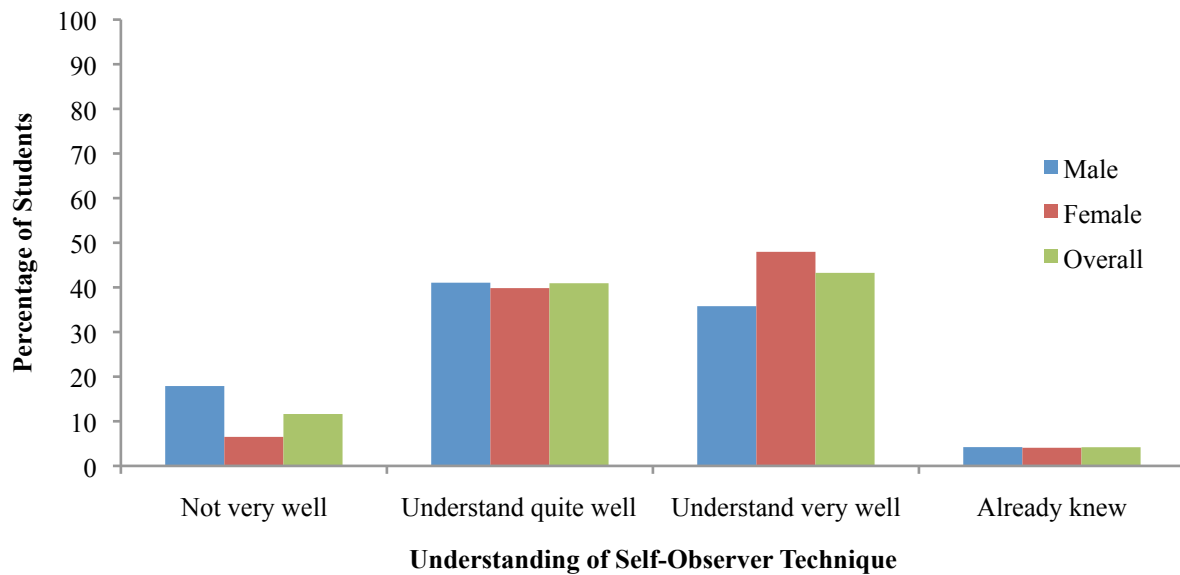


Figure 7. Understanding of the self-observer stress management technique and gender effect.

As shown in Figure 8, approximately 47% of students reported that they understood the support and better choices stress management technique very well. As reported in Table 2, based on the Likert-type 4-point scale ranging from “not very well” (1) to “already knew” (4), male students reported a mean scaled score of 2.47 ($SD = 0.79$) while female students reported a mean scaled score of 2.74 ($SD = 0.69$) for understanding of this technique. There was a significant effect of gender on understanding of the support and better choices stress management technique, $F(1, 213) = 7.01, p = .009$.

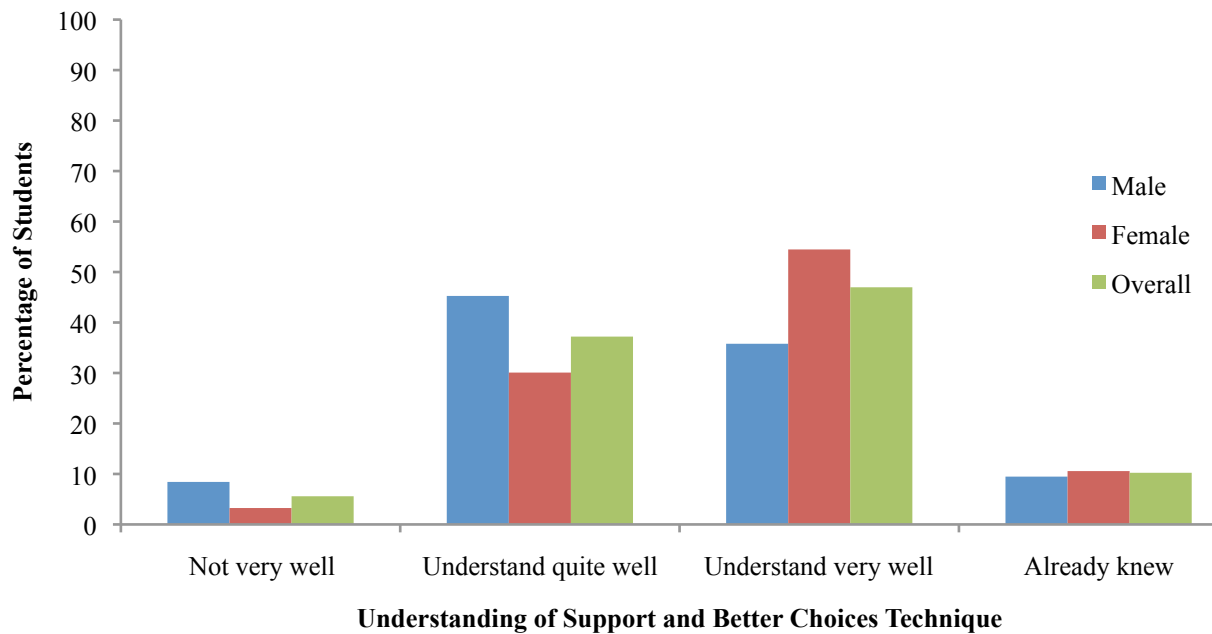


Figure 8. Understanding of the support and better choices stress management technique and gender effect.

Willingness to use stress management techniques. As shown in Figure 9, 50% of students reported that they had used stress management techniques before attending the StressOFF program ($n = 218$). Approximately 36% of male students and 61% of female students indicated that they used stress management techniques. There was a statistically significant relationship between gender and the use of stress management techniques, $\chi^2(1, n = 218) = 13.60, p < .001$.

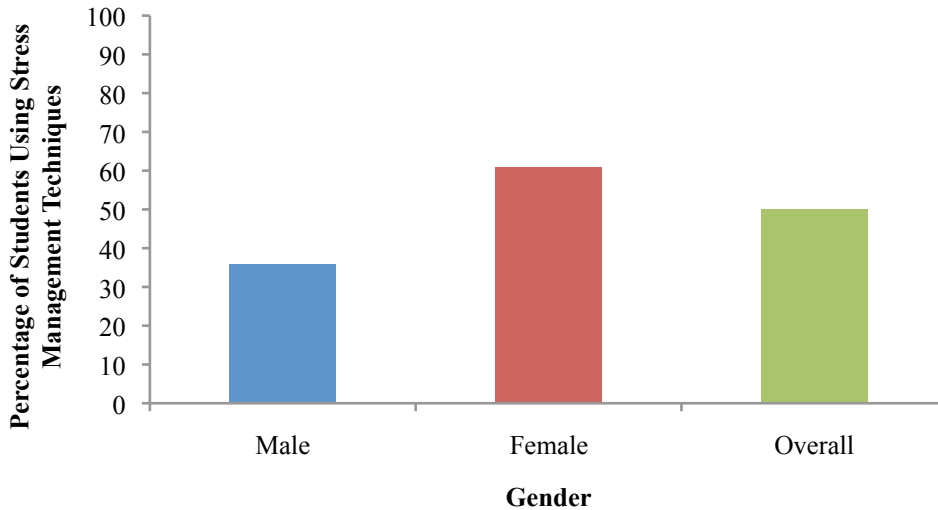


Figure 9. Percentage of students using stress management strategies before attending the StressOFF program and gender effect.

As reported in Table 1, based on the Likert-type 4-point scale ranging from “never” (0) to “very often” (3), male students reported a mean scaled score of 1.19 ($SD = 0.87$) while female students reported a mean scaled score of 1.83 ($SD = 0.85$). Overall, students reported a mean scaled score of 1.55 ($SD = 0.91$). There was a significant effect of gender on frequency of using stress management techniques before attending the StressOFF program, $F(1, 216) = 29.99, p < .001$.

Following the StressOFF program, students rated their willingness to use the specific strategies taught in the StressOFF program in the future. As shown in Figure 10, 20% of students said they would use the “Stop, Thought Challenge” stress management technique fairly often in the future. As reported in Table 2, based on the Likert-type scale ranging from “never (don’t need to use stress management)” (0) to “always” (4), male students reported a mean scaled score of 1.62 ($SD = 0.93$) while female students reported a mean scaled score of 2.14 ($SD =$

0.78) for future willingness to use this technique. There was a significant effect of gender on willingness to use the “Stop, Thought Challenge” stress management technique in the future, $F(1, 214) = 20.09, p < .001$.

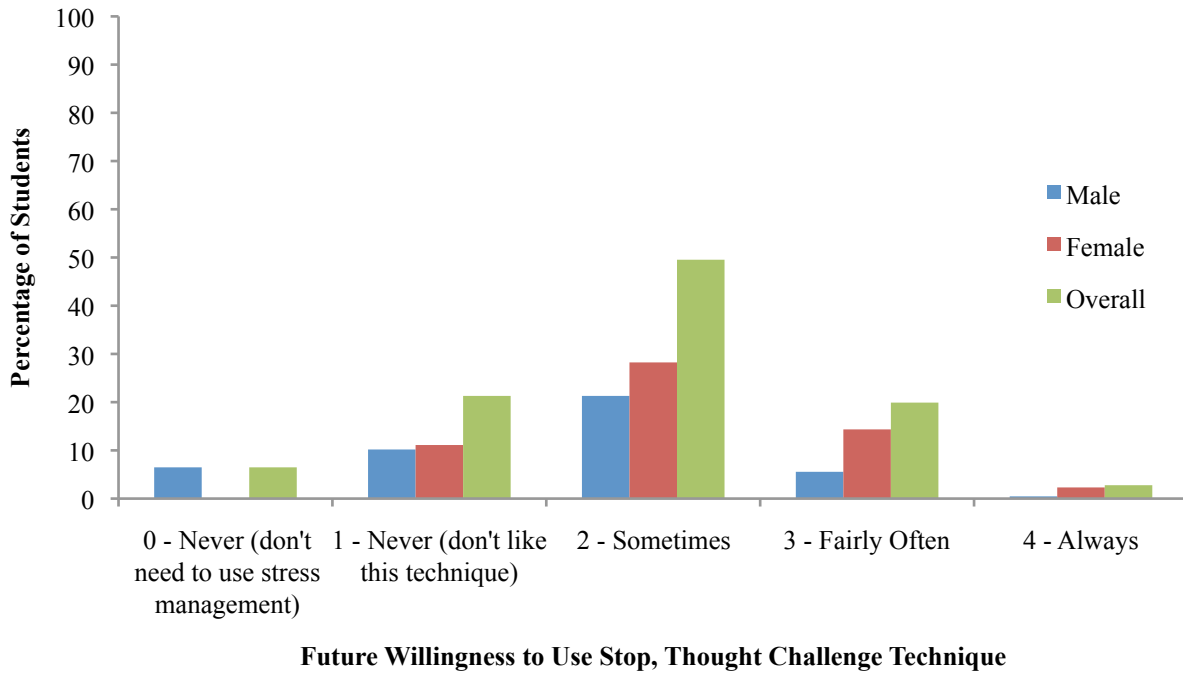


Figure 10. Future willingness to use the “stop, thought challenge” stress management technique and gender effect.

As shown in Figure 11, 33% of students said they would use the relaxation (muscle relaxation) stress management technique fairly often in the future. As reported in Table 2, based on the Likert-type scale ranging from “never (don’t need to use stress management)” (0) to “always” (4), male students reported a mean scaled score of 2.04 ($SD = 1.09$) while female students reported a mean scaled score of 2.52 ($SD = 0.86$) for future willingness to use this technique. There was a significant effect of gender on willingness to use the relaxation (muscle relaxation) stress management technique in the future, $F(1, 213) = 12.73, p < .001$.

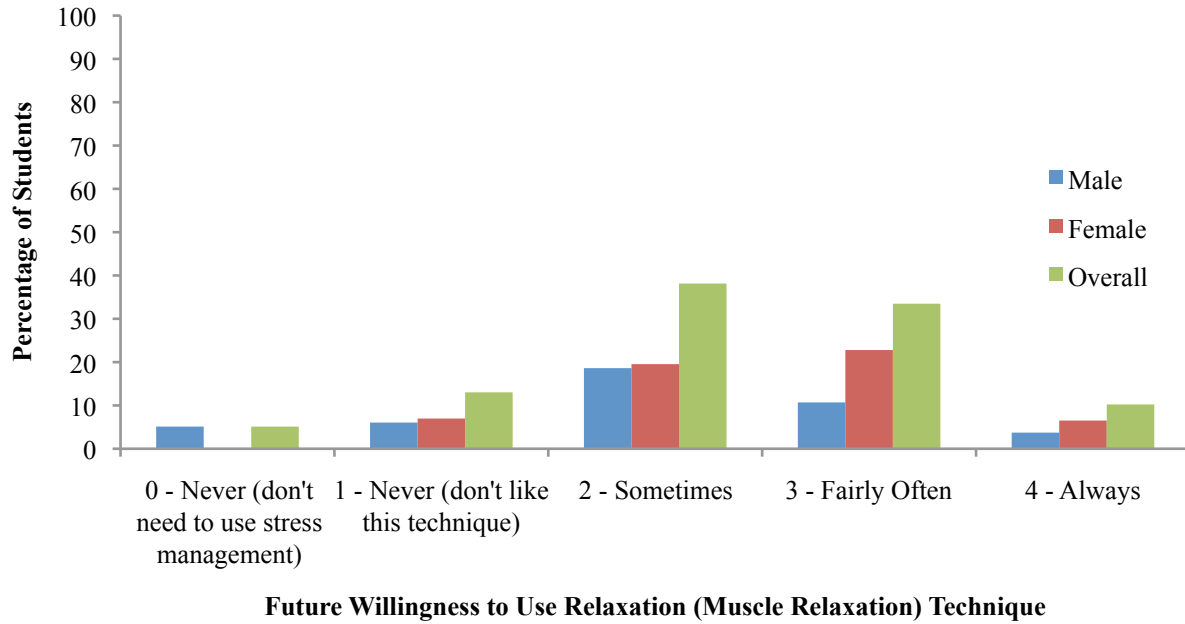


Figure 11. Future willingness to use the relaxation (muscle relaxation) stress management technique and gender effect.

As shown in Figure 12, 19% of students said they would use the self-observer stress management technique fairly often in the future. As reported in Table 2, based on the Likert-type scale ranging from “never (don’t need to use stress management)” (0) to “always” (4), male students reported a mean scaled score of 1.63 ($SD = 0.95$) while female students reported a mean scaled score of 2.18 ($SD = 0.95$) for future willingness to use this technique. There was a significant effect of gender on willingness to use the self-observer stress management technique in the future, $F(1, 213) = 17.98, p < .001$.

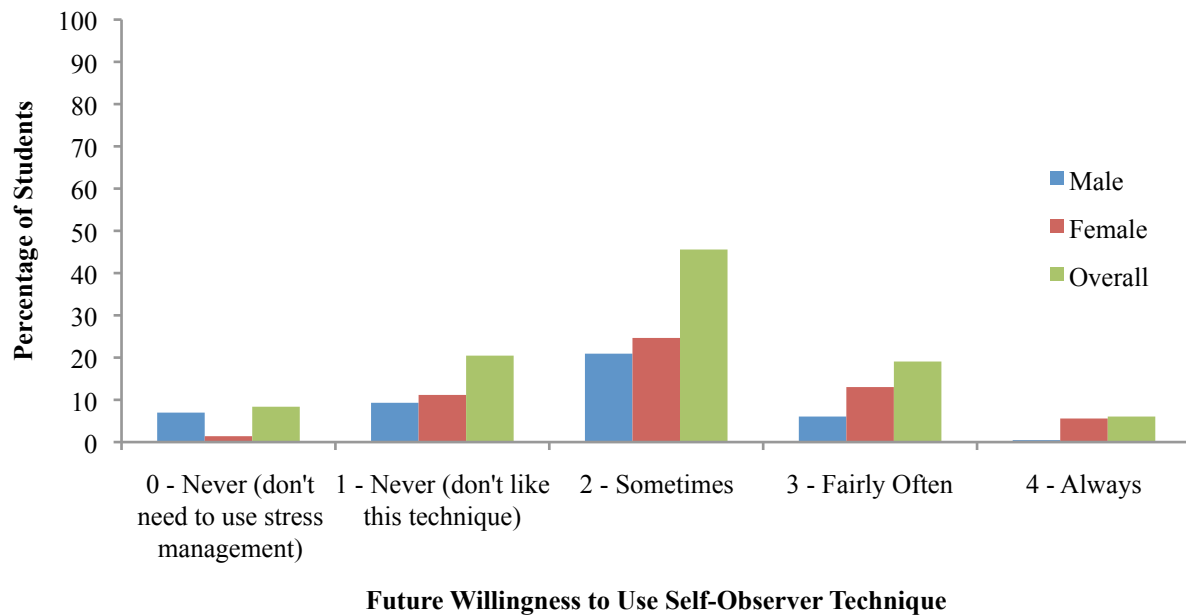


Figure 12. Future willingness to use the self-observer stress management technique and gender effect.

As shown in Figure 13, 24% of students said they would use the support and better choices stress management technique fairly often in the future. As reported in Table 2, based on the Likert-type scale ranging from “never (don’t need to use stress management)” (0) to “always” (4), male students reported a mean scaled score of 1.74 ($SD = 1.02$) while female students reported a mean scaled score of 2.36 ($SD = 0.95$) for future willingness to use this technique. There was a significant effect of gender on willingness to use the support and better choices stress management technique in the future, $F(1, 213) = 21.18, p < .001$.

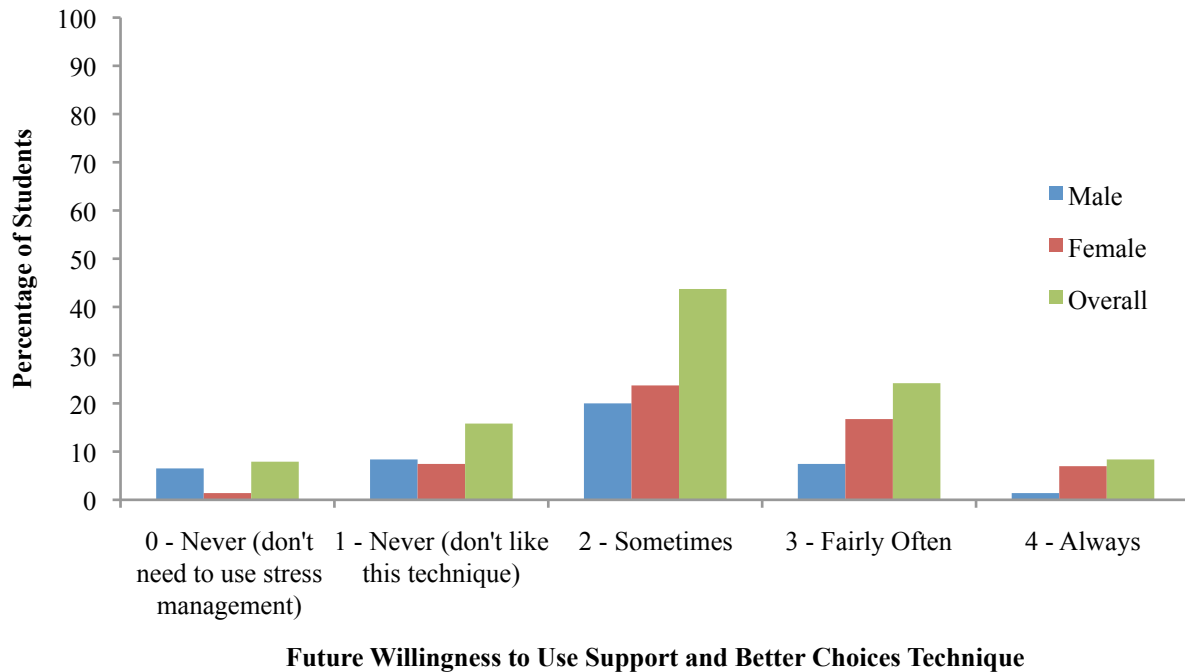


Figure 13. Future willingness to use the support and better choices stress management technique and gender effect.

Overall perceived stress levels and willingness to use stress management techniques.

Students who scored in the top 30% of overall stress levels were compared with students that scored in the bottom 30% on their willingness to use specific stress management techniques after the StressOFF program.

As shown in Figure 14, 23% of students who scored in the top 30% of overall stress levels reported that they would use the “stop, thought challenge” technique fairly often compared to 14% of students who scored in the bottom 30% of overall stress levels. There was a statistically significant relationship between scoring in the top 30% or bottom 30% of overall stress levels and willingness to use the “stop, thought challenge” technique in the future, $\chi^2(4, n = 218) = 11.29, p = .023$.

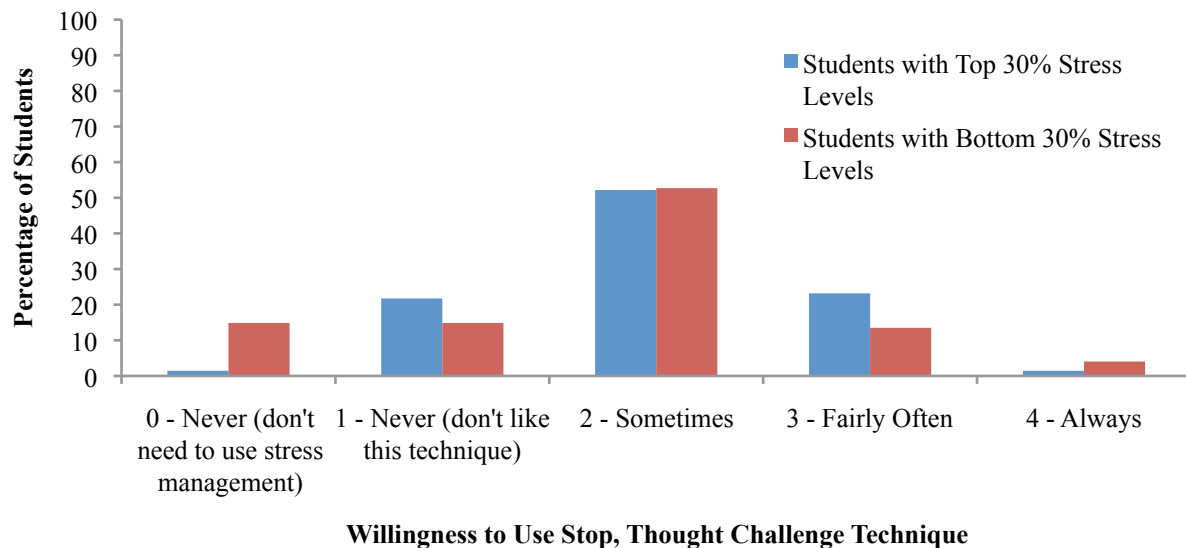


Figure 14. Future willingness to use the “stop, thought challenge” stress management technique and students who scored in the top 30% or bottom 30% of overall stress levels.

As shown in Figure 15, 35% of students who scored in the top 30% of overall stress levels reported that they would use the relaxation (muscle relaxation) technique fairly often compared to 32% of students who scored in the bottom 30% of overall stress levels. There was not a statistically significant relationship between scoring in the top 30% or bottom 30% of overall stress levels and willingness to use the relaxation (muscle relaxation) technique in the future, $\chi^2(4, n = 218) = 9.03, p = .090$.

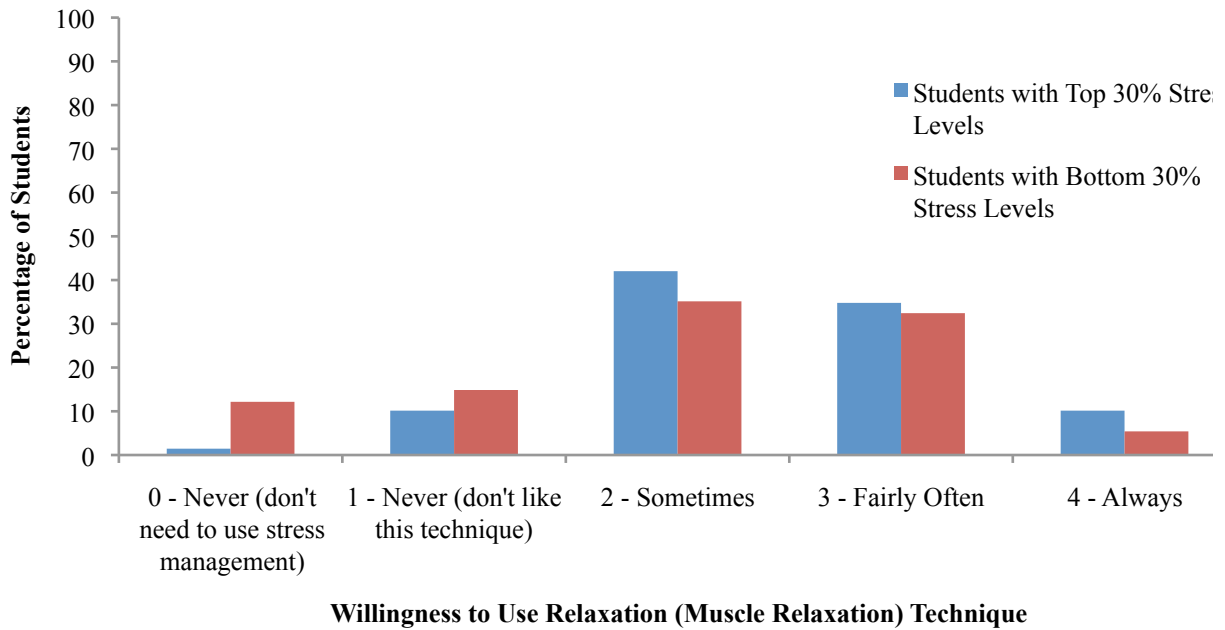


Figure 15. Future willingness to use the relaxation (muscle relaxation) stress management technique and students who scored in the top 30% or bottom 30% of overall stress levels.

As shown in Figure 16, 23% of students who scored in the top 30% of overall stress levels reported that they would use the self-observer technique fairly often compared to 18% of students who scored in the bottom 30% of overall stress levels. There was not a statistically significant relationship between scoring in the top 30% or bottom 30% of overall stress levels and willingness to use the self-observer technique in the future, $\chi^2(4, n = 218) = 4.66, p = .32$.

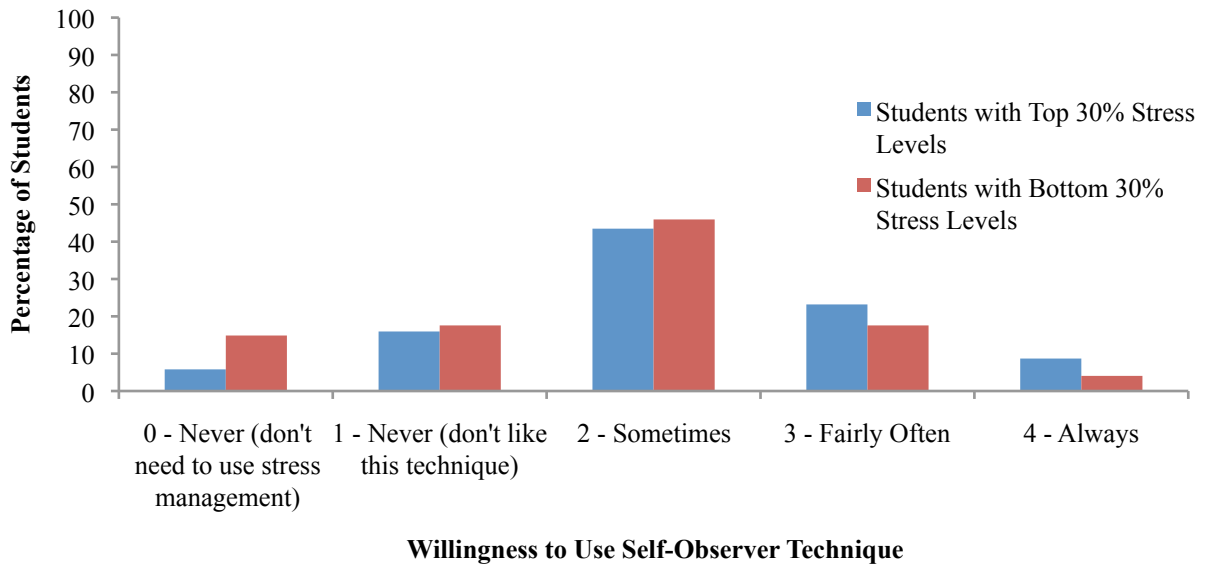


Figure 16. Future willingness to use the self-observer stress management technique and students who scored in the top 30% or bottom 30% of overall stress levels.

As shown in Figure 17, 30% of students who scored in the top 30% of overall stress levels reported that they would use the support and better choices technique fairly often compared to 16% of students who scored in the bottom 30% of overall stress levels. There was not a statistically significant relationship between scoring in the top 30% or bottom 30% of overall stress levels and willingness to use the support and better choices technique in the future, $\chi^2(4, n = 218) = 7.77, p = .10$.

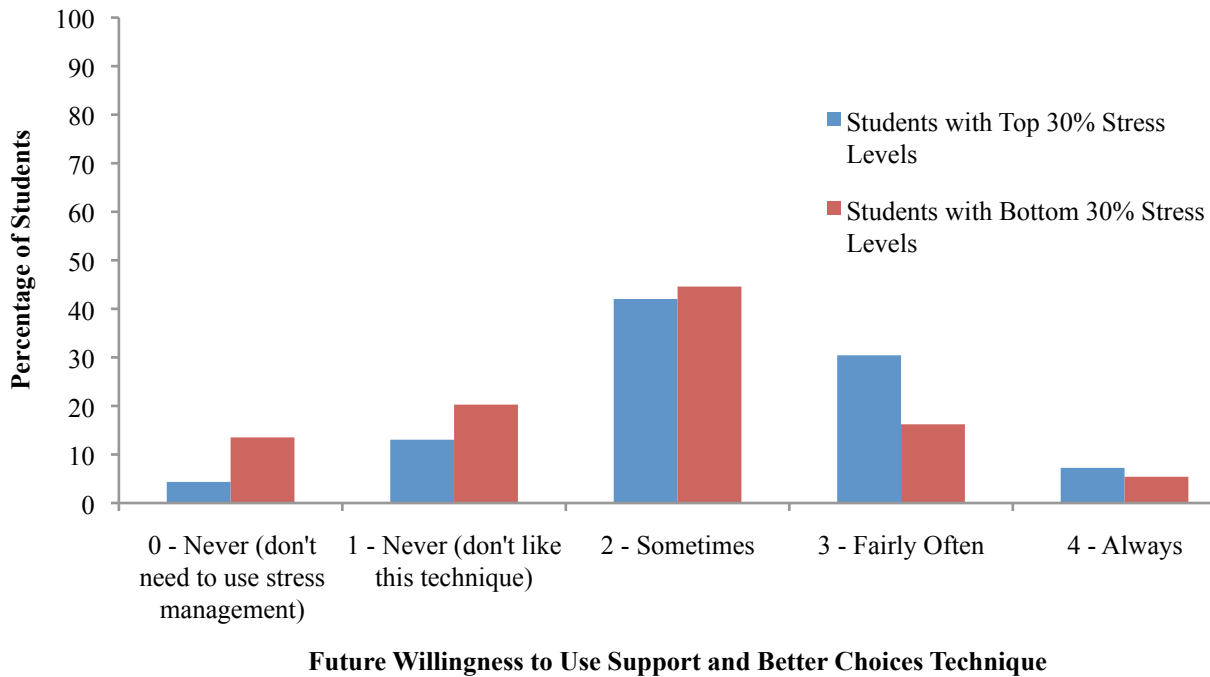


Figure 17. Future willingness to use the support and better choices stress management technique and students who scored in the top 30% or bottom 30% of overall stress levels.

Predictors of overall stress management workshop rating. As reported in Table 2, based on the Likert-type scale ranging from “poor” (1) to “excellent” (4), male students reported a mean overall program rating of 3.08 ($SD = 0.65$) while female students reported a mean rating of 3.23 ($SD = 0.56$). The overall mean program rating was 3.17 ($SD = 0.60$). There was no significant effect of gender on overall stress management workshop rating, $F(1, 216) = 3.10, p = 0.080$. Multiple regression was used to test if gender, previous stress management training, and overall stress levels significantly predicted overall stress management workshop ratings. The results of the regression indicated that the overall model is not statistically significant; these predictors explained 3.1% of the variance, $R^2 = .031, F(3, 214) = 2.26, p = .082$. It was found that gender significantly predicted overall stress management workshop ratings, $\beta = .15, p =$

0.039 while previous stress management training, $\beta = 0.104$, $p = 0.13$ and overall stress levels, $\beta = -0.10$, $p = 0.16$ were not significant predictors.

Multiple regression was used to test if gender and interest in knowing about stress and stress management significantly predicted overall stress management workshop ratings. The results of the regression indicated that the overall model is statistically significant; these predictors explained 10.5% of the variance, $R^2 = 0.11$, $F(2, 215) = 12.66$, $p < 0.001$. It was found that gender did not significantly predict overall stress management workshop ratings, $\beta = 0.060$, $p = 0.37$ while interest in knowing about stress and stress management significantly predicted overall stress management workshop ratings, $\beta = 0.31$, $p < 0.001$.

A previous interest in knowing about stress and stress management is the best predictor of overall stress management workshop ratings. The results of the regression indicated that the overall model is statistically significant; this predictor explained 10.2% of the variance, $R^2 = 0.10$, $F(1, 216) = 24.52$, $p < 0.001$. It was found that interest in knowing about stress and stress management significantly predicted overall stress management workshop ratings, $\beta = 0.32$, $p < 0.001$.

Discussion

The first aim of the study was to report on student stress, knowledge of stress and stress management techniques, including previous stress management instruction. Prior to the program, 88.08% of participants reported a mild to moderate overall stress level ($M = 17.10$) with females reporting higher overall stress than male participants. This finding is consistent with previous literature showing that girls report higher levels of perceived stress (e.g., Galaif, Sussmann, Chou, & Wills, 2003; Hampel & Petermann, 2006).

Although only a mild to moderate level of overall stress was indicated, 68.35% of

participants reported being “quite interested” to “very interested” in learning about stress and in furthering their knowledge of effective stress management skills. This moderate level of interest may be attributed in part to the lack of previous stress and stress management knowledge reported, with 67.43% of participants indicating that they only knew a bit about stress and stress management coming into the program. Furthermore, a large portion of students indicated that they had never received any stress management instruction prior to the program while only 19.72% of participants indicated that they had received some formal instruction or had previously been shown stress management techniques by a parent, teacher or psychologist. The latter finding sheds light on the absence of stress management instruction, thus emphasizing the necessity of school-based stress management programs to provide key knowledge surrounding stress and effective stress management in younger grades to help circumvent maladaptive coping, which is often the case in early to middle adolescence (Frydenberg & Lewis, 2000; Hampel & Petermann, 2005, 2006).

The second aim of the study was to evaluate the program by comparing participants’ pre- and post-program reports of understanding of stress and stress management and willingness to use stress management techniques. Following the stress management intervention, 88.53% of participants reported that they learned “a medium amount” to “a lot” about stress and stress management. When asked about the specific strategies taught, the “Relaxation” (muscle relaxation) technique was indicated as most understood, with 65.58% of participants reporting that they understood the strategy very well, followed by the “Support and Better Choices” strategy (46.98%), the “Self-Observer” strategy (43.26%) and the “Thought, Challenge” strategy (41.68%). We conjecture that the “Relaxation” (muscle relaxation) strategy was most understood due in part to the physiological nature of the strategy, in which participants were

instructed to follow a brief guided relaxation exercise. For many participants, the benefits of the strategy were almost immediately felt right after its use, which is consistent with other studies (e.g., Lohaus, A., & Klein-Heßling, 2000) that have reported the benefits of using muscle relaxation to induce a state of immediate relaxation. The high level of understanding of the muscle relaxation strategy garnered by evidence of its immediate benefits makes this strategy an integral part of a brief youth-based stress management program.

Prior to the program, 50% of participants reported that they had previously used general stress management techniques (e.g., exercise, listening to music, taking a walk). Following the program, we asked participants to rate their future willingness to use the specific strategies they learned in the program. 33.49% of participants indicated that they would use the “Relaxation” (muscle relaxation) strategy fairly often, followed by the “Support and Better Choices” strategy (24.19%), the “Stop, Thought Challenge” strategy (19.91%), and the “Self-Observer” strategy (19.07%) with females consistently reporting a higher likelihood of using stress management strategies than males.

It is significant to note that participants that fell in the top 30% of overall stress levels had a different report of willingness to use the “Stop, Thought Challenge” strategy compared to those that fell in the bottom 30% of overall stress levels. This finding suggests that participants that are more stressed are dealing specifically with negative, intrusive thoughts, with which the “Stop, Thought Challenge” strategy works well.

While stress management programs have been shown to be effective in teaching cognitive behavioral strategies (e.g., de Anda, 1998), comparable reports of willingness to use cognitive techniques (e.g., “Stop, Thought Challenge”) and mindfulness-based techniques (e.g., “Self-Observer”) lend support to the potential benefits of incorporating both cognitive and

mindfulness and acceptance-based strategies in a stress management program. Furthermore, substantial reports of willingness to use “Muscle relaxation” and “Support and Better Choices” emphasize the need to implement physiological and behavioral strategies, adding to existing literature, which has found that effective interventions target the cognitive, physiological and behavioral processes associated with stress and anxiety through coping skills instruction in each domain (e.g., Barrett, 2005).

The third aim of the study was to report on students’ overall satisfaction with the program and to investigate the role of stress, gender and previous stress management instruction as predictors of program satisfaction. The mean overall program rating was 3.17 out of 4, with 90.83% of participants rating it “good” or better. Overall stress level and gender did not predict overall stress management workshop ratings, while a previous interest in learning about stress and stress management was the best predictor of overall satisfaction with the program. As expected, these results suggest that stress management programs are most effective when targeting a specific population of individuals who are interested in learning about stress and acquiring stress management techniques; however, the universal nature of this program can circumvent the unintended social stigma preventing those who need to attend these types of programs from doing so (Lock & Barrett, 2003; Weems et al., 2010).

Overall, the results of this evaluation study of the StressOFF Strategies provides encouraging support for the application of a single-session, universal, adolescent-targeted stress management program in a high school setting. Results from pre- and post-program reports suggest that the program has a modest effect on students’ knowledge of stress, understanding of and willingness to use both cognitive-behavioral *and* mindfulness and acceptance-based stress management techniques. Most encouragingly are the high ratings of satisfaction from students

with the program and the relatively high rates of likelihood of using strategies taught.

Limitations and Final Conclusions

Several limitations must be taken into account when considering the overall effects of the program. First, data collection and program delivery were both executed within the time frame of one class period (e.g., 1 hour). Questionnaires were therefore abridged and could not act a comprehensive measure of program effects. Moreover, the structure of items on the pre- and post-program questionnaires did not offer a direct comparison of pre and post-program differences. Finally, the short duration of the program calls into question whether its effects can be maintained. A follow-up study is required to assess whether participants will continue to use the strategies learned during a single-session stress management program and whether these have an impact on overall stress level.

The present study represents a first step in the research evaluating the effectiveness of a single-session, universal, adolescent-targeted stress management program and adds to the growing evidence of the benefits of mindfulness and acceptance-based strategies for stress management. Overall, our results demonstrate that adolescents understand and are willing to use stress management strategies that are taught over the course of one school period. This finding tremendous implications for school personnel, who are often confronted with the dilemma of wanting to bring mental health initiatives to their schools, but are lacking the additional time and personnel resources such programs frequently demand. Although further research is necessary to validate the prolonged effects of the program, the preliminary evidence garnered by the present study suggests that a brief school-based program can have a modest effect, particularly on students' understanding of stress and stress management and future willingness to use stress management strategies.

References

- Albano, A. M., & Kendall, P. C. (2002). Cognitive behavioural therapy for children and adolescents with anxiety disorders: Clinical research advances. *International Review of Psychiatry, 14*, 129-134.
- American Psychological Association. (2009). *Stress in America 2009*. Retrieved from <http://www.apa.org/news/press/releases/stress-exec-summary.pdf>
- Angelosante, A., Colognori, D., Goldstein, C. R., & Warner, C. M. (2011). School-Based Interventions for Anxiety in Youth. In *Handbook of child and adolescent anxiety disorders* (pp. 419-434). New York, NY: Springer.
- Balle, M., & Tortella-Feliu, M. (2009). Efficacy of a brief school-based program for selective prevention of childhood anxiety. *Anxiety, Stress & Coping, 23*, 71-85.
- Barrett, P. M. (2005) *FRIENDS for life group leaders' manual for youth*. Brisbane, Australia: Australian Academic Press.
- Barrett, P. M., Lock, S., & Farrell, L. J. (2005). Developmental differences in universal preventive intervention for child anxiety. *Clinical Child Psychology and Psychiatry, 10*, 539-555.
- Barrett, P., & Turner, C. (2001). Prevention of anxiety symptoms in primary school children: Preliminary results from a universal school-based trial. *British Journal of Clinical Psychology, 40*, 399-410.
- Beck, A. T., Emery, G., & Greenberg, R. L. (1985). *Anxiety disorders and phobias: A cognitive perspective*. New York, NY: Basic Books.
- Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. New York, NY: Guilford Press.

- Broderick, P. C., & Metz, S. (2009). Learning to BREATHE: A pilot trial of a mindfulness curriculum for adolescents. *Advances in School Mental Health Promotion*, 2, 35-46.
- Brown, L. A., Forman, E. M., Herbert, J. D., Hoffman, K. L., Yuen, E. K., & Goetter, E. M. (2011). A randomized controlled trial of acceptance-based behavior therapy and cognitive therapy for test anxiety: A pilot study. *Behavior Modification*, 35, 31-53.
- Cohen, S., Kamarch, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 385-396.
- Cohen, S., Kessler, R. C., & Underwood Gordon, L. (1994). Perceived stress scale. *Measuring Stress: A Guide for Health and Social Scientists*.
- Calvete, E., & Cardenoso, O. (2005). Gender differences in cognitive vulnerability to depression and behavior problems in adolescents. *Journal of Abnormal Child Psychology*, 33, 179-192.
- Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: problems, progress, and potential in theory and research. *Psychological bulletin*, 127, 87-127.
- Compas, B. E., Orosan, P. G., & Grant, K. E. (1993). Adolescent stress and coping: Implications for psychopathology during adolescence. *Journal of Adolescence*, 16, 331-349.
- Compion, J., & Rocco, S. (2009). Minding the mind: the effects and potential of a school-based meditation programme for mental health promotion. *Advances in School Mental Health Promotion*, 2, 47-55.
- de Anda, D. (1998). The evaluation of a stress management program for middle school adolescents. *Child and Adolescent Social Work Journal*, 15, 73-85.
- de Anda, D., Bradley, M., Collada, C., Dunn, L., Kubota, J., Hollister, V., & Wadsworth, T.

- (1997). A study of stress, stressors, and coping strategies among middle school adolescents. *Children & Schools, 19*, 87-98.
- de Anda, D., Darroch, P., Davidson, M., Gilly, J., & Morejon, A. (1990). Stress management for pregnant adolescents and adolescent mothers: A pilot study. *Child and Adolescent Social Work Journal, 7*, 53-67.
- Evans, S. W., & Weist, M. D. (2004). Commentary: Implementing Empirically Supported Treatments in the Schools: What Are We Asking? *Clinical Child and Family Psychology Review, 7*(4), 263-267.
- Fisak, B., Richard, D., & Mann, A. (2011). The prevention of child and adolescent anxiety: A meta-analytic review. *Prevention Science, 12*, 255-268.
- Fisher, P. H, Masia-Warner, C., & Klein, R. G. (2004). Skills for social and academic success: A school-based intervention for social anxiety disorder in adolescents. *Clinical Child and Family Psychology Review, 7*, 241-9.
- Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middleaged community sample. *Journal of Health and Social Behavior, 21*, 219-239.
- Forman, E. M., Herbert, J. D., Moitra, E., Yeomans, P. D., & Geller, P. A. (2007). A randomized controlled effectiveness trial of acceptance and commitment therapy and cognitive therapy for anxiety and depression. *Behavior Modification, 31*, 772-799.
- Fridrici, M., & Lohaus, A. (2009). Stress-prevention in secondary schools: online-versus face-to-face-training. *Health Education, 109*, 299-313.
- Frydenberg, E., & Brandon, C. M. (2002). *The best of coping*. Australia: Oz Child.
- Frydenberg, E., & Lewis, R. (2000). Coping with stresses and concerns during adolescence: A longitudinal study. *American Educational Research Journal, 37*, 727-745.

- Frydenberg, E., Lewis, R., Bugalski, K., Cotta, A., McCarthy, C., Luscombe-Smith, N., & Poole, C. (2004). Prevention is better than cure: Coping skills training for adolescents at school. *Educational Psychology in Practice, 20*, 117-134.
- Galaif, E. R., Sussman, S., Chou, C. P., & Wills, T. A. (2003). Longitudinal relations among depression, stress, and coping in high risk youth. *Journal of youth and adolescence, 32*, 243-258.
- Gillham, J. E., Reivich, K. J., Freres, D. R., Lascher, M., Litzinger, S., Shatté, A., & Seligman, M. E. (2006). School-based prevention of depression and anxiety symptoms in early adolescence: A pilot of a parent intervention component. *School Psychology Quarterly, 21*, 323-348.
- Gordon, R. S. (1987). An operational classification of disease prevention. In J. A. Sternbert & M. M. Silverman (Eds.) *Preventing mental disorders: A research perspective* (DHHS Publication No. ADM 87-1492, pp. 20-26). Washington, DC: US Government Printing Office.
- Hayes, S. C. (2004). Acceptance and commitment therapy, relational frame theory, and the third wave of behavioral and cognitive therapies. *Behavior therapy, 35*, 639-665.
- Hampel, P., Meier, M., & Kümmel, U. (2008). School-based stress management training for adolescents: Longitudinal results from an experimental study. *Journal of Youth and Adolescence, 37*, 1009-1024.
- Hampel, P., & Petermann, F. (2003). *Anti-Stress-Training für Kinder [Anti-Stress-Training for children]* (2nd ed.). Weinheim, Germany: BeltzPVU.
- Hampel, P., & Petermann, F. (2005). Age and gender effects on coping in children and adolescents. *Journal of Youth and Adolescence, 34*, 73-83.

Hampel, P., & Petermann, F. (2006). Perceived stress, coping, and adjustment in adolescents.

Journal of Adolescent Health, 38, 409-415.

Harris, R. (2006). Embracing your demons: an overview of acceptance and commitment therapy.

Psychotherapy in Australia, 12(4), 2-8.

Hayes, S. C. (2004). Acceptance and commitment therapy, relational frame theory, and the third wave of behavioral and cognitive therapies. *Behavior therapy, 35*, 639-665.

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and Commitment Therapy: An experiential approach to behavior change*. New York: Guilford Press.

Hofmann, S. G., & Asmundson, G. J. (2008). Acceptance and mindfulness-based therapy: New wave or old hat? *Clinical psychology review, 28*, 1-16.

Hofmann, S. G., Sawyer, A. T., & Fang, A. (2010). The empirical status of the “new wave” of cognitive behavioral therapy. *The Psychiatric clinics of North America, 33*, 701-710.

Huberty, T. J. (2012). School-based interventions. In T. J Huberty (Ed.), *Anxiety and depression in children and adolescents: Assessment, intervention and prevention* (pp. 323-344). New York, NY: Springer.

Institute of Medicine. (1994). *Reducing risks for mental disorders: Frontiers for preventive intervention research*. Washington, DC: National Academy Press.

Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain and illness*. New York, NY: Delacourt.

Kendall, P.C. (1990). *The coping cat workbook*. Merion Station, PA: Temple University.

Kendall, P.C. (1994). Treating anxiety disorders in children: Results of a randomised clinical trial. *Journal of Consulting and Clinical Psychology, 62*, 100-110.

Kendall, P. C. (Ed). (2012). *Child and adolescent therapy: Cognitive-behavioral procedures* (4th

- ed.) New York, NY: Guilford Press.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer Publishing.
- Lock, S., & Barrett, P. M. (2003). A longitudinal study of developmental differences in universal preventive intervention for child anxiety. *Behaviour Change*, 20, 183-199.
- Lowry-Webster, H. M., Barrett, P. M., & Dadds, M. R. (2001). A universal prevention trial of anxiety and depressive symptomatology in childhood: Preliminary data from an Australian study. *Behaviour Change*, 18, 36-50.
- Lowry-Webster, H. M., Barrett, P. M., & Lock, S. (2003). A universal prevention trial of anxiety symptomatology during childhood: Results at 1-year follow-up. *Behavior Change*, 20, 25-43.
- Miller, L. D. (2008). Facing fears: The feasibility of anxiety universal prevention efforts with children and adolescents. *Cognitive and Behavioral Practice*, 15, 28-35.
- Murray, K. M., Byrne, D. G., & Rieger, E. (2011). Investigating adolescent stress and body image. *Journal of adolescence*, 34, 269-278.
- Nolen-Hoeksema, S., Larson, J., & Grayson, C. (1999). Explaining the gender difference in depressive symptoms. *Journal of personality and social psychology*, 77, 1061-1072.
- Pincus, D. B., & Friedman, A. G. (2004). Improving children's coping with everyday stress: Transporting treatment interventions to the school setting. *Clinical child and family psychology review*, 7, 223-240.
- Rachman, S. The evolution of cognitive behaviour therapy. In D. Clark, C. G. Fairburn, & M. G. Gelder, *Science and Practice of Cognitive Behavior Therapy*. (pp.1-26). Oxford: Oxford University Press.

- Schonert-Reichl, K. A., & Lawlor, M. S. (2010). The effects of a mindfulness-based education program on pre-and early adolescents' well-being and social and emotional competence. *Mindfulness, 1*, 137-151.
- Schwartz, C., Waddell, C., Barican, J., Garland, O., Gray-Grant-D., & Nightingale, L. (2012). Preventing problematic anxiety. *Children's Mental Health Research Quarterly, 6*, 1-12. Vancouver, BC: Children's Health Policy Centre, Faculty of Health Sciences, Simon Fraser University.
- Segal Z. V., Williams J. M. G., & Teasdale J. D. (2002). Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse. New York, NY: Guilford.
- Shapiro, A. J., & Heath, N. L. (2012). *StressOFF strategies: A stress management program for teens*. Unpublished program and guide, Department of Educational and Counselling Psychology, McGill University, Montreal, QC.
- Shochet, I. M., Dadds, M. R., Holland, D., Whitefield, K., Harnett, P. H., & Osgarby, S. M. (2001). The efficacy of a universal school-based program to prevent adolescent depression. *Journal of clinical child psychology, 30*, 303-315.
- Spence, S. (1997). Structure of anxiety symptoms among children: A confirmatory factor-analytic study. *Journal of Abnormal Psychology, 106*, 280-297
- Vøllestad, J., Nielsen, M. B., & Nielsen, G. H. (2011). Mindfulness-and acceptance-based interventions for anxiety disorders: A systematic review and meta-analysis. *British Journal of Clinical Psychology, 51*, 239-260.
- Weems, C., Scott, B., Taylor, L., Cannon, M., Romano, D., Perry, A., & Triplett, V. (2010). Test anxiety prevention and intervention programs in schools: Program development and rationale. *School Mental Health, 2*, 62-71.

Appendix A



Research Ethics Board Office
James Administration Bldg.
845 Sherbrooke Street West. Rm 429
Montreal, QC H3A 0G4

Tel: (514) 398-6831
Fax: (514) 398-4644
Website: www.mcgill.ca/research/researchers/compliance/human/

Research Ethics Board III
Certificate of Ethical Acceptability of Research Involving Humans

REB File #: 164-1112

Project Title: Effectiveness of a school-based stress management program for adolescents

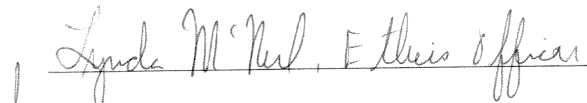
Principal Investigator: Amy J. Shapiro

Department: Educational & Counselling Psychology

Status: Master's student

Supervisor: Prof. Nancy Heath

This project was reviewed by Delegated Review.


Melanie Dirks, Ph.D.
Delegated Reviewer, REB III

Approval Period: November 14, 2012-November 13, 2013

This project was reviewed and approved in accordance with the requirements of the McGill University Policy on the Ethical Conduct of Research Involving Human Subjects and with the Tri-Council Policy Statement: Ethical Conduct For Research Involving Humans.

-
- * All research involving human participants requires review on an annual basis. A Request for Renewal form should be submitted 2-3 weeks before the above expiry date.
 - * When a project has been completed or terminated a Study Closure form must be submitted.
 - * Should any modification or other unanticipated development occur before the next required review, the REB must be informed and any modification can't be initiated until approval is received.
-



Appendix B

TEACHER SCRIPT

On _____ all Grade 9 students will attend a **1-period** stress management workshop. Adolescence is a time where many changes are happening (different friends, greater school demands, etc.). These changes can often bring about stress, so in this workshop, you will learn strategies that will help you better manage and reduce the stress that comes with being a teenager. The team that is delivering the workshop would like to have your feedback, so they are inviting you to fill out **brief questionnaires (10 minutes total)**. These will be filled out immediately before and after the workshop.

While all Grade 9 students will be attending the stress management workshop and filling out questionnaires, your permission AND your parent or legal guardian's permission is required for your questionnaires to be used for research and program improvement.

If you agree to have your questionnaires used for research and program improvement, please complete your information, and return both the **STUDENT ASSENT AND PARENT CONSENT** forms to school. We ask that you check the box that says YES.

If you do not fill out these forms, you will participate in the stress management workshop and fill out the questionnaires, but your questionnaires will NOT be used for research or program improvement.

Please bring back these forms by _____ the latest.

Thank you!



Appendix C

RESEARCH PROJECT: StressOFF Strategies

ASSENT TO PARTICIPATE IN PROJECT – *STUDENT*

- You will be attending a **1- period stress management workshop on**. In this workshop, you are going to learn about different ways to deal with stress. Adolescence is a time where many changes are happening (different friends, greater school demands, etc.). These changes can often bring about stress, so in this workshop, you will learn strategies that will help you better manage and reduce the stress that comes with being a teenager!
- We would really like to have your feedback on the workshop, so we are inviting you to fill out **brief questionnaires (10 minutes total)**: These will be filled out immediately before and after the workshop. The questionnaires will ask you about how stressed you feel on a day-to-day basis and will ask you about how you deal with stress. We will also ask you if you have learned any new ways of dealing with stress after participating in the workshop. Finally, you will have the opportunity to express whether or not you think the program is useful.
- You will be asked to fill out the questionnaires in school, **during school hours**.
- All of the answers you give in these questionnaires are completely confidential. Neither your teachers nor your parents will be told about your answers on the questionnaires.
- No identifying information about you will be used in any presentation of the results from this project.
- Your classroom work and grades will not be affected by your decision to participate or not to participate.
- This project has the potential to enhance our understanding of adolescent stress management and the components that are required to build an effective stress reduction program at the school level. While there are no direct risks involved in participation in this project, you may feel as though you require further support for stress management after the workshop. You will be given a list of resources for stress management.
- *Please be assured that you do not have to answer any question on the questionnaire you don't want to, and you can take a break or end a session at any time, or withdraw from the study at any time.*

Please note: While all Grade 9 students will be attending the stress management workshop and filling out questionnaires, your permission AND your parent or legal guardian's permission is required for your questionnaires to be used for research and program improvement.

If you agree to have your questionnaires used for research or program improvement, please complete your information, and return the attached form to school. We ask that you check the box that says YES. **If you do not fill out this form, you will participate in the stress management workshop and fill out the questionnaires, but your questionnaires will NOT be used for research or program improvement.**

****Please return the attached form by _____ the latest**

If you have any questions or concerns about your rights or welfare as a participant in this research study, please contact the McGill Research Ethics Officer at (514) 398-6831.

Thank you,

Nancy Heath, Ph.D.
James McGill Professor
McGill University, Faculty of Education
nancy.heath@mcgill.ca
(514) 398-3439

Amy Shapiro
Project Coordinator
amy.shapiro@mail.mcgill.ca
(514) 398-1232

****Please return this form to your school by _____**

YES: → I agree for my questionnaires to be used for research and program improvement

Name (please print):

Signature: _____

Date: _____

RESEARCH PROJECT: **StressOFF Strategies**CONSENT TO PARTICIPATE IN PROJECT – **PARENT/LEGAL TUTOR**

Dear Parent/Legal Tutor,

Adolescence is a period characterized by physical, social and emotional changes. These changes can often produce significant stressors, including interpersonal stress (e.g., difficulties with peers or family members), intrapersonal distress (e.g., anxiety, mood, self-esteem), and generalized school stress (e.g., homework stress, test anxiety). While stress reduction programs may offset the negative effects of stress, they are often lengthy and therefore difficult to implement in a school setting where time is limited and reserved for curricular activities.

Our research team is interested in evaluating the effectiveness of a brief stress management workshop for Grade 9 students, in which participants will learn how to effectively manage stress through techniques such as thought challenging, relaxation and deep breathing. Results from this study will contribute to our greater understanding of how adolescents make sense of and cope with stress.

Project activities: The workshop will be 1 period in length and will be delivered during school hours. The session will consist of information pertaining to stress management, building resiliency and resources linking to follow up online activities. In order to evaluate the effectiveness of the workshop, students will be asked to participate in a 5-minute needs assessment, which will measure students' current stress level, their knowledge of stress and use of coping techniques. Immediately following the workshop, students will be asked to complete a 5-minute questionnaire evaluating the program and will then be encouraged to visit the follow up online activities.

Benefits: Youth are reporting increased levels of stress and difficulty managing stress. This project has the potential to enhance our understanding of adolescent stress management and the components that are requisite to build a brief, yet effective, stress reduction program at the school level.

Potential risks: While there are no direct risks involved in participation in this research project, some participants may feel as though they require further support for stress management after the workshop. All students will be provided with a list of resources for stress management.

All information collected will be kept confidential, and all completed questionnaires will be kept in a locked cabinet accessible only to the primary researcher from McGill University. All data will be coded to ensure confidentiality. No identifying information will be used in any written or oral presentation of the results. Students are free to withdraw from the project at any time.

PLEASE NOTE: While ALL Grade 9 students will attend the stress management workshop and will fill out questionnaires, parental consent is required for student questionnaires to be used for research and program improvement. Therefore, students who do NOT have parental consent will still complete the workshops and questionnaires, but these will not be used for research.

Please check the "YES" box and sign below if you would like your son/daughter's questionnaires to be used for research and program improvement, and return the attached form to school by _____. Should you have any questions, please feel free to contact me at the coordinates listed below. If you have any questions or concerns about your child's rights or welfare as a participant in this research study, please contact the McGill Research Ethics Officer at (514) 398-6831. Thank you!

Sincerely,

Nancy Heath, Ph.D.
James McGill Professor
McGill University, Faculty of Education
nancy.heath@mcgill.ca
(514) 398-3439

Amy Shapiro
Project Coordinator
amy.shapiro@mail.mcgill.ca
(514) 398-1232

****Please return this form to your child's school by _____**

YES: → I consent to my son/daughter's questionnaires to be used for research and program improvement

Signature: _____ Date: _____

Name of **parent/legal tutor** (please print): _____

Name of **student** (please print): _____

Student's date of birth (month/day/year): _____ Grade: _____

Parent telephone number(s): _____

Appendix D

Overview of Stress Management Intervention with Subject, Content and Time Schedule

Subject	Content	Time Schedule
Psychoeducation	Definition of stress Cognitive, Physiological and behavioral signs of stress Adaptive vs. maladaptive ways of coping with stress	ca. 15 min
Decreasing Stigma	Peer video describing experience of stress during high school Examples of celebrities who have struggled with stress	ca. 10 min
Coping Skills	STRESS: <i>ST: Stop, Thought challenge</i> (e.g., cognitive restructuring) <i>RE: RElaxation</i> (e.g., progressive muscle relaxation) <i>S: Self-Observer</i> (e.g., present-moment awareness/mindfulness) <i>S: Support and better choices</i>	ca. 20 min
Follow Up	Pamphlet outlining strategies and helpful resources StressOFF Strategies website outlining strategies with links to helpful resources	

Appendix E

QUESTIONNAIRE #1**PLEASE FILL OUT THE FOLLOWING INFORMATION:**

Age: _____

Birthday: (*Month/Day/Year*): _____Gender: (*Please circle*)

M

F

1. What do you know about stress and stress management?

0	1	2	3
Nothing at all	A bit	Quite a bit	A lot

2. How interested are you in knowing about stress and stress management?

0	1	2	3
Not at all interested	A bit interested	Quite interested	Very interested

3. a) Have you ever been taught or shown stress management techniques?

- ☐ Yes
- ☐ No

b) If yes, specify where:

4. Do you use stress management techniques?

- ☐ Yes
- ☐ No

5. Which stress management techniques do you use?

- ☐ Deep Breathing
- ☐ Guided relaxation exercises
- ☐ Talking to an adult
- ☐ Talking to a friend
- ☐ Positive self-talk
- ☐ Exercise
- ☐ Taking a walk
- ☐ Distraction (ie. reading, listening to music, watching TV or a movie)
- ☐ Other: _____
- ☐ None

6. How often do you use stress management techniques?

0	1	2	3
Never	Almost never	Sometimes	Very Often

7. How good are you at managing your stress?

0	1	2	3
Not at all good	Somewhat good	Pretty good	Very Good

8. Have you ever visited an online stress management site?

- ☐ Yes
- ☐ No

9. If no, would you ever consider visiting an online stress management site?

- ☐ Yes
- ☐ Maybe
- ☐ No

QUESTIONNAIRE #2

Instructions: Respond to the questions below by circling **ONE** number per question.

0 = Never

1= Almost Never

2= Sometimes

3=Fairly Often

4=Very Often

<i>In the last month, how often have you...</i>	Never	Almost Never	Sometimes	Fairly Often	Very Often
1. ...been upset because of something that happened unexpectedly?	0	1	2	3	4
2. ...felt that you were unable to control the important things in your life?	0	1	2	3	4
3. ...felt nervous and “stressed”?	0	1	2	3	4
4. ...questioned your ability to handle your personal problems?	0	1	2	3	4
5. ...felt that things were just not working out for you?	0	1	2	3	4
6. ...found that you could not cope with all the things that you had to do?	0	1	2	3	4
7. ...felt unable to control irritations in your life?	0	1	2	3	4
8. ...felt that you were overwhelmed by things?	0	1	2	3	4
9. ...been angered because of things that were outside of your control?	0	1	2	3	4
10. ...felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4
TOTAL					

Please add up all of the numbers you circled

Total Score: _____

Appendix F

QUESTIONNAIRE #3**1. Now, after participating in this stress management program, I feel I learned:**

0	1	2	3
Nothing	A small amount	A medium amount	A lot

2. I feel the program was:

0	1	2	3
Not sure	Too simple	Just right	Too complicated

3. How well do you now understand the following strategies? (Circle one number for each strategy)

STRATEGY	1=Not very Well	2= Understand Quite Well	3=Understand Very Well	4=Already Knew
<i>Stop, Thought Challenge</i>	1	2	3	4
<i>Relaxation (Muscle Relaxation)</i>	1	2	3	4
<i>Self-Observer</i>	1	2	3	4
<i>Support and Better Choices</i>	1	2	3	4

4. How much do you think you will use these strategies to deal with stress in the future?

STRATEGY	0=Never: I don't need to use stress management	1=Never: I don't like this technique	2= Sometimes	3=Fairly often	4=Always
<i>Stop, Thought Challenge</i>	0	1	2	3	4
<i>Relaxation (Muscle Relaxation)</i>	0	1	2	3	4
<i>Self-Observer</i>	0	1	2	3	4
<i>Support and Better Choices</i>	0	1	2	3	4

5. How would you rate the program overall?

1

2

3

4

Poor

Satisfactory

Good

Excellent

6. Would you recommend this program to a friend?

1

2

3

4

No, definitely won't

No, probably won't

Yes, probably will

Yes, definitely will

7. Do you plan on visiting the online stress management website?

1

2

3

4

No, definitely won't

No, probably won't

Yes, probably will

Yes, definitely will

General comments on the program (*Optional*)
