Université de Montréal

Behavioral Activation to prevent depression in at-risk adolescents: A pilot feasibility, acceptability and potential impact trial

par
Stephanie Belanger

Département de psychologie,
Faculté des Arts et Sciences

Essai doctoral présenté à la Faculté des études supérieures et postdoctorales
en vue de l'obtention du grade de Doctorat (D. Psy.) en psychologie clinique

Août 2020

Résumé

Objectifs : Évaluer la faisabilité, l'acceptabilité et l'impact potentiel d'un programme de groupe novateur, d'une durée de cinq semaines, en activation comportementale visant à prévenir la dépression chez les adolescents à risque. **Méthodologie** : Une étude pilote comportant un devis pré-post à été menée dans une école secondaire auprès d'un groupe d'adolescents ($N = 9$) présentant des symptômes dépressifs. Le test non-paramétrique de Wilcoxon Signed Rank a été réalisé pour déterminer l'impact potentiel du programme sur les symptômes dépressifs, l'incidence de diagnostics de dépression et les changements au niveau du comportement depuis le pré-test jusqu'au post-test. **Résultats** : La faisabilité et l'acceptabilité ont été établis selon la participation active, le faible taux d'abandon et la collecte de commentaires positifs colligés. Quant à l'impact potentiel du programme, des différences pré-post significatives ont été détectées suggérant une amélioration potentielle chez les participants qui présentaient initialement des symptômes dépressifs sous-cliniques. Le niveau de satisfaction pour les activités plaisantes est demeuré élevé, malgré une participation moindre aux activités plaisantes. Finalement, les participants ont fait état d'une diminution globale de leurs atteintes fonctionnelles. Un essai contrôlé avec un échantillon de plus grande taille est recommandé pour vérifier les résultats. **Conclusions** : Le programme de groupe en activation comportementale pour prévenir la dépression chez les adolescents à risque peut s'offrir dans un milieux scolaire, semble être apprécié, faisable et acceptable. Des études d'efficacité sont nécessaires pour évaluer l'impact clinique de l'activation comportementale en tant que programme de prévention de la dépression chez les adolescents.

Mots-clés : activation comportementale, prévention, dépression, adolescence, programme de groupe

Abstract

Aim: To assess the feasibility, acceptability and potential impact of a novel 5-week group Behavioral Activation (BA) prevention program for at-risk adolescents. **Method:** A pilot study was conducted, using a pre-post design, for one group of adolescents (N = 9) presenting with depressive symptoms in a high school. The nonparametric Wilcoxon signed-rank test was conducted to determine the potential impact of the program on depressive symptomatology, the incidence of depressive diagnoses and behavior change from pretest to posttest. **Results:** Feasibility and acceptability were established by the active participation, low drop-out rate, and positive comments collected. As for the potential impact of the program, significant pre-post test differences were detected suggesting that participants initially presenting with overall subclinical depressive symptoms improved. Enjoyment of activities remained high despite a reduction in the participation of pleasant activities. Finally, the participants evinced an overall decreased impairment in their functioning. A larger controlled trial is warranted to confirm these results. **Conclusions:** The proposed group behavioral activation prevention program for adolescents at risk of depression can be offered within a school setting, appears appreciated, feasible and acceptable. Efficacy studies are needed to determine to the clinical significance of BA as a prevention program for adolescent depression.

Key words: behavioral activation, prevention, depression, adolescence, group program

Table des matières

Liste des tableaux

Liste des abréviations

BA : Behavioral Activation

BADS : Behavioral Activation for Depression Scale

BDI-II : Beck Depression Inventory, 2nd Ed.

CBT : Cognitive Behavioral Therapy

CES-D : Center for Epidemiological Study – Depression Scale

DSM-IV: Diagnostic and Statistical Manual of Mental Disorders, 4th Ed.

DSM-5 : Diagnostic and Statistical Manual of Mental Disorders, 5th Ed.

KSADS-PL : Kiddie Schedule of Affective Disorders and Schizophrenia, Present and Lifetime

PES : Pleasant Events Scale

WHO : World Health Organization

Liste des sigles

e.g. : for example

i.e. : that is

M : mean

Mdn : median

P1, P2, … P9 : Participant 1, Participant 2, … Participant 9

r : Pearson correlation coefficient

SD : standard deviation

I dedicate this essai

To Frédéric Nault-Brière.

This is for you.

Remerciements

To Dr. Tania Lecomte for “taking me to the end” of my research, as promised. Thank you.

To the Lester B. Pearson School Board (LBPSB) and Lasalle Community Comprehensive High School (LCCHS) for welcoming this research project and supporting it from start to finish. Thank you.

To the LCCHS students who participated in the research group and continued even when we moved to videoconference sessions due to the government-directed school closures due to COVID19. Thank you.

To my parents, twin brother, nieces, family members, friends and colleagues, who kept it real throughout. Thank you.

Article

Behavioral Activation to prevent depression in at-risk adolescents: A pilot feasibility, acceptability and potential impact trial

Stephanie Belanger[1], Tania Lecomte[1] & Frédéric Nault-Brière[2]

[1] *Département de psychologie, Université de Montréal, Montréal, Québec, Canada*

[2] *École de psychoéducation, Université de Montréal, Montréal, Québec, Canada*

Conflict of interest :

The authors declare no conflicts of interest.

* Corresponding author: Stephanie Belanger, email: stephanie.belanger.8@umontreal.ca

Introduction

Depression is a serious mental health disorder affecting adolescents and is the leading cause of incapacity among 15 to 44-year old's in the world today (World Health Organization [WHO], 2014; Cheung & Dewa, 2006). In Canada, 15 to 24-years-old have the highest prevalence rates of depression of any age group, with a 12-month prevalence of 7% for 12 to 19 years olds (Statistics Canada, 2017) and a lifetime prevalence of 11.3% (Pearson, Janz, & Ali, 2013). Adolescents are at high risk of experiencing additional episodes in the future, as adolescent-onset depression tends to be recurrent (Avenevoli, Knight, Kessler, & Merikangas, 2008; Garber, Webb, & Horowitz, 2009).

Adolescent depression is associated with a number of adverse effects on social development and functioning (Werner-Seidler, Perry, Calear, Newby, & Christensen, 2017), including substantial impairments in interpersonal, academic, family, physical and psychosocial functioning (Jaycox et al., 2009). For example, there is an increased risk of substance abuse, comorbid psychiatric conditions, high-risk sexual behaviors, poor academic and occupational attainment and achievement, poor peer relationships and social difficulties, physical health problems, lowered life satisfaction, greater adversity, and increased self-harm and suicidal risk (Avenevoli et al., 2008; Gladstone & Beardslee, 2009; Horowitz & Garber, 2006; Birmaher et al., 1996; Lewinsohn, Rohde, Seeley, Klein, & Gotlib, 2003). Adolescent depression is also the primary risk factor for suicide, the second leading cause of death among 15 to 24-year olds (Statistics Canada, 2017).

Only 12% of 15-24-year-olds in Canada who suffer from mood disorders consult formal mental health services (Statistics Canada, 2014). Barriers such as stigma, cost of services, and lack of trained professionals complexify service seeking behaviors and provision (Singhal, Manjula, & Sagar, 2015). Although the aforementioned pertains to diagnosed major depressive disorder, many adolescents present with depressive symptoms that do not meet the diagnostic criteria as per the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5; American Psychiatric Association, 2013) and are, thus, considered to be subthreshold depressive symptoms. Subthreshold depressive symptoms are highly common in adolescents, with point prevalence rates estimated between 2.2% (community sample) and 4.9% (clinical sample) and 12-month prevalence rates in community samples estimated between 1% and 9.3%, as per a systematic review (Bertha& Balàzs, 2013). Adolescents who experience subthreshold depressive symptoms are not only at

high risk of developing a depressive disorder in the future but they also present with significant functional impairments (Bertha & Balàzs, 2013). Preventative interventions, focusing on adolescents with subthreshold depressive symptoms, are needed.

Since the mid-1990s, multiple programs have been developed with the aim of reducing depressive symptoms and preventing the incidence of depressive disorders in adolescents, as well as associated negative consequences on psychosocial functioning. These programs can be divided into three types: universal, selective, and indicated prevention programs, the latter two often cited under targeted prevention programs (Springer & Phillips, 2006). Universal prevention programs are administered to an identified population regardless of risk levels (Springer & Phillips, 2006). Targeted prevention programs are specifically administered to at-risk groups and are divided into two categories: (a) selective prevention programs are directed at individuals who present with one or more risk factors for the presence of a depressive episode (e.g., family history, genetics, etc.), and; (b) indicated prevention programs are directed at individuals who present with the first signs of depression, and who are at high-risk of experiencing a depressive episode in the near future (Springer & Phillips, 2006; Hetrick et al., 2016; Horowitz & Garber, 2006; Muñoz, Cuijpers, Smit, Barrera, & Leykin, 2010).

Evidence from recent meta-analyses and systematic reviews regarding prevention programs for adolescent depression demonstrate that these programs primarily reduce depressive symptoms and, in some cases, depressive episodes (Hetrick et al., 2015; 2016). In a recent meta-analysis of 83 studies, Hetrick et al. (2016) found that universal prevention programs for adolescent depression had statistically significant small effects on self-reported depressive symptoms, yet no statistically significant effect on depressive diagnoses. Targeted prevention programs yielded statistically significant small to moderate effects on self-reported depressive symptoms and statistically significant small effects on depressive diagnoses (Hetrick et al., 2016). Thus, Hetrick et al. (2016) concluded that targeted prevention programs for depression using a proper attention placebo control comparison group show more promise than universal prevention programs. Similarly, Cohen's (2014) meta-analysis of 82 studies of school-based prevention programs for adolescent depression also found that targeted prevention programs yielded overall larger relative effect sizes, about four times more, than universal prevention programs.

Although most prevention programs for adolescent depression have used cognitive behavioral therapy (CBT) strategies (Singhal et al., 2015; Hetrick et al., 2016; Werner-Seidler et al., 2017), recent results in depression research suggest that a subcomponent, behavioral activation (BA), is an effective treatment in and of itself for depression in adults (Ekers, et al., 2014; Dimidjian et al., 2006). BA interventions focus on behavioral changes via increasing engagement in adaptive activities to counter depressive symptoms, while also decreasing engagement in activities that maintain or increase depression (Dimidjian, Barrera, Martell, Muñoz, & Lewinsohn, 2011). Current BA models include a number of behavioral strategies such as activity scheduling, activity monitoring to track mood related to activities, and structuring activities (e.g., in terms of activity selection, ranking, and hierarchy); values, mastery, pleasure and goals in activity selection and scheduling; problem-solving; identifying and addressing internal and external barriers to activity engagement and completion; social skills training; relaxation skills development, and; interventions specifically targeting avoidance (Kanter et al., 2010; Dimidjian et al., 2011). To date, there is data emerging on the efficacy of BA programs for the treatment of adolescent depression (Tindall et al., 2017; McCauley, Schloredt, Gudmundsen, Martell, & Dimidjian, 2016; Pass, Lejuez, & Reynolds, 2018), with similar outcome results for BA and CBT programs. Takagaki et al., (2018) implemented a targeted 5-week BA program for entry-level university students with subthreshold depression (compared to a control group that received no intervention) and found a significant between-group difference on the Beck Depression Inventory (2nd ed.; BDI-II; Beck, Steer, & Brown, 1996) at posttreatment (Takagaki et al., 2018). To our knowledge, no targeted (i.e., selective or indicated) BA prevention program for adolescents with subthreshold depression exists.

The purpose of this pilot study was to investigate the feasibility, accessibility and potential impact of a novel 5-session group BA indicated prevention program for adolescents at risk of depression in a public Canadian high school setting.

Method

Design and Procedure

The present pilot study used a pre-post design. This project was approved by the University of Montreal's research and ethics' board, as well as by the Lester B. Pearson School Board's ethics committee, in Montreal, Canada. Recruitment included tours of four Grade 11 classrooms whereby

the project was presented and a parental consent with adolescent assent form (with the researcher's contact information) (see Appendix A) was distributed to those who expressed an interest in participating. The adolescents were informed that screening and participation would be offered on a first come, first-serve basis. After written parental consent and adolescent assent was obtained, adolescents were screened by a trained psychology doctoral research assistant, in a private office, to determine whether they met the eligibility criteria for participation in the study.

Those meeting inclusion and exclusion criteria, detailed in the next section, answered pretest questionnaires and participated in semi-structured diagnostic interviews prior to receiving the 5-session group BA prevention program. Immediately following their participation in the program, the same measures were administered again with the addition of a brief semi-structured qualitative post-group questionnaire and a brief BA feedback questionnaire (Pass et al., 2018). Participants received a small compensation for their time answering the assessments, but not for their participation in the 5-session group BA prevention program.

Participants

Inclusion criteria consisted of participants being 14 to 18 years old; the presence of depressive symptomatology (as per the Center for Epidemiological Studies – Depression Scale (CES-D; Radloff, 1977)) with a CES-D score > 20 (Stice, Rohde, Gau, & Ochner, 2004); an interest in participating in the study; being currently enrolled in the participating high school, and; not currently receiving mental health services. Exclusion criteria consisted of the participants having a previously known diagnosis of major depression, a primary neurodevelopmental disorder (e.g., autism spectrum disorder), a language disorder, conduct disorder, substance use disorder, oppositional defiant disorder and/or the use of medication for a mood disorder within the past two weeks. Nine participants in total were screened and met the eligibility criteria to qualify for the baseline pretest questionnaires and semi-structured diagnostic interview, which they completed. Results of the pretest evaluation indicated that two participants (22%) presented with clinical depression. Of note, although the study aimed to recruit participants presenting with subclinical depression exclusively, we did include the two participants presenting with clinical depression at pretest in the context of this pilot study. Of these two participants, only one completed the posttest evaluation (see Table 1 for participant characteristics). The seven other participants all presented with subclinical depressive symptoms at pretest.

Measures

Feasibility

Feasibility was determined using a participation grid that was completed by the group facilitator and that kept track of presence (0 = *absent*, 1 = *partial presence* (e.g., was not present for the entire session), 2 = *complete presence*), participation (0 = *none*, 1 = *minimal* (only when asked), 2 = *a lot*), and homework completion (0 = *no homework completed*, 1 = *homework partially completed*, 2 = *homework completed*).

Acceptability

Post-BA group feedback questionnaire. The Brief BA feedback questionnaire (Pass et al., 2018) was used to determine acceptability at the end of the 5-session group BA prevention program. It is a self-report measure with three forced choice questions about whether participants liked the BA approach (1 = *really liked it* to 5 = *really disliked it*), whether the participants found the BA approach useful (1 = *a lot* to 5 = *not at all*), and whether they would recommend the BA approach to a friend (1 = *absolutely* to 5 = *absolutely not)* (Pass et al., 2018). Two open-ended questions asking the participants to describe what they liked the most and what they liked the least about the BA approach were also asked (Pass et al., 2018).

Post-BA group semi-structured qualitative interview. Given that this was a pilot study of a novel prevention program, a semi-structured qualitative interview was conducted post-group with eight open-ended questions pertaining to the participants general appreciation of the program; what they liked most and what they liked the least about the program; if they felt the program was suited to their needs; what changes they felt resulted from the program (if any); if they saw changes in how they act and feel at home, at school, or with peers; whether they experienced any negative changes, and; any suggestions to improve the program.

Potential impact of the program

Depressive symptoms and diagnoses. In addition to inclusion criteria, the Center for Epidemiological Study – Depression Scale (CES-D; Radloff, 1977) was used to evaluate the exploratory clinical impact of the prevention program. The CES-D is a one page, 20-item self-report measure of depressive symptoms, during the past week, with a maximum total score of 60, with higher scores indicating more depressive symptomatology (Radloff, 1977). The CES-D has

good psychometric properties with satisfactory internal consistency (α = .85) and moderate test-retest reliability (r = .45 – .70) (Radloff, 1977; Chabrol, Montavany, Chouicha & Duconge, 2002). Sixteen items assessing major depressive symptoms during the past month and based on the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; DSM-IV; American Psychiatric Association, 1994) were adapted by Stice et al. (2004) from the depression module of the Kiddie Schedule for Affective Disorders and Schizophrenia, Present and Lifetime (KSADS-PL; Kaufman, Birmaher, Brent, Rao, & Ryan, 1996) a semi-structured interview administered by trained psychology doctoral research assistants. The KSADS-PL (Kaufman et al., 1996) is generally answered by parents and adolescents, but we only collected data from the adolescent, consistent with author studies (Stice et al., 2004). Total scores range from 13-52, with higher scores indicating a depressive diagnosis. Symptoms are rated via a four-point response format (1 = *not at all* to 4 = *severe symptoms*), with ratings of 3 and 4 suggesting diagnostic levels. The depression module has shown good test-retest reliability (k = .63 – 1.00), interrater reliability for depression diagnosis (k = .73 – 1.00), internal consistency (α = .68 – .84) and predictive validity for the symptom composite (Stice et al., 2010).

Behavior change. The Behavioral Activation for Depression Scale (BADS; Kanter, Mulich, Busch, Berlin, & Martell, 2007) was one measure used to evaluate behavior change via behavioral activation. The BADS is a 25-item self-report questionnaire that assesses activation, avoidance/rumination, work/school impairment, and social impairment using a six-point response format (0 = *not at all*, 2 = *a little*, 4 = *a lot*, 6 = *completely*) with total scores ranging between 0 and 150. A higher total score is indicative of more activation and less avoidance (Kanter et al., 2007). Higher scores on avoidance/rumination, work/school impairment and social impairment are consistent with the subscale title (Kanter et al., 2007). The internal consistency of the BADS is acceptable (α = 0.79) (Kanter et al., 2007). We also explored potential behavior change in terms of pleasant activities people may have enjoyed during the past 30 days using the Pleasant Events Scale (PES; MacPhillamy & Lewinsohn, 1982). The PES consists of 320-items of specific pleasant activities people may have done in the past 30 days via a 3-point response format (0 = *this has not happened in the past 30 days*, 1 = *this has happened a few times (1 to 6) in the past 30 days*, 2 = *this has happened often (7 or more) in the past 30 days*). Furthermore, the PES consists of 320-items on how pleasant the activity was (0 = *the event is not pleasant for me*, 1 = *this event may be pleasant for me*, 2 = *this event is very pleasant for me*). Test-retest reliability was adequate at one-

month (k = .69 – .88), at 2-months (k = .49 – .79) and at 3 months (k = .50 – .72) (MacPhillamy & Lewinsohn, 1982).

The BA prevention program

The 5-session group BA prevention program for adolescent depression was developed by the authors of this study and faciliated by the first author (see Table 2). The program includes components that are consistently used across BA models: brief explanation of the behavior-mood model of depression providing examples of when we do activities based on how we feel vs doing planned activities regardless of how we feel. The first four sessions were dedicated to teaching a specific BA activity and a strategy each week. The BA activities presented, one each week, were: engaging in pleasant activities (Week 1), mastery-based activities (Week 2), and value-based activities split into personal value-based activities (Week 3) and relationship value-based activities (Week 4). The strategies presented, one each week, were: planning activities (Week 1), problem-solving (Week 2), involving supportive people (Week 3) and rewards (Week 4). We also briefly touched upon barriers to completing activities and identifying triggers that can affect participating in planned activities, with coping suggestions provided. In-between session work was assigned at the end of each session. During the final session (Week 5), relapse prevention and summary tables of the entire program were presented and reviewed.

Results

Analysis

Descriptive statistics regarding participant characteristics, feasibility, acceptability, and exploratory clinical outcomes (i.e., potential impact) can be seen in Table 1, Table 3 and Table 4. Pretest to posttest data were all compared using a non-parametric Wilcoxon signed-ranks test given that assumptions for parametric testing (i.e., paired t-tests) were violated (Field, 2013). A $p < .05$ significance level was used. Because of the exploratory nature of this study, statistical power was not calculated to assess specific outcomes. The Pearson's correlation coefficient r was used to calculate effect sizes (.10 = small, .30 = medium, .50 = large) (Kazdin, 2016; Field, 2013). Of note, for the data analyses of the KSADS-PL (Kaufman et al., 1996), we removed the participant who presented with clinical depression at pretest but did not complete the posttest evaluations.

Feasibility

On average, the participants attended 3.4 sessions (*SD* = 1.01) out of five, with 5/9 participants (56%) attending four or more sessions. All participants actively participated in all the sessions (*M* = 1.69, *SD* = 0.37), with regular homework completion (*M* = 0.99, *SD* = 0.56). Of note, the fourth and fifth sessions took place via videoconference after a three-week pause due to the pandemic and resultant government-directed school closures and lockdown. Throughout the course of the program, different participants missed the group sessions at different times (most were declared sick). Only for the last two sessions, three participants withdrew from the group citing new responsibilities as a result of the pandemic. Six out of nine (66.7%) participants completed the posttest evaluations.

Acceptability

As per the Brief BA feedback questionnaire (Pass et al., 2018), where a maximum score of 1 indicates a positive response, the participants reported, on average, that they liked the BA approach (*M* = 1.5, *SD* = 0.6), that they found it useful (*M* = 1.3, *SD* = 0.5) and that they would recommend it to a friend (*M* = 1.3, *SD* = 0.5). In response to the open-ended question regarding what was liked the most about the prevention program, participants indicated that: the group aspect facilitated emotional expression; they felt safe to express emotions; they related to peers in the group; they gained a greater understanding of depression and strategies to cope; their feelings were validated; they realized they were already engaging in BA, and; they reported benefits to participating in value-based activities. In response to what they liked the least about the program, participants indicated: the timing of the group (during school hours); planning out activities because of difficulties with follow-through; filling out the questionnaires; not enough one-on-one time with the group facilitator; the sessions were not long enough, and; for some, crying in front of peers. Furthermore, six out of nine participants reported that they were happy that the program was going to continue, via videoconference, during the pandemic.

As per the semi-structured qualitative post-group interviews at posttest, the summarized answers are in Table 4 and participants provided information on the changes they noticed from participating in the program:

"I go to the gym more […] go on walks with my mom […] spend quality time with family" (Participant 2 [P2]);

"the value-based activities had the biggest effect on my everyday life […] because I realize the effect it has on me […]" (P3);

"I'm more conscientious about things I'm doing now due to the activities that aimed to make us feel better [and] I'm finding things that make me happy more than before" (P4);

"I adopted a healthy routine (i.e., get up early, go to gym […])" (P5);

"it's easier to organize daily activities now (i.e., school and for fun)" (P7), and;

"I feel like I actually have something I can do now to make it better" (P9).

Furthermore, the participants provided input on how to improve the program:

"start [the] program earlier in the year and make it longer than five sessions" (P2);

"more one on one time with the facilitator" (P3);

"[…] no suggestions […] it was fun" (P4);

"have better questionnaires […] [that are] shorter and more specific" (P5);

"I would have liked longer sessions […] to discuss what was presented in the group" (P7), and;

"for me, it definitely helped […] [but] I'm not sure it would help people who think about death or who have more severe depression" (P9).

Potential outcomes

Depression diagnosis and symptoms

Table 3 presents pretest and posttest results for the potential outcome measures. No significant difference was found for the one-week retrospective depressive symptomatology from pretest to posttest, as per the CES-D (Radloff, 1977), $Z = -3.18$, $p = .750$, meaning there was no increase or decrease. However, there was a significant difference in the KSADS-PL (Kaufman et al., 1996) from pretest ($Mdn = 27.00$) to posttest ($Mdn = 21.50$) indicating overall improvement in subclinical depression scores (i.e., no participants presented with clinical depression at posttest), $Z = -2.21$, $p = .027$, $r = -.61$ (large effect size). As described in the analysis section, the participant who was removed from the KSADS-PL (Kaufman et al., 1996) data analysis did not change results obtained (i.e., data analyses were run with their pretest data and without, to compare, and the

significant difference remained). The one participant who presented with clinical depression at pretest and completed the posttest evaluation, was no longer clinically depressed at posttest. Therefore, the four-week retrospective subclinical depressive symptoms diminished as per the KSADS-PL (Kaufman et al., 1996), but the one-week restrospective depressive symptoms, as per the CES-D (Radloff, 1977), did not, although they did not worsen.

Behavioral change

There was no significant difference in the total BADS (Kanter et al., 2007) score from pretest to posttest, Z = -0.73, p = .463, meaning that behavioral activation did not increase or decrease. As for BADS (Kanter et al., 2007) subscales, only a significant difference (i.e., improvement) from pretest (*Mdn* = 15) to posttest (*Mdn* = 11.5) was found for the subscale work/school impairment, Z = -2.20, p = .028, r = - .61 (large effect size).

Furthermore, there was a significant difference from pretest (*Mdn* = 0.72) to posttest (*Mdn* = 0.61) in how often participants were engaging in pleasant activities as per the PES (MacPhillamy & Lewinsohn, 1982), indicating that participants were doing fewer pleasant activities at post-test, Z = - 2.20, p = .028, r = - .61 (large effect size). There was no significant difference in how enjoyable the participants experienced pleasant activities from pretest to posttest, Z = - 0.94, p = .345. There was a significant difference in the cross-product, (i.e., how often x how pleasant), from pretest (*Mdn* = 0.91) to posttest (*Mdn* = 0.85) , Z = - 2.21, p = .028, r = - .61 (large effect size). The cross-product score, at posttest, indicates that the participants were not engaging in the kinds of activities they would potentially enjoy (MacPhillamy & Lewinsohn, 1982).

Discussion

The aim of this pilot study was to determine the feasibility, acceptability and potential impact of a novel 5-session group BA prevention program for adolescents at-risk of depression in a Canadian public high school setting. The recruitment, participation and retention of participants, even with the government-directed school closures and lockdown due to the pandemic, demonstrate feasibility and acceptability. The homework completion rates are lower than what participants reported doing in between sessions because they did their own BA activities and did not document all of them. This could indicate the importance of having a discussion with the participants about the homework and coding of it based on what they are actually doing, not only

what they wrote, especially considering that the six participants who completed the posttest measures all indicated that they were doing BA activities outside of sessions. Furthermore, the predominantly positive feedback from the participants, the fact that six out of nine participants wanted to continue the groups via videoconferencing while they were at home due to the government directives regarding school closures and lockdown due to the pandemic, and the completion of posttest measures in this context indicate that the program was acceptable to the participants.

The uncontrolled study design does not allow for the possibility of determining the impact of the prevention program on any of the potential outcome measures. Furthermore, the pandemic added extra noise, limiting the opportunity for outdoor pleasant activities and activities with others, for instance. The results regarding depressive symptoms over the past week (CES-D; Radloff, 1977) appear to indicate that, overall, participants continued to have depressive symptoms. Of note, at posttest and due to the pandemic, the participants had been informed, the week posttest evaluations were completed, that they were not going to have a grad or prom, and were reportedly disappointed about this. Furhermore, seven out of nine participants found out that their Europe trip was cancelled the week the posttest evaluation was completed, which could explain why there was no significant difference in depressive symptoms over the past week (i.e., as per the CES-D; Radloff, 1977). However, participants who had presented with subclinical depressive symptoms over the past month at pretest, as per the KSADS-PL (Kaufman et al., 1996), no longer presented with subclinical depressive symptoms at posttest, which is statistically significant. Rather, it seems that participants had noted overall improvement over the past month, as assessed at posttest. Furthermore, the participant who did present with clinical depression at pretest did not present with clinical depression at posttest, rather she presented with sublinical depressive symptoms. These results are interesting given that an aim the 5-session group BA prevention program program was to prevent depressive disorders in at-risk adolescents. Furthermore, six out of nine participants (66.7%) mentioned family conflicts with their parents as a source of their depressive mood (see Table 2) and, as per Costello (2002, p. 533), "there is a considerable familial component to unipolar depression" and a number of parent and family factors are linked to the risk of depression in youth (Sander & McCarty, 2006). Interestingly, depressive symptoms did not worsen although the participants had all been confined with their parents for three weeks at the time posttest measures were completed and subclinical depressive symptoms improved significantly since pretest. In sum,

although one-week retrospective depressive symptoms remained stable (as per CES-D; Radloff, 1977), four-week retrospective subclinical depressive symptoms decreased (as per KSADS-PL; Kaufman et al., 1996), even with difficult consequences stemming from the pandemic. These findings lend support for future studies to investigate this program.

With regards to behavioral change, the improvement in work/school impairment may be because the participants were home due to the government directed school closures and lockdown in response to the pandemic at the time the posttest measures were completed by the participants, therefore such impairments were not a perceived issue at the time. Furthermore, the decrease in how often participants engaged in pleasant activities is possibly linked to the pandemic and the government advising people to stay home, as there was no significant decrease in the pleasure they experienced from engaging in the pleasant activities. In fact, the significant difference found in the cross-product (i.e., how often they did the activities X how pleasurable they experienced them), suggests less engagement in potentially pleasurable activities. This result can indicate that they still perceive pleasant activities as quite enjoyable, even though they were not engaging in them at the time of posttest.

In sum, this pilot study demonstrates feasibility and acceptability and appears to engage adolescents. It is, however, necessary to evaluate it with a larger sample and with control conditions to determine its efficacy as an adolescent depression prevention program.

References

American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Arlington, VA: author.

American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: author.

Avenevoli, S., Knight, E., Kessler, R. C. & Merikangas, K. R. (2008). Epidemiology of depression in children and adolescents. In J. R. Z. Abela & B. L. Hankin (dir.), Handbook of depression in children and adolescents. New York : Guilford Press.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). Manual for the Beck Depression Inventory-II. San Antonio, TX: Psychological Corporation.

Bertha, E. A., & Balázs, J. (2013). Subthreshold depression in adolescence: A systematic review. *European Child and Adolescent Psychiatry, 22*, 589-603. doi:10.1007/s00787-013-0411-0

Birmaher, B., Ryan, N. D., Williamson, D. E., Brent, D. A., Kaufman, J., Dahl, R. E., … Nelson, B. (1996). Childhood and adolescent depression : A review of the past 10 years. Part 1. *Journal of the American Academy of Child and Adolescent Psychiatry, 35*(11), 1427-1439. doi:10.1097/00004583-199611000-00011

Chabrol, H., Montavany, A., Chouicha, K., & Duconge, E., (Sep 2002). Study of the CES-D on a sample of 1953 adolescent students. *L'Encéphale, 28*(5), 429-432.

Cheung, A. H., & Dewa, C. S. (2006). Canadian community health survey: major depressive disorder and suicidality in adolescents. Healthcare Policy, 2(2), 76-89.

Cohen, S. L. (2014). *A meta-analysis of school-based depression prevention programs for children and adolescents.* (Doctoral dissertation, Brigham Young University). Retrieved from https://scholarsarchive.byu.edu/etd/3970

Costello, E. J., Pine, D. S., Hammen, C., March, J. S., Plotsky, P. M., Weissman, W. M.,…Leckman, J. F. (2002). Development and natural history of mood disorder. *Bioligical Psychiatry, 52*, 529-542. doi:10.1016/s0006-3223(02)01372-0

Dimidjian, S., Barrera Jr., M., Martell, C., Muñoz, R. F., & Lewinsohn, P. M. (2011). The origins and current status of behavioral activation treatment for depression. *Annual Review of Clinical Psychology, 7,* 1-38. doi:10.1146/annurev-clinpsy-032210-104535

Dimidjian, S., Dobson, K. S., Kohlenberg, R. J., Gallop, R., Markley, D. K., Atkins, D. C.,…Jacobson, N. S. (2006). Randomized trial of behavioral activation, cognitive therapy and antipdepressant medication in the acute treatment of adults with major depression. *Journal of Counselling and Clinical Psychology, 74*(4), 658-670. doi:10.1037/0022-006X.74.4.658

Ekers, D., Weber, L., Van Straten, A., Cuijpers, P., Richards, D., & Gilbody, S. (2014). Behavioral activation for depression: An update of meta-analysis of effectiveness and sub-group analysis. *PLoS ONE 9*(6): e100100. doi:10.1371/journal.pone.0100100

Field, A. (2013). *Discovering statistics using IBM SPSS statistics.* Thousand Oakes, California: SAGE Publications Ltd.

Garber, J., Webb, C. A., & Horowitz, J. L. (2009). Prevention of depression in adolescents: A review of selective and indicated programs. In S. Nolen-Hoeksema & L. M. Hilt (Eds.). *Handbook of depression in adolescents* (pp. 619-659). New York, NY: Routledge/Taylor & Francis Group.

Gladstone, T. R., & Beardslee, W. R. (2009). The prevention of depression in children and adolescents: a review. Canadian Journal of Psychiatry, 54(4), 212-221. doi:10.1177/070674370905400402

Hetrick, S. E., Cox, G. R., and Merry, S. N. (2015). Where to go from here: An exploratory meta-analysis of the most promising approaches to depression prevention programs for children and adolescents. *International Journal of Environmental Research and Public Health, 12*, 4758-4795. doi:10.3390/ijerph120504758

Hetrick, S. E., Cox, G. R., Witt, K. G., Bir, J. J., & Merry, S. N. (2016). Cognitive behavioral therapy (CBT), third-wave CBT and interpersonal therapy (IPT) based interventions for preventing depression in children and adolescents. *Cochrane Database Systematic Review*, 8, CD003380. doi:10.1002/14651858.CD003380.pub4

Horowitz, J. L., & Garber, J. (2006). The prevention of depressive symptoms in children and adolescents: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 74*(3), 401-415. doi:10.1037/0022-006X.74.3.40

Jaycox L. H., Stein, B. D., Paddock, S., Miles, J. N. V., Chandra, A., Meredith, L. S., …Burnam, M. A. (2009). Impact of teen depression on academic, social, and physical functioning. *Pediatrics, 124*(4), 596-605. doi:10.1542/peds.2008-3348

Kanter, J. W., Manos, R. C., Bowe, W. M., Baruch, D. E., Busch, A. M., & Rusch, L. C. (2010). What is behavioral activation: A review of the empirical literature. *Clinical Psychology Review, 30*, 608-620. doi:10.1016/j.cpr.2010.04.001

Kanter, J. W., Mulick, P. S., Busch, A. M., Berlin, K. S., & Martell, C. R. (2007). The behavioral activation for depression scale (BADS): Psychometric properties and factor structure. *Journal of Psychopathology and Behavioral Assessment, 29*, 191-202. doi: 10.1007/s10862-006-9038-5

Kazdin, A.E. (2016). *Methodological issues and strategies in clinical research* (4th Ed.). Washington, DC: American Psychological Association.

Lewinsohn, P. M., Rohde, P., Seeley, J. R., Klein, D. N., & Gotlib, I. H. (2003). Psychosocial functioning of young adults who have experienced and recovered from major depressive disorder during adolescence. *Journal of Abnormal Psychology, 112*(3), 353-363. doi:10.1037/0021-843X.112.3.353

MacPhillamy, D. J., & Lewinsohn, P. M. (1982). The pleasant events schedule: Studies on reliability, validity, and scale intercorrelations. *Journal of Consulting and Clinical Psychology. 50.* 363-380. doi:10.1037/0022-006X.50.3.363

McCauley, E., Schloredt, K., Gudmundsen, G., Martell, C., & Dimidjian, S. (2016). *Behavioral activation with adolescents: A clinician's guide.* New York, NY: Guilford Press.

Muñoz, R. F., Cuijpers, P., Smit, F., Barrera, A. Z., & Leykin, Y. (2010). Prevention of major depression. *Annual Review of Clinical Psychology, 6*, 181-212. doi:10.1146/annurev-clinpsy-033109-132040

Pass, L., Hodgson, E., Whitney, H., & Reynolds, S. (2017). Brief behavioral activation treatment for depressed adolescents delivered by nonspecialist clinicians: A case illustration. *Cognitive and Behavioral Practice, 25*(2), 208-224. doi:10.1016/j.cbpra.2017.05.003

Pass, L., Lejuez, C. W., & Reynolds, S. (2018). Brief Behavioral Activation (Brief BA) for adolescent depression: A pilot study. *Behavioral and Cognitive Psychotherapy, 46*(2), 182-194. doi:10.1017/S1352465817000443

Pearson, C., Janz, T., & Ali, J. (2013). *Mental and substance use disorders in Canada* (Catalogue number 82-624-X). Ottawa, ON: Statstics Canada. Retrieved from https://www150.statcan.gc.ca/n1/pub/82-624-x/2013001/article/11855-eng.htm

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychology Measurement, 1*(3), 385-401. doi:10.1177/014662167700100306

Sander, J. B., & McCarty, C. A. (2006). Youth depression in the family context: Familial risk factors and models of treatment. *Clinical Child and Family Psychological Review, 8*(3), 203-219. doi: 10.1007/s10567-005-6666-3

Singhal, M., Manjula, M., & Sagar, J. V. (2015). Adolescent depression prevention programs: A review. *Journal of Depression and Anxiety, 4*(4), 1-7. doi:10.4197/2167- 1044.1000197

Springer, F., & Phillips, J. L. (2006). The IOM model: A tool for prevention planning and implementation. *Prevention Tactics, 8*(13), 1-8. Retrieved from http://www.cars-rp.org/wp-content/uploads/2014/06/Prevention-Tactics-Vol08-No13-2006.pdf

Statistics Canada. (2014). *Professional and informal mental health support reported by Canadians aged 15 to 24.* (Catalogue no. 82-003-X). Retrieved from https://www150.statcan.gc.ca/n1/en/pub/82-003-x/2014012/article/14126-eng.pdf?st=2SmfIBGf

Statistics Canada. (2017). *Depression and suicidal ideation among Canadians aged 15-24*. (Catalogue number 82-003-X). Retrieved from https://www150.statcan.gc.ca/n1/pub/82-003-x/2017001/article/14697-eng.htm

Stice, E., Rohde, P., Gau, J., & Ochner, C. (2004). Relation of depression to perceived social support: Results from a randomized adolescent depression prevention trial. *Behavior Research & Therapy, 49*(5), 361-366. doi: https://dx.doi.org/10.1016/j.brat.2011.02.009

Stice, E., Rohde, P., Gau, J. M., & Wade, E. (2010). Efficacy trial of a brief cognitive-behavioral depression prevention program for high-risk adolescents: Effects at 1- and 2-year follow-up. *Journal of Consulting and Clinical Psychology, 78*, 856-867. doi: 10.1037/a0020544

Takagaki, K., Okamoto, Y., Jinnin, R., Mori, A., Nishiyama, Y., Yamamura, T.,…Yamawaki, S. (2018). Enduring effects of a 5-week behavioral activation program for subthreshold depression among late adolescents: An exploratory randomized controlled trial. *Neuropsychiatry Disorders Treatment, 14*, 2633-2641. doi:10.2147/NDT.S172385

Tindall, L., Mikocka-Walus, A., McMillan, D., Wright, B., Hewitt, C., & Gascoyne, S. (2017). Is behavioral activation effective in the treatment of depression in young people? A

systematic review and meta-analysis. *Psychology and Psychotherapy: Theory, Research and Practice, 90,* 770-796. doi:10.1111/papt.12121

Werner-Seidler, A., Perry, Y., Calear, A. L., Newby, J. M., & Christensen, H. (2017). School-based depression and anxiety prevention programs for young people: A systematic review and meta-analysis. *Clinical Psychology Review, 50,* 30-47. doi:10.1016/j.cpr.2016.10.005

World Health Organization (WHO). (2014). *WHO Depression*. Retrieved June 26, 2018, from http://www.who.int/mediacentre/factsheets/fs369/en/

Table 1

Participant characteristics

Characteristics	*M (SD)* or *n* (%)
Sex	
Female	6 (67%)
Male	3 (33%)
Age range (years)	16-17
Mean age in years (SD)	16.44 (0.53)
Ethnicity	
Caucasian	6 (67%)
Other	3 (33%)
Clinical depression at pretest	2 (22.2%)
Subclinical depressive symptoms at pretest	7 (77.8%)
Medication (ADHD)	1 (11.1%)
Self-reported history of peer bullying	4(44%)
Self-reported conflict with parents	6 (67%)
Active suicidal ideation	0%

Table 2

BA prevention program: Session titles and content

Session title	Content
Session 1: Let's plan to have fun!	Intro to BA and pleasant activities, planning activities in advance, barriers, homework
Session 2: Doing what I'm good at!	Homework review + recap, mastery-based activities, problem-solving, homework
Session 3: I know what matters to me!	Homework review + recap, personal value-based activities, involving supportive people, homework
Session 4: I know what matters to me in relationships	Homework review + recap, relationship value-based activities, rewards, homework
Session 5: Moving on, moving forward…just keep moving!	Homework review + recap, summary of four sessions, triggers, relapse prevention

Table 3

Means and standard deviations on outcome variables at pretest and posttest

Measure	Pretest ($N = 9$)		Posttest ($N = 6$)	
	M	*SD*	*M*	*SD*
CES-D	29.56	9.79	27.50	13.50
KSADS-PL	28.38	5.73	21.83	4.96
BADS (total)	71.33	9.59	65.50	24.92
Activation subscale	22.33	4.56	17.17	7.19
Avoidance/Rumination subscale	24.56	13.12	24.33	14.71
Work/school impairment subscale	17.67	6.54	11.50	7.50
Social impairment subscale	6.78	4.65	12.50	8.98
PES (total)	0.90	0.12	0.87	0.13
How often?	0.71	0.13	0.59	0.09
How pleasant?	1.09	0.09	1.15	0.20

Table 4

Participant likes and dislikes of BA prevention program

Likes of BA program	Dislikes of BA program
Organizing activities to do outside of sessions[a]	Sessions did not allow enough time for exchange[e]
Doing activities outside of sessions[a]	Sessions too short for discussion[e]
Group format[b]	More than five sessions would be better[e]
Group facilitator was understanding, easy to talk to[c]	Missed a favourite class[e]
Felt safe in the group[d]	A questionnaire was too long, had irrelevant items[e]

Note. Total respondents, $N = 6$.

[a]$n = 6$. [b]$n = 5$. [c]$n = 4$. [d]$n = 3$. [e]$n = 1$.

Appendix A. Information and Consent Form

Université de Montréal

INFORMATION AND CONSENT FORM

Project title:	Behavioural Activation to prevent depression in at-risk adolescents: a pilot feasibility and acceptability study
Researcher:	Tania Lecomte, PhD, full professeur, Département de psychologie, Université de Montréal
Student researcher:	Stephanie Belanger, doctoral candidate, Département de psychologie, Université de Montréal

Hello! This document was brought home to be given to you by your adolescent and it was also emailed to you. Your adolescent is invited to participate in a research project, with your consent first and then their assent. Before accepting, take the time to read and understand this document. It presents the participant conditions. Please do not hesitate to ask any questions!

Please note: In this document, "they", "them" and "their", refer to your adolescent

***** Note that you can, at any moment, withdraw your child from this project by contacting the research team. ******

A) INFORMATION FOR PARTICIPANTS

1. Research objectives

The aim of this project is to evaluate the feasibility, acceptability, and preliminary effects of a novel **5-week group Behavioural Activation (BA) prevention program (1hr/week)** to improve the well-being of adolescents at risk of depression in a high school setting. Behavioural Activation involves the use of behavioural strategies to decrease depressive symptoms and the onset of depressive diagnoses by increasing adaptive activity involvement based on engaging in activities that are pleasant, that involve a sense a mastery, and that are of value. The evaluation of feasibility will assess whether adolescents come to the sessions and participate and whether they use the strategies outside of sessions; the evaluation of acceptability will assess whether they were satisfied with the program, what they liked/disliked, was it useful and would they recommend it to a friend. The evaluation of preliminary effects will assess whether the program decreases depressive symptoms and the onset of a depressive disorder and whether it improves overall functioning in the adolescents.

2. Participating in the research

The following describes a two-step process of your adolescent's participation in the research project.

Step One

The students will have to meet specific inclusion and exclusion criteria to be considered for this study:

Inclusion criteria (i.e., "must-have" criteria)
1) Having elevated depressive symptoms;
2) Being between 14 and 18 years of age.

Exclusion criteria (i.e., "must not have" criteria)
1) Do not meet the criteria for clinical depression;
2) Have not received a diagnosis nor are taking medication for one of the following conditions: conduct disorder, neurodevelopmental disorder, language disorder, substance use disorder, or oppositional defiant disorder.

These criteria will be assessed by a screening procedure conducted jointly with school professionals. Inclusion criteria regarding depressive symptoms will be evaluated via a brief 20 item questionnaire administered to your adolescent and they will have to be between 14 and 18 years old. Exclusion criteria will be evaluated in students who meet the inclusion criteria during a meeting with a member of the research team. If your adolescent meets the inclusion and exclusion criteria, they will be given two options: 1) they will be invited to participate in this research project OR 2) they will be asked if they would like to seek alternative mental health services, thereby not participating in this research project. If your adolescent wishes to participate in the project, they will proceed to Step Two.

Step Two

Your adolescent's participation in the research involves:

Part A

They will complete research assessment at three times:

Time 1: pre-intervention (before the Behavioural Activation program starts) (1hr),
Time 2: post-intervention (right after completion of the Behavioural Activation program, 1.5hrs – extra time because of a qualitative interview), and
Time 3: 3-months post-intervention (3-months after the Behavioural Activation program (1hr)).

The three assessment times will each involve filling out questionnaires (150 items in total) and doing a 45-minute clinical interview with a research assistant.

Suicidal risk: Your adolescent will also be screened for suicidal thoughts at all three assessment times and, if they present with active suicidal thoughts, you and the identified school personnel will be notified immediately and measures to ensure the safety of your adolescent will be put into place immediately.

Part B

Taking part in the Behavioral Activation (BA) prevention program that is under evaluation:

- 5 weekly group sessions of 1hr/week at school, conducted by a trained doctoral psychology student;
- **Structure and format of the Behavioural Activation (BA) sessions**: Each of the first four sessions introduces a healthy behaviour and a strategy.
    - **Session 1**: Healthy behaviour – doing fun activities; Strategy – planning in advance
    - **Session 2**: Healthy behaviour – doing an activity based on your adolescent's skills and strengths; Strategy – problem-solving
    - **Session 3**: Health behaviour – doing an activity based on your personal values; Strategy – involving others in your activities (e.g., close friends/family);
    - **Session 4**: Healthy Behaviour – doing an activity based on your relationship values (i.e., relationships with others (e.g., family, friends); Strategy – rewarding oneself for engaging in healthy behaviours
    - **Session 5**: Recap and consolidation of learned healthy behaviours and strategies, relapse prevention

3. Potential risks and disadvantages

One of the potential disadvantages/risks to your adolescent is that the 5-week Behavioural Activation prevention program may take place during lunch one day/week and/or after school so that they do not miss class time.

A second potential disadvantage/risk is that they may feel uncomfortable participating in the group format of Behavioural Activation prevention program. Should this be the case, your adolescent will be encouraged to speak with the research team at any time and we will determine the best course of action to support their needs. They can leave the sessions at any time and they can refuse to answer any questions that make them uncomfortable. If depressive symptoms increase at any time during the program, the research team will encourage your adolescent to seek services and will involve any and all necessary partners and authorities as indicated.

Finally, a third potential disadvantage/risk is the possibility of stigmatisation if your adolescent divulges their involvement in the research. Stigma refers to the feeling of shame or discredit from others. To avoid this risk, we will work with the school to make sure that your adolescent's participation in this research is not disclosed publicly. The research team, in consultation with the school personnel, will speak with your adolescent in the group about what to say to peers if they are asked about their involvement in the research.

4. Potential benefits and advantages

This research aims to determine whether the research program is feasible, acceptable and the preliminary effects of a 5-week group Behavioural Activation program that is showing promise to help adolescents feel better if they have been having depressive symptoms. As such, participating in this program may improve your adolescents' well-being, decrease their depressive symptoms and decrease the onset of a major depressive disorder. However, we cannot guarantee these benefits before we obtain research results.

5. Confidentiality

Personal information that your adolescent provides will remain confidential. Under no circumstances will this information be revealed to anybody. Furthermore, your adolescent will be attributed a code to preserve their privacy and only the research team (i.e., the principal researcher, co-researchers, and research assistants who are associated with this project) will have access to their personal information and their code. Your adolescent's information will be conserved in a secure location (i.e., locked filing cabinet, password protected/encrypted file on computer, coded with a key kept separate) for seven years, as per Université de Montréal guidelines. Only the data that does not identify them will be conserved after the research is completed.

However, there are limits to confidentiality. Should your adolescent divulge a situation (1) where their safety, security or development are compromised and/or (2) where there is a risk of imminent harm to themselves or others, the research team would need to disclose this information to the proper authorities (i.e., the school, yourselves and/or the Department of Youth Protection (DYP) and/or 911). You would also be immediately informed by the research team. Also, if we find at any time during this project that your adolescent has symptoms that reach the level of clinical depression, we will share this information with school staff and you, the parents.

6. Compensation

Your adolescent may receive financial compensation for their participation once they are deemed eligible to participate in the 5-week group Behavioural Activation prevention program. They will receive $15 for completing the questionnaires <u>before</u> the 5-week group Behavioural Activation prevention program commences and $15 for completing the questionnaires and doing a brief qualitative semi-structured interview <u>after</u> they finish the 5-week group Behavioural Activation prevention program.

7. Right to withdraw from the research

<u>Participation in this research project is completely voluntary and you and your adolescent can refuse to participate in this study at any and all times by contacting the research team.</u>

Your adolescent also has the right to refuse to participate in this study at any and all times. They may decline to answer any questions, and; they may withdraw from the study at any time and for any reason without justification or consequence to them or you. Whether they choose to participate or

not will not result in any loss or benefit to which they are otherwise entitled (e.g., a referral to appropriate services). Should you withdraw your consent for your adolescent to participate in the research, or should your adolescent withdraw from the study, their data will be destroyed. Once the research is complete all information in the study concerning you and your adolescent can be destroyed, at your request and/or at your adolescent's request. However, once the publication process for the research is underway, it will no long be possible to destroy or retract the analyses and results of your data.

For all information related to this project, or to withdraw from this project, please communicate with Stephanie Belanger at the following e-mail address: stephanie.belanger.8@umontreal.ca.

For all concerns regarding your rights, your adolescent's rights or the researchers responsibilities concerning your participation in this project, please contact the *Comité d'éthique de la recherche en éducation et en psychologie* by e-mail at cerep@umontreal.ca or by phone at 514 343-6111 extension 1896 or consult our website at http://recherche.umontreal.ca/participants.

All complaints related to your participation or your adolescent's participation in this research can be addressed to the ombudsman at
l'Université de Montréal by calling 514 343-2100 or communicating by email at ombudsman@umontreal.ca **(the ombudsman accepts collect calls).**

B) CONSENT

Parent declaration

- I understand that I can take my time and reflect before I give my consent or not for my adolescent to participate in this research
- I can pose questions to the research team and obtain satisfactory answers
- I understand, by consenting to my adolescent's participation in this research project, that I do not renounce my rights, nor do I release the researchers of their responsibilities
- I have reviewed the present information in this document, and I consent to my adolescent's participation in the research project

Signature of parent: _____ Date: _____

Family name: _____ First name: _____

For the adolescent:

- I have reviewed the present information in this document, and, with my parent's consent, I assent to participating in the research project

Signature of adolescent: _____ Date: _____

Family name: _____ First name: _____

Researcher's commitment

I explained the conditions of participating in the research project to the participants. I answered their questions to the best of my ability, and I ensured my understanding of the participants comments and questions. I commit, with the research team, to respect what was consented upon in the present information and consent form.

Researcher's signature: _____ Date: _____
(or researcher's representative)

Family name: _____ First name: _____

You can contact the research assistants (please email Stephanie Belanger : stephanie.belanger.8@umontreal.ca) to answer any and all questions you may have about the research so that you can liberally provide your informed consent and your adolescent can provide their informed assent. Their participation in the research described above consists of obtaining your signed consent and their assent.