Expressive Writing for Adolescent Mental Health and Emotion Regulation: Intervention

Outcomes and Implementation Considerations

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Abstract

Given that difficulties with emotional-regulation skills (e.g., suppressing emotions) are linked to poor mental health outcomes (for example, symptoms of depression), there is a need to develop interventions that encourage the development of emotion-regulation skills during the key developmental window of adolescence (Gross, 2015; Gross & John, 2003). A simple and brief intervention, expressive writing, is thought to promote emotion regulation and other positive mental health outcomes through writing about stressful or emotional topics (Travagin et al., 2015). Several studies of expressive writing for youth experiencing social-emotional difficulties have found encouraging results such as increasing resilience, lowering levels of aggression, emotional lability, and symptoms of traumatic grief (Greenbaum & Javdani, 2017; Kalantari et al., 2012; Kliewer et al., 2011). However, the effectiveness of EW interventions varies greatly across studies, which may be partly explained by how EW interventions are implemented. It also remains unclear whether expressive writing helps adolescents improve their emotion regulation skills. As expressive writing interventions for adolescents become increasingly popular and more widely used, rigorous reporting of implementation can help advance this emerging field by informing how variation in implementation across studies influences intervention outcomes. To understand the effective implementation of expressive writing and its impact on emotion regulation skills and practices, two guiding theoretical models/frameworks are employed. First, Gross' (1998) process-oriented model of emotion regulation frames this research study to facilitate understanding of emotion regulation outcomes stemming from expressive writing. Gross' model groups emotion regulation into five families of strategies organized by when they occur in the emotion generative process and is used in this study as a guide to consider emotion regulation processes and outcomes occurring during the intervention. Second, Chen's

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(2014) conceptual framework for developing program theory provides a comprehensive

overview of the contextual factors that influence implementation. Chen's framework posits that

the intervention effect is a joint effect of the intervention (e.g., intervention-related variables

such as the intervention dose and fidelity of implementation) and the factors in the action model

(e.g., implementer-related factors such as provider engagement and the ecological context).

Chen's framework is used in this study to consider how intervention factors and action model-

related variables influence expressive writing outcomes. Study 1 synthesized and reviewed the

implementation reporting practices of expressive writing interventions and discussed the

potential impact on expressive writing effectiveness. Study 2 evaluated mental health and

emotion regulation outcomes of an expressive writing intervention for adolescents experiencing

social-emotional difficulties. This research program is expected to add a unique contribution to

the literature by establishing the effectiveness of expressive writing for improving emotion

regulation skills and practices, which are commonly implicated across mental health problems,

as well as identifying key factors to consider when implementing expressive writing

interventions.

     Keywords: expressive writing; mental health, adolescents, emotion regulation,

implementation

Résumé

Étant donné que des difficultés dans les compétences de régulation des émotions (par exemple, la suppression des émotions) sont liées à de mauvais résultats en matière de santé mentale (par exemple, à des symptômes de dépression), il est nécessaire de développer des interventions encourageant le développement des compétences de régulation des émotions pendant la période clé du développement qu'est l'adolescence (Gross, 2015; Gross & John, 2003). Une intervention simple et brève, l'écriture expressive (EE), est censée favoriser la régulation des émotions et d'autres effets positifs sur la santé mentale en écrivant sur des sujets stressants ou émotionnels (Travagin et al., 2015). Plusieurs études portant sur l'écriture expressive chez les jeunes vivant avec des difficultés socio-émotionnelles ont donné des résultats encourageants (Greenbaum & Javdani, 2017; Kalantari et al., 2012; Kliewer et al., 2011). Cependant, l'efficacité des interventions d'EE varie grandement selon les études, ce qui peut être partiellement expliqué par *comment* les interventions d'EE sont implantées. Il est encore incertain si l'écriture expressive aide les adolescents à améliorer leurs compétences de régulation des émotions. Comme les interventions d'écriture expressive chez les adolescents deviennent de plus en plus populaires et davantage utilisées, des rapports rigoureux sur la mise en œuvre peuvent contribuer à faire progresser ce domaine émergent en informant comment les variations de mise en œuvre à travers les études influencent les résultats des interventions. Afin de mieux comprendre la mise en œuvre efficace de l'écriture expressive et ses impacts sur les compétences et pratiques liées à la régulation des émotions, deux modèles/cadres théoriques directeurs sont utilisés. Premièrement, le modèle de Gross de 1998 portant sur la régulation des émotions axé sur le processus encadre cette étude de recherche pour promouvoir la compréhension des résultats de la régulation des émotions à partir de l'écriture expressive. Le modèle de Gross subdivise la régulation des

émotions en cinq catégories de stratégies organisées selon leur moment d'apparition dans le processus de génération d'émotions et est utilisé dans cette étude comme guide pour considérer les processus de régulation des émotions et les résultats survenant au cours de l'intervention. Deuxièmement, le cadre conceptuel de Chen (2014) pour l'élaboration de la théorie des programmes procure une vue d'ensemble des facteurs contextuels qui influencent la mise en œuvre. Le cadre de Chen postule que l'effet de l'intervention est un effet conjoint de l'intervention (par exemple, des variables liées à l'intervention telles que la dose de l'intervention et la fidélité de la mise en œuvre) et les facteurs du modèle d'action (par exemple, les facteurs liés à la mise en œuvre, tels que l'engagement des prestataires et le contexte écologique). Le cadre de Chen est utilisé dans cette étude pour examiner comment les facteurs d'intervention et les variables liés au modèle d'action influencent les résultats en écriture expressive. L'étude 1 a synthétisé et examiné les pratiques de rapport de mise en œuvre des interventions d'écriture expressive et a discuté de l'impact potentiel sur l'efficacité de l'écriture expressive. L'étude 2 a évalué la santé mentale et les résultats liés à la régulation des émotions dans un cadre d'écriture expressive auprès d'adolescents vivant avec des difficultés socio-émotionnelles. Ce programme de recherche devrait apporter une contribution unique à la littérature en établissant l'efficacité de l'écriture expressive en améliorant les compétences et pratiques de la régulation des émotions, lesquelles sont couramment impliquées dans les problèmes de santé mentale, ainsi que l'identification des facteurs clés à prendre en compte lors de la mise en œuvre d'interventions d'écriture expressive.

Mots clés : écriture expressive; santé mentale; adolescents; régulation des émotions; mise en œuvre.

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Contribution to Original Knowledge

The overarching aim of this dissertation was to better understand whether expressive writing interventions are effective in improving the emotion regulation skills of adolescents, given mixed findings on effectiveness of expressive writing for adolescent mental health and a dearth of research on emotion relation outcomes for adolescent populations (Travagin et al., 2015). A second aim was to better understand how expressive writing interventions can be successfully implemented in community and clinic settings, given that implementation-related variables contribute to intervention outcomes but are often overlooked (Chen, 2014; Sloan & Marx, 2018).

Through a scoping review, Study 1 aimed to assess implementation reporting practices in the school-based expressive writing literature with the goal of identifying areas where more rigorous reporting was needed and providing recommendations for research and practice. Study 1 (Chapter III) added a unique contribution as the first scoping review to assess implementation reporting practices in the school-based expressive writing literature. Findings from Study 1 identified systematic gaps in reporting practices related to implementation. Specifically, the domains of fidelity and provider engagement were assessed in only two studies each and co-intervention was assessed in only three studies. Study 1 also contributed by identifying that 95% of studies failed to report all minimum recommended implementation-related variables. Overall, this scoping review provided recommendations for clear and consistent reporting of implementation-related variables to strengthen the expressive writing evidence base, ultimately enabling more definitive conclusions to be drawn regarding the effectiveness and feasibility of implementing expressive writing interventions (Chen, 2005; Durlak & DuPre, 2008; Steckler & Linnan, 2002).

Study 2 (Chapter IV) consisted of a mixed-methods evaluation, investigating the effectiveness of an expressive writing intervention for adolescent's mental health and emotion regulation. Implementation-related variables were also assessed and considered to address the gaps identified in Study 1. Study 2 was the first use of a mixed-methods approach involving both quantitative methods and the use of semi-structured interviews with adolescents who had participated in expressive writing, which allowed for generalizability of findings in addition to understanding complex subjective experiences in context (Doucet et al., 2018). Quantitative findings from Study 2 revealed improvements in school-related attitudes, a reduction in social stress and depression symptoms, improved relationships with parents, improved ego strength, and less functional impairment. Qualitative findings further revealed that participants reported more positive experiences, increased positive affect and reduced negative affect, positive social changes, and improvements in self-concept.

Study 2 was the first to demonstrate that expressive writing leads to a reduction in emotional suppression for the adolescent population. Qualitative results also revealed that all but one participant reported improvements in their emotion modification skills, specifically, emotion awareness, cognitive reappraisal, emotion modification, and self-support. Overall, Study 2 added to a growing body of research demonstrating that expressive writing is effective for promoting mental health and emotion regulation among adolescents (Harvey et al., 2018; Travagin et al., 2015; Wisco et al., 2013).

Qualitative results from Study 2 also provided a unique contribution by identifying novel mechanisms that appear to underlie expressive writing. Specifically, the mechanisms of behavioural activation and the therapeutic space were identified as potential mechanisms by which expressive writing conveys a benefit to adolescent mental health and emotion regulation

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skills. Further, the mechanism of behavioural rehearsal received support for the first time.

Understanding the mechanisms at work behind expressive writing will support the development

of a logic model, further guiding the implementation of expressive writing in context as well as

providing guidance for further intervention evaluation (Doucet et al., 2018).

Contribution of Authors

Chapter 1 (Introduction) was written and edited by Janet Amos (JA), with feedback

from Ingrid Sladeczek (IS) and Danielle Groleau (DG).

Chapter 2 (Literature Review) was written and edited by JA, with feedback from IS and DG.

Chapter 3 (Study 1) is an exact reproduction of the article entitled, "A Scoping Review of

School-Based Expressive Writing Implementation: Missed Opportunities and New Research

Directions", submitted for publication in the peer-reviewed journal Discover Mental Health in

August 2023. It was authored by JA, Justin Moase (JM), and IS. JA conceived of the study, and

planned and determined the scope of the review with IS. JA completed the scoping review. JM

independently completed a second review for verification. JA compiled and interpreted the

studies included in the review, with input from IS and JM. JA wrote and edited the article, with

feedback from IS and JM. All authors read and approved the final manuscript.

Chapter 4 (Study 2) is authored by JA with feedback from IS and DG. JA conceived of the

study, planned, and developed the intervention with IS and DG. JA recruited the participants, JA

and Lara Kojok (LK) implemented the intervention, and JA, JM, and LK collected data. JA

conducted data analyses. JA wrote and edited the article, with feedback from IS and DG.

Chapter 5 (Discussion) was written and edited by JA, with feedback from IS and DG.

Chapter 6 (Final Conclusion and Summary) was written and edited by JA, with feedback

from IS and DG.

List of Tables and Figures

List of Abbreviations

ACE Model	Adaptive Coping with Emotions Model
BASC-3 SRP-A	The Behavioral Assessment Scale for Children – Third Edition Self-Report of Personality - Adolescent
CAMH	The Centre for Addiction and Mental Health
CBT	Cognitive Behavioural Therapy
Ch-IMP	Checklist for Implementation
CONSORT	The Consolidated Standards of Reporting Trials
COVID-19	Coronavirus Disease 2019
ERSQ	Emotion Regulation Skills Questionnaire
ERQ	Emotion Regulation Questionnaire
EW	Expressive Writing
ITT	Intent-to-treat
LIWC	Linguistic Inquiry and Word Count
MHCC	Mental Health Commission of Canada
OR	Odds Ratio
PR	Partial correlation coefficient
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
PTSD	Post-traumatic stress disorder
RCT	Randomized controlled trial
SMD	Standard mean difference
WHO	World Health Organization

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Chapter I

Introduction

Adolescence is a critical developmental window where individuals experience significant social, cognitive, and emotional changes (Eiland & Romeo, 2013). These changes can lead to more independence and more sophisticated reasoning but can also be characterized by maladaptive shifts in emotional experiences and thinking patterns (Cracco et al., 2017). For about 25-31% of adolescents, this period marks the onset of a mental health problem such as anxiety or depression (Silva et al., 2020). The number of adolescents self-reporting mental health problems has increased (Gandhi et al., 2016), yet large numbers of adolescents experiencing mental health problems do not access services; in one study, less than half (Georgiades et al., 2019). Interventions to promote adolescent mental health include individual and group programs offered by schools, community services, medical services, or online. Many programs are effective, yet there remains a substantial unmet need for cost-effective interventions that can be implemented in settings with few resources (WHO, 2020).

Emotion regulation skills are closely associated with many common mental health problems and provide an important target for intervention (Berking & Whitley, 2014). Several researchers have proposed that expressive writing may benefit participants because they will engage in aspects of emotion regulation, such as expressing emotions and reappraising emotional experiences. Expressive writing is a brief psychosocial intervention that may help adolescents enhance their emotion regulation skills. It involves writing about a stressful or emotional topic, usually over several days or weeks. It is thought to promote emotional expression and processing of emotions through writing about stressful or emotional issues that are personally meaningful such as a complex or challenging event (Doucet et al., 2018; Travagin et al., 2015). Confronting

a stressful event, either by taking action or using language by writing or talking, tends to reduce negative emotions and stress responses in the body (Slavin-Spenny, Cohen, Oberleitner, & Lumley, 2011; Tabibnia & Radecki, 2018). Participants may gain skills in healthy emotion regulation through writing (Cheung et al., 2019; Harvey et al., 2018).

Expressive writing has consistently had small yet significant impacts on adolescent writers' physical and mental health, especially for youth who have experienced mental health problems or life stressors (Travagin et al., 2015). However, significant heterogeneity between studies often precludes researchers from drawing firm conclusions regarding the effectiveness of the intervention. Further, emotion regulation skills have not been directly examined as an outcome of expressive writing intervention for adolescents, despite their direct implication in mental health (Aldao et al., 2010). Using Gross' 1998 process-oriented model of emotion regulation, the present study seeks to understand whether youth who participate in expressive writing gain skills in emotion regulation and evidence of improved mental health outcomes compared to the waitlist control group.

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Chapter II

Literature Review

Mental Health in Adolescence

Mental health is the ability to engage in productive activities, feel fulfilled by relationships, and adapt and cope successfully to change and adversity (Satcher, 2000). Mental health ranges from optimal to poor mental health along a continuum depending on how individuals can manage adversity (CAMH, 2014). A state of poor mental health may or may not be accompanied by symptoms of severe mental illness (CAMH, 2014). Thus, individuals can experience poor mental health when coping with difficult situations without symptoms of severe mental illness. It is also possible for individuals to experience optimal mental health when they feel empowered and can manage despite adverse life circumstances (CAMH, 2014). When individuals adapt to hardship and thrive under adverse circumstances, they engage in a process described as *resilience* (Liebenberg et al., 2013; Tabibnia & Radecki, 2018). Resilience is "the ability to manage or cope with significant adversity or stress in effective ways and may result in an increased ability to respond to future adversity" (CAMH, 2014). A similar concept to resilience is post-traumatic growth, defined by Joseph, Murphy, and Regel (2012) as how people change positively in their struggles with adversity, particularly traumatic experiences.

Adolescence is a developmental period from age 10 to 18 characterized by the onset of puberty and substantial accompanying physiological and emotional changes (Eiland & Romeo, 2013). During this sensitive developmental window, adolescents undergo significant hormonal and neurodevelopmental changes that impact the parts of the brain implicated in mental health and illness (Walker, 2002). Hormonal changes in adolescence are linked to fluctuations in self-esteem, mood, and behaviour (Guerra et al., 2012). During adolescence, individuals develop a

greater capacity for decision-making, impulse control, reasoning, and logical and moral thinking than during childhood (World Health Organization [WHO], 2017). At the same time, the adolescent period is characterized by "storm and stress," where youth tend to experience heightened anxiety, adjustment problems, and dysphoria – a pattern seen across cultures (Walker, 2002). Indeed, adolescence is a high-risk period associated with increased psychopathology, adjustment problems such as negative emotional experiences, risk-taking, and substance abuse (Walker, 2002). Most mental health problems, 70%, have their onset in childhood and adolescence (CAMH, 2014).

Adolescents tend to undergo changes in their experience and processing of emotions, thinking patterns, and how they cope with stressful or challenging events. In terms of their thinking, adolescents develop greater self-awareness and more self-discovery, which may lead to more negative self-evaluation and fluctuations in self-esteem (Guerra et al., 2012). There is also a tendency towards greater social comparison during this period (Bluth & Blanton, 2014; Neff & McGehee, 2010). During adolescence, youth engage more frequently in egocentric thinking by constructing personal fable narratives that include themes of invulnerability, omnipotence, and individual uniqueness (Hill & Lapsley, 2011). When adolescents engage in egocentric thinking, they feel their problems are unique to them and not a part of the shared human experience, and consequently, they are more likely to isolate themselves and over-identify with negative thoughts and affect (Hanna, 2017; Neff & McGehee, 2010; Xavier et al., 2016). Thinking in an isolating manner (e.g., that problems are unique to you) is known as personal uniqueness and is associated with poor mental health, including suicidal ideation, depressive symptoms, risk behaviour, and lifetime drug use (Aalsma et al., 2006; Hill & Lapsley, 2011). Egocentric thinking focuses more

on one's internal self, which can heighten negative feelings, such as anxiety, when in stressful or

unpleasant situations (Rai et al., 2016).

In terms of their emotional experiences, adolescents experience more variability in their

emotions than adults, and they experience emotions more intensely. They experience higher

heights and lower lows (Larson et al., 1980; Rapee et al., 2019). In terms of how adolescents

cope with strong emotions and challenging experiences, a shift has been observed in adolescence

whereby individuals tend to use fewer adaptive coping strategies (e.g., problem-solving,

distraction, and forgetting) and tend to use more maladaptive strategies (e.g., rumination, giving

up, withdrawal, and aggressive actions), especially between the ages of 12 to 15 (Cracco et al.,

2017). Notably, Cracco et al. (2017) found that many of the adaptive skills followed a "U" shape

across time, whereby their use decreased in early adolescence, as compared to childhood, and

then increased in later adolescence by ages 16-18, showing a return to previous levels of use

(Cracco et al., 2017). It may be then that maladaptive emotion regulation strategy use is in some

ways unique to the early adolescent period.

Worldwide, mental health problems among the adolescent population "account for 16%

of the global burden of disease [and] depression is one of the leading causes of illness and

disability among adolescents" (WHO, 2018). It is estimated that the global prevalence of

common mental disorders (i.e., anxiety, depression, social dysfunction, or loss of confidence) in

adolescents aged 10-19 is between 25-31% depending on the cut-off score used (Silva et al.,

2020). Further, for about one in five youth who experience mental health problems during

adolescence, these difficulties persist into adulthood (Lee et al., 2014; Walker, 2002). In Canada,

1.2 million children and youth are affected by mental illness (Mental Health Commission of

Canada [MHCC], 2019). A 2016 report conducted by Gandhi et al. (2016) found that in Ontario,

emergency department visits related to youth mental health problems increased by 32.5%

between 2006 and 2011, and mental health-related doctor's visits increased by 28.7%, primarily

driven by an increase in anxiety disorders. Youth's help-seeking related to mental health

problems appears to be on the rise. A recent report from Statistics Canada (2020) revealed that

mental health declined during the COVID-19 pandemic, such that one in five youth reported

their mental health was "fair" or "poor," and 57% reported that their mental health had declined

since social distancing measures were implemented.

Despite youth's identified mental health needs, estimates suggest that only 1 out of 5

youth who need mental health services receive them (Cheung & Dewa, 2007; Kutcher, 2011). In

a study of children and adolescents who contacted an anonymous text helpline in Canada, Haner

and Pepler (2016) found that 50.7% of the clients had never been in contact with formal mental

health support before, suggesting that there may be a gap between youth who are distressed and

those who receive support in their school or from mental health or healthcare providers. A recent

Ontario study investigated the prevalence of mental health disorders and service use in youth

aged 12-17 as reported by the youth and as reported by their parents (Georgiades et al., 2019).

The authors found that the overall prevalence of mental health disorders in youth aged 12-17

based on parent perception was 18.2%, yet only 60.7% of those youth received services.

However, based on the youth's perceptions, 21.8% were found to have a mental health disorder,

with only 43.7% receiving services. The authors noted that the most significant difference

between parent and youth perceptions was in the case of adolescent girls with mood disorders

such as anxiety and depression. In a scoping review of barriers to youth access to mental health

services, the most identified barriers were lack of availability of mental health specialists, long

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waiting times to access services, and concerns that primary healthcare providers may be

disrespectful, dismissive, or judgemental (Anderson et al., 2017).

Prevention of and Intervention for Adolescent Mental Health Problems

Given the mental health needs of adolescents described above, numerous interventions

have been designed to promote positive mental health, prevent severe mental illness, support

youth's mental health in vulnerable contexts, and intervene with youth who already experience

serious mental illness and poor mental health. The WHO defines intervention as "an act

performed for, with or on behalf of a person or population whose purpose is to assess, improve,

maintain, promote or modify health, functioning or health conditions [including mental health]"

(WHO, 2019). Interventions vary widely in terms of the population targeted, the severity of

youth mental health symptoms, setting (e.g., individual, group, school, community, or digital

platform), and outcomes evaluated (Das et al., 2016).

In a systematic review of meta-analyses examining mental health interventions to prevent

and manage mental health disorders for adolescents, Das et al. (2016) found that school-based

group-based interventions and cognitive-behavioural therapy (CBT) were significantly effective

in reducing depressive symptoms (standard mean difference [SMD]: -.16), anxiety (SMD: -.33),

and knowledge of suicide (SMD: 1.51) and suicide prevention (SMD: .72). In terms of

community-based interventions, SMDs for an aggregate of positive mental health outcomes

ranged from .03 to .38 across interventions. Significantly positive effects were found for

affective education (SMD: .33) but not for social acceptance (SMD: -.03). Positive results were

also found for creative activities in terms of their effects on behavioural changes, self-

confidence, self-esteem, levels of knowledge, and physical activity. However, an overall

synthesis could not be conducted due to the heterogeneity of the research. In terms of

interventions delivered in digital formats, such as mass media campaigns or online CBT programs, no overall conclusions could be drawn, and no meta-analysis could be conducted due to the heterogeneity of studies (Das et al., 2016). In terms of individual- and family-based interventions, media literacy interventions showed a significant impact on acceptance of societal ideals (SMD: -.28). Exercise interventions were found to be effective in improving self-esteem (SMDs ranged from .49-.51) and reduced depression (SMD: -.62). Individual CBT and psychotherapy were effective in treating anxiety (odds ratio [OR]: 7.85), reducing suicidal ideation (SMD: -3.12), and remission (OR: 2.15).

In 2020, the WHO issued a strong recommendation to provide psychosocial interventions for adolescents who were experiencing symptoms of emotional problems such as anxiety and depression to reduce symptoms and promote positive mental health. After conducting a meta-analysis of 70 studies of psychosocial interventions for adolescents with emotional problems, the WHO identified significant overall effect sizes for positive mental health (0.1941) and mental disorders such as depression and anxiety (-0.3058). They noted that "early intervention with adolescents who are already displaying emotional problems has proved crucial in preventing the progression of mental health problems and optimizing health and life trajectories." The WHO concluded that while the quality of the available evidence was rated as "low" due to methodological limitations, given the potential for benefit and the absence of undesirable effects, the balance falls in favour of implementing interventions for adolescents.

Regarding the strengths and challenges related to mental health promotion interventions for adolescents, important considerations arose in terms of the setting, cost-effectiveness, and required resources such as personnel, time, and materials. In terms of the environment, implementing interventions in school settings can be cost-effective, reach a greater number of

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youth, and may be perceived as less stigmatizing and intimidating compared to receiving

intervention through health services (WHO, 2020). However, school-based interventions are

unlikely to reach youth living in vulnerable contexts (e.g., unhoused youth) and those who do not

attend school (Das et al., 2016; WHO, 2020). Another important consideration for school

settings is that a strong partnership is required with school personnel, as there is the potential that

school leaders may resist implementing programs that are perceived as costly, that require time

away from academics, or that require teacher time and training (WHO, 2020).

Regarding required resources and costs, the WHO (2020) stated that group interventions

can be less costly yet as effective as long-term individual interventions. Self-help interventions

can also be less expensive to implement and are perceived as easier to implement. Online

interventions are also considered cost-effective, but only sometimes more so than those delivered

in a group format. Another strength of online interventions is their potential to reduce the stigma

associated with help-seeking due to the anonymity of the service. However, online interventions

may have high rates of attrition. For example, in a study of online diary use for coping with

depression, 47% of participants did not engage with a diary (Metsäranta et al., 2019). The

authors hypothesized that this may have been due to low motivation and concentration, or they

may have found the intervention too demanding. Long-term individual therapy is as effective

but more expensive than brief therapies delivered in a group format (WHO, 2020). CBT was

found to be particularly expensive to implement due to the training and supervision costs.

Significant heterogeneity in costs and format exists between existing interventions that

promote adolescent mental health and alleviate or prevent symptoms of mental health problems.

Therefore, there is a need to identify mental health interventions that are effective, that can be

scaled up to reach larger populations, and that can be feasibly implemented in low-income

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settings and communities (Das et al., 2016; Patton & Temmerman, 2016; WHO, 2020).

Interventions can reach more youth when applied in school settings, but schools will need

guidance with implementation, assistance with costs, and cannot be expected to reach vulnerable

youth who do attend school. Cost-effective options can include using online delivery; however,

these have drawbacks in terms of attrition. A balance must be struck between an intervention's

reach, required resources, and effectiveness.

Expressive Writing

Expressive writing is a brief psychosocial intervention thought to promote emotional

expression and processing of emotions through writing about stressful or emotional topics that are

personally meaningful such as a complex or challenging event (Doucet et al., 2018; Travagin et

al., 2015). Expressive writing interventions have been considered an appealingly simple and

uniquely flexible option for mental health intervention to promote mental health (Travagin et al.,

2015). Pennebaker and Beall (1986) first developed the original expressive writing paradigm. In

their seminal 1986 study, Pennebaker and Beall concluded that disclosing a traumatic experience,

independent of social feedback, was a promising intervention with potential implications for long-

term health (Pennebaker & Beall, 1986). Expressive writing can take many forms, including

personal narratives, journaling, or poetry (Adams, 2016). Expressive writing may be ideally suited

for resource-limited settings as the only material resources required are a pencil and paper

(Winslett, 2005). In addition, expressive writing requires little time to implement relative to longer

traditional therapies, as traditionally, only 10-15 minutes of writing across three to four writing

sessions are used (Sloan & Marx, 2018).

In their seminal study, Pennebaker and Beall (1986) found that individuals who wrote

about their emotions concerning a trauma they experienced reported significantly fewer illnesses

in the four months following the study than the control groups did ($F(3, 38) = 3.05$, $p = .04$). In the traditional paradigm, participants were asked to write about their "deepest emotions and thoughts" for 15–30 min over three to five consecutive days (Pennebaker, 1997, p. 162). Sample writing instructions intended for use with adolescents, utilized by Soliday, Garofalo, and Rogers (2010), are provided for illustrative purposes below. However, specific instructions vary across studies.

> Over the next few days, when we come to your class, we would like you to write your very deepest thoughts and feelings about an extremely important emotional or stressful issue that has affected you and your life. In your writing, we'd like you to really let go and explore your very deepest emotions and thoughts. You might tie your topic to your relationships with others, including parents, siblings, friends, or boy- or girl- friends. It might be something in the past, the present, or your future. You may write about the same general things or experiences on all days of writing or on different topics each day. It might also be something you have not talked about in detail with others. Don't worry about spelling, sentence structure, or grammar. Your writing is not seen by anyone but yourselves and research staff, and they are not graded. The only rule is that once you begin writing, please continue to do so until we let you know your time is up. (p. 795).

Following Pennebaker and Beall (1986), expressive writing interventions have been adapted to suit various populations (e.g., youth and vulnerable populations) and contexts (e.g., schools and refugee camps). Adaptations have included altering the number and length of sessions, writing instructions, or adding peer discussions and psychoeducation (Sloan & Marx, 2018). For example, Horn et al., (2011) combined expressive writing with a brief introduction activity in each session. Peer discussion has commonly been added as it is thought to enhance engagement in the intervention, especially for adolescents (Brown, 2018; Horn et al., 2010;

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Kliewer et al., 2011; Reynolds et al., 2000; Walter, 2018). Horn et al. (2010) also suggest that peer discussion can introduce new ideas and concepts, and the writing can be viewed as a way to individualize the content of the group discussion to each participant's personal experience.

Disclosing emotions in a written format provides a method of expression that avoids potential feelings of awkwardness, as participants do not have to worry about the reactions of others (Juth et al., 2021; Pennebaker & Beall, 1986; Slavin-Spenny et al., 2011; van der Kolk, 2014). The perceived stigma associated with mental health problems has been identified as a barrier for adolescents to seek support (WHO, 2020). It may be that writing provides a sense of anonymity that increases adolescents' confidence to access mental health support (WHO, 2020). In contrast to verbal disclosure, some individuals may feel less overwhelmed when writing about a stressful experience than when speaking about a stressful experience (van der Kolk, 2014). Further, writing may allow individuals to focus on experiencing physical sensations and sensory experiences (i.e., body sensations related to emotions) while writing, as they are not distracted by worrying about the reception they will receive from a listener (van der Kolk, 2014). For adolescents in particular, some youth may be more comfortable writing about their problems than speaking out loud. For example, in an evaluation of Kids Help Phone Services, which offers Canadian youth the option to text or call a counsellor anonymously and for free, researchers found that significantly more of their high-school-aged clientele chose to text a counsellor rather than call (Haner & Pepler, 2016). Texters were also more likely to discuss clinically concerning problems (e.g., suicide and other mental health problems) than were callers. Thus, it appears that for some individuals, writing about their issues, especially weighty ones, is sometimes preferable to speaking.

Potential Mechanisms

Over the years, several mechanisms have been hypothesized to underlie the outcomes conferred by expressive writing. Mechanisms that have been repeatedly highlighted in the literature are outlined below and include exposure/habituation, cognitive processing, social integration, self-efficacy, and emotion regulation. Many of the proposed mechanisms likely overlap as they describe similar processes and are likely not mutually exclusive (Sloan & Marx, 2004). In addition, expressive writing likely works through multiple mechanisms and the tools may have a cumulative benefit (Juth et al., 2021; J. Smyth & Pennebaker, 2008).

Emotional Disinhibition and Exposure/Habituation

When individuals confront a stressful, challenging event through writing, it is thought that the stressful topic represents an unpleasant or feared stimulus that the writer may avoid thinking about. Confrontation of a stressful event is described in habituation theory, attentional processing theory, disinhibition theory, and catharsis as described below.

Habituation Theory. Habituation theory purports that when individuals confront or "relive" a stressful experience (e.g., through thinking, writing, or talking about it, or through in vivo exposure to the stimulus), they are repeatedly in contact with the associated unpleasant sensations, thoughts, and feelings, which are reduced in intensity through repeated exposure (Foa et al., 1986; Travagin et al., 2015). During expressive writing, it is thought that individuals may become *habituated* to stressful thoughts and feelings through writing (Lepore, Greenberg, Bruno, & Smyth, 2002). Greenberg (2004) explains that "there is a strong human tendency to avoid painful emotions." To avoid emotions, it is common to distort, interrupt, or engage in dysfunctional behaviour" (p. 9). Individuals may avoid uncomfortable body sensations associated with emotions such as panic and hopelessness, or they may avoid painful thoughts.

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Individuals may also avoid other neutral thoughts or stimuli (e.g., situations, people, places, and activities) that have become paired with the unpleasant stimulus over time. In the case of expressive writing, it is thought that individuals face their fear without engaging in escape or avoidance behaviours. As a result, they may learn that their writing topic is not as unpleasant or intolerable as previously thought (Travagin et al., 2015).

Attentional Processing. For habituation to occur, individuals must first attend to emotions, which is sometimes rereferred to in the expressive writing literature as *attentional processing* (Lepore, Greenberg, Bruno, & Smyth, 2002). Greenberg (2004) explains that "to overcome emotion avoidance, clients must first be helped to approach emotion by attending to their emotional experience" (p. 9), and then they must acknowledge the emotion to themselves. In their 2002 model, Lepore, Greenberg, Bruno, and Smyth describe how expressive writing may cause individuals to direct their *attention* to their emotions as they write rather than avoid thinking about them.

Disinhibition Theory. Confronting, rather than avoiding, uncomfortable thoughts and feelings are commonly referred to in the expressive writing literature as *disinhibition theory*. When individuals face a stressful situation and the accompanying negative emotions, they tend to experience a reduction in negative emotions and stress responses in the body more than when individuals avoid or suppress thoughts of the event and related emotions (Tabibnia & Radecki, 2018). The reduction in negative emotion and stress response occurs whether the individuals take action to confront the stressor or whether they face the stressor through language, including talking and writing about it (Tabibnia & Radecki, 2018). It is thought that disinhibition reduces stress and increases well-being and health (Sloan, & Marx, 2004).

Catharsis. The concept of disinhibition has also been linked to catharsis, which involves a powerful emotional release in which strong feelings are felt and may also be expressed or accompanied by new insights and positive change (Pennebaker & Beall, 1986). In the case of expressive writing, Frattaroli (2006) describes how expressing emotions by writing them down rather than holding them in may result in an experience of catharsis.

Cognitive Processing

Another proposed mechanism of change for expressive writing is that individuals may *cognitively process* stressful situations through writing (Lepore et al., 2002). Cognitively processing stressful situations can include emotion labelling, cognitive reappraisal, meaning-making, emotion acceptance, and self-compassion as described below.

Emotion Labelling. First, writing about an emotional experience encourages individuals to apply a linguistic structure to their experience, or in other words, put their feelings into words (Pennebaker, 2004). Putting emotions into words "allows previously unsymbolized experience in emotion memory to be assimilated into people's conscious, conceptual understandings of self and world" (Greenberg, 2004). Conscious feeling of emotions (i.e., labelling feelings) involves using a higher level of the brain than perceiving physical sensations. This higher level allows for reflection and problem-solving, supporting more adaptive regulation of emotions (Greenberg, 2004). Emotion labelling has been examined frequently in expressive writing literature. For example, in a 1993 study, Pennebaker found that when he compared the writing of participants who did not improve their physical health after writing to those who did, those who improved used significantly more negative emotion words (e.g., sad, hate, hurt, guilty) than participants who experienced no change (Pennebaker, 1993). In other words, participants who labelled their emotions saw significant improvements in their physical health.

Cognitive Reappraisal and Meaning-Making. As individuals write, they may structure and organize their thoughts, interpret the event, search for causal explanations, promote insight and understanding about the event, or reappraise it in a different light (Frattaroli, 2006; Pennebaker, 2004; Travagin et al., 2015). As they write, individuals may integrate the event into their schema, i.e., their inner working model of the world, resulting in more congruency between the challenging event and the person's understanding of themselves and the world (Greenberg, 2004; Juth et al., 2021; Sloan, D. M., & Marx, 2004). Individuals may also make meaning of their challenging experiences by retelling their story to incorporate the benefits of the negative experience, positive emotions, values and priorities, and reflections on growth and learning from their experiences (King, 2002). Expressive writing interventions may include specific instructions that encourage attention to positive aspects of the experience, meaning-making, or other positive reflections (Travagin et al., 2015). For example, individuals who tend to ruminate on negative experiences may be encouraged to focus on more positive thoughts and feelings through writing. For example, consider a study of youth ages 14-25 who were invited to write about their Coronavirus Disease 2019 (COVID-19) pandemic experiences online, using the "standard" expressive writing instruction, writing positively, or writing about coping. Mariën et al. (2022) found that writing positively was associated with increased positive feelings about their experience during the COVID-19 pandemic than those in the standard expressive writing condition (0.21, $SD = 0.07$, p < .01). Mariën et al. suggest that instructions to write about positive aspects may help writers focus attention away from negative aspects and towards positive expectations.

Pennebaker found that individuals who showed significant improvements in physical health following expressive writing used more causation words such as *because*, *cause*, and

effect and insight words such as *consider* and *know* in their writing over time than participants who did not show significant improvement (Pennebaker, 1993). In other terms, participants who wrote interpreted and created meaning from their experience by using insight and causation words as their writing progressed showed significant improvements in their physical health.

Emotion Acceptance and Self-Compassion. As individuals write, some individuals engage in self-compassionate and self-soothing reflections. Depending on the context, emotions can be regulated by shifting from maladaptive fear, anger, or shame to softer emotions such as self-compassion, self-worth, and forgiveness (Greenberg, 2004). Self-compassion refers to being caring and compassionate to oneself under challenging times, and consists of three interacting components: self-kindness, common humanity, and mindfulness (Barnard & Curry, 2011; Hall et al., 2013; Neff, 2009; Neff et al., 2007). Self-kindness involves being understanding, comforting, empathetic, forgiving, sensitive, warm, and patient towards oneself (Barnard & Curry, 2011). Common humanity refers to gaining a perspective that all humans make mistakes and go through hard times (Neff et al., 2007). Mindfulness in this context refers to awareness and acceptance of the present moment. Mindfulness also includes resisting the urge to ruminate on the past or future (i.e., overidentification) as well as avoiding painful thoughts and feelings (i.e., avoidance) (Barnard & Curry, 2011). In a study of university students randomly assigned to self-compassionate writing or control writing, Wong and Mak (2016) found that the self-compassion group had significantly fewer physical symptoms at one and three-month follow-up. The authors suggested that expressive writing can facilitate emotion regulation and self-compassion, leading to health benefits.

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Social Integration Theory

Engaging in expressive writing may help individuals feel more comfortable sharing their experiences verbally with others (Frattaroli, 2006). Following the intervention, individuals may talk to friends, family, or professionals more frequently, or for the first time, about their experiences. By disclosing to others, they may continue to experience the benefits of other mechanisms, such as disinhibition and habituation, as well as potential emotional and practical support from the person they disclose to (Bootzin, 1997; Frattaroli, 2006). Frattaroli explains that increasing social connections may also increase social interactions and improve relationships, which may improve writers' health and well-being. Greenberg (2004) suggests that emotional/social support is essential for promoting change because friends and family can provide validation and instrumental support. Validating relationships can also facilitate the acceptance of emotions. In a study of adolescents, Winslett (2005) found that participants who wrote about a stressful event reported significantly fewer feelings of loneliness, reported more willingness to self-disclose to others and reported higher quality friendships following the intervention compared to those who wrote about a best possible future self or who wrote a non-emotional description of furniture.

Emotional Self-Efficacy

When individuals engage in writing, they may also have the experience of mastering and controlling their emotions (Frattaroli, 2006; Lepore, Greenberg, Bruno, & Smyth, 2002). Within the controlled environment of the writing activity, individuals may observe themselves being successful at expressing and regulating emotions and therefore gain a sense of greater competence and self-efficacy (Frattaroli, 2006). When writing about a negative experience, individuals may learn through experience that they have the capacity (e.g., tolerance, mental

strength, coping strategies) to engage with their stressful topic (Sloan, & Marx, 2004). This new learning may or may not be in the writer's conscious awareness. Whether the writer is aware of their thoughts, research indicates that positive expectations and confidence in coping abilities can impact mental health symptoms. Indeed, in a sample of college students, Kassel et al. (2007) found that the student's belief in their ability to cope with negative moods successfully predicted changes in their symptoms of anxiety and depression eight weeks later. The authors suggested that negative mood regulation expectancies "function like placebos, or self-fulfilling prophecies, ultimately yielding the expected changes in mood regardless of the type of coping one actually utilizes." Tabibnia and Radecki (2018) also argue that positive expectations can be a powerful facilitator of learning and behaviour change. They explain that a positive expectation, perceived control, a growth mindset, and self-affirmation can dampen distress and buffer against perceived threats.

Emotion Regulation

Emotion regulation refers to a set of processes, skills, and strategies that can be used to identify and modulate emotional experiences to achieve one's goals (Berking & Whitley, 2014). Emotion regulation theory can be used as a conceptual framework to explain the mechanisms underpinning expressive writing. Emotion regulation integrates many of the proposed theories outlined above by situating them within a process for modulating emotions.

When engaging in expressive writing, individuals may develop or practice the skills and strategies needed to engage in adaptive emotion regulation. First, emotion regulation involves identifying internal emotional experiences, that is, bodily-felt sensations (Cook et al., 2005; Greenberg, 2004), and second, it consists in influencing those internal experiences "in ways we think will increase the chance that they will be helpful rather than harmful" (Cook et al., p. 20).

Efforts to influence emotions are commonly referred to as emotion regulation skills and "involve such things as identifying and labelling emotions, allowing and tolerating emotions, establishing a working distance [from emotions], increasing positive emotions, reducing vulnerability to negative emotions, self-soothing, breathing, and distraction" (Greenberg, 2004, p. 10).

Gross' 1998 process-oriented model of emotion regulation is helpful to understand and organize the various strategies individuals may be used to regulate their emotions during an expressive writing intervention and provides the theoretical framework for the present study. Gross (2015) outlines five emotion regulation strategies: (a) choosing whether or not to put yourself in a situation or *situation selection*, (b) changing a situation you're in or *situation modification*, (c) choosing what aspect of a situation to focus on, or *attentional deployment*, (d) choosing to change your thinking about a situation, or *cognitive change*, and after the emotion occurs, (e) suppressing or influencing your emotions (e.g. through alcohol use), or *response modification*. Essentially, the model purports that using differential strategies should result in different behavioural, emotional, and cognitive outcomes (Gross, 2015).

Difficulties with emotion regulation may arise when there is a lack of awareness, clarity, or understanding of emotions, trouble accepting or tolerating emotions, selecting situations that lead to unwanted emotions, directing too much attention toward undesired emotions, or difficulty reappraising experiences in an optimistic light (Berking & Wupperman, 2012). In their *Adaptive Coping with Emotions* (ACE) *Model*, Berking and Whitley (2014) outline seven emotion regulation skills involved in using healthy emotion regulation strategies: conscious awareness of emotions, correctly identifying and labelling emotions, identifying what causes and perpetuates emotions, adaptively modifying emotions, accepting and tolerating negative emotions, willingness to confront negative emotions, and providing effective self-support. The term *coping*

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is used above and has also been used widely in the expressive writing literature (Fivush et al., 2007; Giannotta et al., 2009; Horn et al., 2010). Given the potential for confusion, it is helpful to clarify the distinction between the two overlapping constructs of emotion regulation and coping (Gross, 2015). While both refer to an effort to influence positive or negative behaviours or emotions, coping places emphasis on alleviating a stress response over time, whereas emotion regulation emphasizes trying to influence the experience of and expression of emotions (Gross, 2015).

For emotion regulation to occur, it is helpful for individuals to become consciously aware of their subjective internal experience and then identify and label their emotions (Berking & Whitley, 2014; Greenberg, 2004). Without conscious awareness of emotions, individuals cannot use coping strategies that require conscious thought. Practicing confronting emotions by placing oneself in a situation that is likely to trigger the emotion can help individuals become habituated to and tolerant of emotions (Berking & Whitley, 2014). Labelling emotions is also an important part of emotion regulation, as without a verbal label, it can be challenging to determine the nature and purpose of the emotion or which strategies may be helpful for regulation. Awareness of what causes emotions to occur can help an individual understand which regulation strategy may be helpful.

Modifying a situation or emotion is another key emotion regulation skill described in Gross' (2015) model. For the emotion modification strategy to be considered adaptive, Berking and Whitley (2014) emphasize that attempts to modify emotions must not result in unwanted consequences. Modifying emotions can include problem-solving, cognitive reappraisal, or engaging in helpful behaviour such as distracting oneself by doing a pleasant activity, facing fears, and taking steps to work towards one's goals (Berking & Whitley, 2014). For example,

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suppose an individual was anxious because they lost their job. In that case, they might modify

their emotions by thinking of what next steps to take (e.g., applying for a new job), reappraising

the situation (e.g., "this might not be the end of the world"), or going for a walk to release some

pent-up tension and engage in distraction.

Another important emotion regulation skill is accepting and tolerating emotions that are

difficult to change. Berking and Whitley (2014) argue that the ability to approach and confront

situations that trigger negative emotions is a vital emotion regulation skill because it may be

necessary for individuals to engage in potentially challenging situations to achieve their goals.

Finally, individuals need to provide themselves with effective self-support by treating themselves

compassionately, soothing and encouraging themselves, and coaching themselves (Berking &

Whitley, 2014; Greenberg, 2004). When individuals are skilled in self-support, they can better

tolerate ineffective emotion regulation attempts and guide themselves towards adaptive emotion

regulation strategies.

As outlined above, the ability to attend to emotions, label emotions, reappraise thoughts,

and accept emotions are skills needed for adaptive emotion regulation and are described within

the theories regarding the underlying mechanisms of expressive writing interventions. Emotion

regulation theory thus integrates many of the theories discussed in this section into an

overarching explanatory framework describing how emotions may be attended to and modulated

through expressive writing. Specifically, the theories of attentional processing, habituation,

emotion labelling, cognitive reappraisal, emotion acceptance, and self-compassion can be

included within the emotion regulation framework.

In addition, while they do not describe emotion regulation skills, the theories of social

integration and emotional self-efficacy may indirectly relate to emotion regulation. It may be that

when individuals can better regulate their emotions, they can better engage in positive activities that improve mood and well-being such as socializing (Berking & Whitley, 2014). For example, when anxious individuals can better cope with social anxiety or when depressed individuals are better able to cope with hopelessness and low energy, they may see friends and family more often, which may, in turn, may improve their mood or increase their access to support (Berking & Whitley, 2014). Given that emotion regulation skills and socialization behaviour are linked, improving emotion regulation skills relates to social integration theory. In terms of individuals' self-efficacy in their ability to cope with emotions, it may be that improvements in emotion regulation confer a greater self-efficacy in individuals. Greater self-efficacy may, in turn, reduce anxiety related to emotion-provoking situations, thereby increasing one's willingness to enter into situations that elicit strong emotions. Practice facing situations that trigger strong emotions may further act as practice for adaptive emotion regulation and strengthen existing skills (Berking & Whitley, 2014). For example, if an individual writes about their fear of failing a math test, they may experience feeling anxious and learn they can tolerate some anxiety. They may become more willing to face anxiety-provoking situations, such as doing more math practice questions or spending more time on the math test rather than trying to avoid it (doing math).

Emotion Regulation and Mental Health

There is a growing body of evidence suggesting that emotion regulation abilities are associated with a large variety of mental health problems and that problems with emotion regulation (i.e., overuse of rumination, suppression of emotions, and underuse of cognitive reappraisal) underlie mental health problems such as social withdrawal, depression, substance abuse, anxiety, and behaviour problems (Aldao et al., 2016; Berking & Whitley, 2014; Cludius et al., 2020). Aldao, Nolen-Hoeksema, and Schweizer (2010) conducted a meta-analysis of 114

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studies examining the relationship between six emotion-regulation strategies and symptoms of

four psychological disorders: anxiety, depression, disordered eating, and substance abuse. The

researchers found that rumination, avoidance, and suppression strategies were associated with

more psychopathology (across the four disorder groups) and that the strategies of acceptance,

reappraisal, and problem-solving were associated with less psychopathology. The most

significant effects were found for rumination, avoidance, problem-solving, and suppression.

Notably, the relationship between the use of problem-solving and suppression strategies was

weaker for children and adolescents than it was for adults. Similarly, Seligowski, Lee, Bardeen,

and Orcutt (2015) found that the use of the adaptive emotion regulation strategies identified by

Aldao et al. (2010), such as acceptance and reappraisal of emotions, were weakly associated with

symptoms of post-traumatic stress ($r = 0.22$ for acceptance, which was not statistically

significant, and ($r = -0.04$ for reappraisal), than the use of maladaptive strategies such as

rumination ($r = 0.51$), experiential avoidance ($r = 0.40$), suppressing expression of emotions ($r =$

0.29), and suppressing thoughts ($r = 0.47$) which were more strongly associated with post-

traumatic stress.

Hu et al. (2014) conducted a similar meta-analysis of 48 studies examining the

association between two of the most researched emotion-regulation strategies (cognitive

reappraisal and expressive suppression) and positive indicators of mental health (life-satisfaction,

positive affect) and negative indicators of mental health (depression, anxiety, and negative

affect). Cognitive reappraisal was correlated positively with positive indicators of mental

health ($r = -.20$) and negatively with negative indicators of mental health ($r = -.20$). In contrast,

expressive suppression was correlated negatively with positive indicators of mental health ($r =$

$-.11$) and positively with negative indicators of mental health ($r = .19$). Larsen and Berenbaum

(2015) found similar results in a sample of women who had experienced a recent traumatic event. Expressive suppression predicted symptoms of post-traumatic stress disorder (PTSD) and depression ($r = 0.28$), whereas making meaning from the event predicted post-traumatic growth ($r = 0.37$) (Larsen & Berenbaum, 2015). Kashdan and Kane (2011) suggest that although stressful, contact with distressing thoughts and feelings may serve as a catalyst for finding benefits, reinterpreting experiences, and changing one's personal narrative following a traumatic experience.

The ability to appropriately express and regulate emotions plays an important role in adolescents' mental health (Smyth & Arigo, 2009; Telzer et al., 2014; Travagin et al., 2016). During adolescence, brain areas involved in rational thought and behavioural regulation (i.e., the prefrontal cortex, the parietal and temporal association complex, and the sensorimotor cortex) show increased development (Lee et al., 2014). In terms of their emotion regulation development, individuals acquire more social, cognitive, and emotional skills during adolescence, resulting in a greater capacity for controlling and managing emotions (Gross, 2015; Gullone & Taffe, 2011). Well-developed emotion-regulation skills help adolescents cope with stressful situations, whereas poor emotion-regulation skills are a risk factor for mental health problems (Horn et al., 2010; Ng et al., 2018).

Examining the relationship between children and adolescents, Jungmeen and Cicchetti (2014) examined the relationship between emotion regulation and psychopathology in children ages 6-12 years from low-income families who were attending a summer camp program. Some of the children had experienced maltreatment. The researchers found that lower emotion regulation scores were associated with higher externalizing symptomology (e.g., aggressive and delinquent behaviours), $r = -0.44$, and higher internalizing symptomology (e.g., withdrawal,

somatic complaints, anxiety- depression), r = -0.57. Similarly, Chervonsky et al. (2019) found

significant correlations between greater suppression use (a maladaptive emotion regulation

strategy) and lower family satisfactions for boys (r = -.274) and girls (r = -.245) and lower

friendship satisfaction for girls (r = -.202). Correlations were also significant for higher levels of

anxiety in boys (r = .281) and depression in girls (r = .279).

Adolescents are also highly susceptible to influences from the external world (e.g.,

family, friends, community, programs, and services) and are capable of remarkable adaptability

(Lee et al., 2014). As a result, adolescence is a time of considerable opportunity for intervention,

especially in developing emotion regulation skills (Horn et al., 2010; Steinberg, 2010). Given

that difficulties in emotion regulation are linked to various mental health difficulties, it is

essential to develop interventions to help young people express and manage their emotions.

Adapting Expressive Writing for use with Adolescents

It is essential to consider how adolescents' cognitive and emotional abilities may

influence their successful participation in an expressive writing intervention because they may

require guidance to engage in healthy emotion regulation practices (Travagin et al., 2015). Many

of the cognitive skills that are important for expressive writing are still developing during

adolescence and may develop at different rates depending on the individual (Fivush et al., 2007;

McLean & Mansfield, 2012; Reynolds et al., 2000; Travagin et al., 2015). For example, Winslett

(2005) found that adolescents differed significantly from adults in their writing patterns over

time. While adults tended to use fewer emotion words over writing sessions and more words

related to insight and causation, adolescents were found to use more emotion words over time in

their writing and more occasional insight and causation words. Horn et al. (2010) explains that

because adolescents are asked to confront emotionally evocative topics that they may have

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previously avoided, they will require alternative emotion regulation strategies, so they do not become overwhelmed. As a result, adolescents will likely need support and scaffolding during expressive writing to regulate their emotions and create a coherent narrative that makes meaning from their experiences (Margola et al., 2018; McLean & Mansfield, 2012; Travagin et al., 2015).

To support individuals as they write, Adams (2013) suggests providing a menu of expressive writing options that range in the amount of structure imposed. Adams' writing techniques range from fill-in-the-blanks to a series of sentence starters, making lists, writing a letter, and free-writing. The writing options from the menu will provide participants who have difficulty writing with more structure and reduce the demands of the number of words to write. Some participants may find writing lists or filling in blank sentences less overwhelming than writing, as it requires the participant to write fewer words (Adams, 2016). Using comic strips is another method of providing increased structure and reducing the amount of writing needed. In a case study of one teenager's experience creating nonfiction comics as part of an English class, the student indicated that creating a comic helped to separate and organize ideas and that expressing emotions through writing was easier than through speaking (Kersulov, 2016). Cleaver (2008) remarked that comic strips could be an incredibly engaging writing format for youth with a history of behavioural difficulties.

Several researchers have added structure to Pennebaker's original expressive writing paradigm when working with adolescents (Frattaroli, 2006; Jones et al., 2018). By providing structure, participants are encouraged to use adaptive emotion-regulation strategies as they write, as opposed to less adaptive strategies such as rumination or catastrophizing. For example, participants may be asked to reflect on specific actions they have taken towards making their

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success a reality, or in the case of a challenging event, focusing on the benefits that can come

from persisting through adversity such as becoming wiser or more capable (Jones et al., 2018).

      Another method of providing support to adolescent participants of expressive writing is

for competent adults (parents, teachers, counsellors) to provide a model for adolescents to

restructure stressful events to facilitate coping and well-being (Fivush et al., 2007; McLean &

Mansfield, 2012; Telzer et al., 2014). Travagin et al. (2015) suggest that developing emotion-

regulation skills may have an interpersonal component where young people learn skills from

other competent individuals. Through supportive conversations with adults, young people

practice communicating their feelings and reflecting on their emotions during past events (Bird

& Reese, 2006). When adults express their emotions and have conversations about a past adverse

event and related emotions, youth develop a more extensive repertoire of words to describe their

own emotions and past events, helping them to understand their experiences better (Marin et al.,

2008). Adults can further help youth build their meaning-making of past adverse events by

validating their contributions to the conversation, elaborating on events or encouraging their

child to elaborate on events by asking open-ended questions, discussing the causes of emotions,

and organizing and interpreting events (McLean & Mansfield, 2012). Adults can also prompt

children to move away from all-or-nothing thinking by reminding them to consider both positive

and negative attributes and experiences, leading to a more balanced self-understanding (Desocio,

2005). Facilitators of expressive writing interventions can support participants by actively

listening to participants, affirming participants' writing and process, refraining from criticism,

providing a writing structure, and offering a variety of creative ideas and possibilities (Adams,

2016).

Effectiveness of Expressive Writing for Improving Adolescent Mental Health

As expressive writing has garnered increased research attention over the years, meta-analyses have been conducted to ascertain the effectiveness of the intervention. However, as outlined below, drawing overarching conclusions is difficult due to the heterogeneity of the studies included. In a 2006 meta-analysis, Frattaroli found a significant and positive average r-effect size of 0.075, suggesting that expressive writing has a small yet significant effect.[1] Significant positive results were found for psychological health (i.e., distress, depression, positive functioning, anger, and anxiety) and general functioning (i.e., work-related outcomes, social relationships, cognitive functioning, and school outcomes). It is important to note that the effect sizes of the included studies varied, from -0.291 to 0.592. Frattaroli argued that given the heterogeneity of the included studies in terms of intervention "ingredients," participant population, and outcomes examined, it is most pertinent to explore the moderators. An examination of the moderators revealed that participant stress level moderated study outcomes, that is, participant stress level was correlated with larger effect sizes ($r = 0.102$) such that participants experiencing higher levels of stress tended to benefit more from the intervention. It is possible that when individuals who are not experiencing challenges participate in expressive writing, they become distressed, bored, or irritated with the intervention (Frattaroli, 2006).

More recently, meta-analyses of expressive writing interventions for mental health problems have revealed small but significant effects for depression ($g = -0.09$) immediately after the intervention and nonsignificant effects at the first ($g = -0.03$) and second follow-ups ($g = -0.03$; (Reinhold et al., 2018), a small effect size for post-traumatic symptoms ($d = 0.36$), and minor to negligible effects for post-traumatic growth ($d = 0.10$), and quality of life ($d = 0.01$;

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[1] R-effect sizes are categorized as Small 0.2, Medium 0.5, and Large 0.8.

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Pavlacic et al., 2019).[2] In addition, in a meta-analysis of the effects of expressive writing on depression, anxiety, and stress in healthy and subclinical populations, Guo (2022) also found an small yet significant effect of $g = -0.12$. Overall, it appears that expressive writing consistently demonstrates small yet significant effects on mental health symptoms such as anxiety, depression, and stress in studies of adult participants.

While the meta-analyses above provide important information on the effectiveness of expressive writing, the results cannot necessarily be assumed to hold for adolescents. As individuals undergo rapid biological, social, emotional, and cognitive changes during adolescence, examining variables that best explain positive mental health outcomes and well-being at a variety of age-ranges can provide a nuanced picture to inform adolescent interventions (Lee et al., 2014). For adolescents specifically, a recent meta-analysis by Travagin et al. (2015) found that expressive writing interventions positively affected internalizing behaviour, problem behaviour, and school participation with mean g effect sizes ranging from 0.131 to 0.246. However, the effectiveness of expressive writing varied considerably across studies, with some individual studies obtaining negative results and others obtaining g effect sizes as large as 1.488 (Travagin et al., 2015). This variation may be partly explained by *how* expressive writing interventions are implemented (Cargo et al., 2015; Durlak & DuPre, 2008; Frattaroli, 2006; Sloan & Marx, 2018; Travagin et al., 2015). For example, the number of writing sessions and the wording of writing instructions significantly moderate the effectiveness of expressive writing interventions (Sloan & Marx, 2018). In the meta-analysis above, the included studies varied in terms of presenting problems such that some participants had clinically concerning problems (e.g., high levels of anxiety or depression), some were considered to be living in a vulnerable

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[2] Hedge's G effect sizes are categorized as Small 0.2, Medium Effect = 0.5, and Large Effect = 0.8

context or were suspected of experiencing sub-clinical mental health problem (e.g., living in neighbourhoods with high rates of violence and experiencing body image concerns), and some youth were students without any particular concerns identified. It cannot be assumed that all students and youth living in vulnerable contexts are experiencing mental health problems. When examining whether expressive writing is an effective treatment, it is helpful to consider whether the included population had a problem in need of treatment.

Promoting well-being in non-clinical populations of youth

Expressive writing interventions have regularly been used to promote well-being in the general population, for example, with groups of students. Overall, the results have been mixed as outlined below. Interventions with non-clinical populations have produced significant effects on mental health-related outcomes such as reductions in anxiety ($\eta^2 = 0.04$; Hines et al., 2016), negative affect ($p < .01$; Barcaccia et al., 2017; $g = 0.27$; Horn et al., 2010), and distress as well as a significant increase in positive disposition ($\eta^2 = 0.03$; Soliday et al., 2004). Notably, Barcaccia's conclusions are limited as no random assignment was used.

Other important outcomes included significant improvements in working memory ($d = 0.93$; Fartoukh & Chanquoy, 2020), goal persistence ($d = 0.46$; Jones et al., 2018), academic self-concept in the short-term ($\eta^2 = 0.037$; Facchin et al., 2014), grades in the short term ($g = 0.19$; Horn et al., 2010), math performance ($d = 0.05$; Ramirez & Beilock, 2011), an increase in social contact ($\eta^2 = 0.09$; Travagin et al., 2016), and a decrease of days absent ($g = 0.42$; Horn et al., 2010). However, it should be noted that control group participants in Facchin et al.'s (2014) study were asked to write about school, which may have been an emotional and meaningful topic for some youth. Further, one qualitative study of a non-clinical sample of youth who participated

in expressive writing reported that writing helped the youth gain clarity about their experiences and take a different perspective (Banyard et al., 2015).

However, several studies have revealed decreases in mental health symptoms for *all* participants, regardless of assignment to the control or experimental condition, in terms of math anxiety (Hines et al., 2016), anxiety ($d = 0.79$; (Fartoukh & Chanquoy, 2020; Reynolds et al., 2000), physical symptoms (Reynolds et al., 2000), and depression ($d = 0.69$; Fartoukh & Chanquoy, 2020). It may be that the control group in Hines et al.' (2016) study also wrote about emotional topics, as participants were directed to write about plans after high school, perceptions of teachers, and their favorite time of year, which may have inadvertently been emotional topics for some youth. While the content of writing was examined, no manipulation check was conducted to ascertain whether the control group refrained from writing about emotional topics or content related to math anxiety.

It is important to consider and reduce the potential negative impacts of any intervention, including expressive writing. Travagin et al. (2016) found a decrease in positive affect for those who took part in the expressive writing ($\eta^2 = 0.11$; Travagin et al., 2016). Travagin et al. suggested that when adolescents who are not experiencing problems engage in emotional disclosure, it may create distress rather than resolve it, as youth may engage in rumination and over-analysis. In the case of Reynolds, the authors hypothesized that the children (ages 9-13) may have been too young to engage in processing through writing fully, and they further noted that the children wrote very little, about 150 to 200 words per day.

Other researchers have found no significant effects resulting from expressive writing interventions on mental health outcomes such as symptoms of anxiety and depression (Barcaccia et al., 2017; Fartoukh & Chanquoy, 2020; Giannotta et al., 2009), or on physical symptoms of

stress (Hines et al., 2016; Soliday, Garofalo, & Rogers, 2004). Notably, while Barcaccia et al. (2017) hypothesized expressive writing interventions would support youth's coping with a transgression by a friend, there was no indication that the authors had confirmed how many of the youth had experienced a transgression and to what extent they were distressed by any transgression. Similarly, there was no indication that the participants in Fartoukh and Chanquoy's 2020 study were experiencing clinically significant levels of anxiety or depression symptoms. The authors noted that their measures might not have been discriminating enough for a non-clinical sample. In their 2009 study, Giannotta et al. found that peer victimization moderated the intervention effect on coping, revealing that youth who experienced more victimization showed increased cognitive restructuring and avoidance coping relative to youth who experienced less victimization. Their results suggested that youth who have experienced stressors or traumas may benefit from expressive writing.

The studies reviewed above shared the goal of promoting the mental health of the general population. It is recommended that mental health promotion focus on enhancing protective factors in addition to reducing symptoms associated with mental illness (CAMH, 2014). The research on promoting positive mental health of adolescents using expressive writing is nascent and has focused on academic outcomes and symptoms of mental illness with few exceptions. There is a need for more research attention on whether expressive writing promotes other protective factors such as self-esteem, social functioning, and coping skills.

The aforementioned studies have all been conducted in school settings. School settings have advantages in terms of reaching youth, however, they may systematically miss youth who do not attend school, such as those who opted for virtual school during the context of the COVID-19 pandemic. Schools also pose difficulties for conducting research such as a potential

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lack of buy-in from teachers and possible cross-contamination if participants from different conditions discuss the study with one another. Further, quasi-experimental designs are often necessitated due to the practicality of randomly assigning classrooms rather than assigning individual students.

Intervening with youth experiencing symptoms of mental illness

Only three studies, to this writer's knowledge, have examined the effectiveness of expressive writing for youth experiencing sub-clinical or undiagnosed mental health problems such as symptoms of depression. Expressive writing interventions have been found to produce significant decreases in depression levels, with their scores falling anywhere from mild to severe before the intervention ($M = 8.9$) to the average scores falling within the normal range ($M = 4.8$) afterwards (Istiqomah et al., 2019). However, the authors did not report an effect size, making it difficult to ascertain the magnitude of the change. Expressive writing has been found to significantly reduced test anxiety in a population of students with high anxiety levels ($\eta^2 = 2.02$; (Shen et al., 2018).

For youth with social-emotional difficulties, expressive writing in the form of blogging has also been found to produce significant improvements in social behaviours ($h^2 = 0.26$) and self-esteem ($h^2 = 0.16$), as well as reducing social-emotional difficulties ($h^2 = 0.32$; Boniel-Nissim & Barak, 2013). Blogging may be accessible to many youth, however, it is possible that adolescents living in vulnerable circumstances may not have access to computers. Blogging publicly may also present privacy and safety risks for adolescents who share vulnerable or identifying information, or bloggers may refrain from sharing intimate details or accessing difficult emotions for fear of judgement.

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Intervening with youth living in vulnerable contexts

Expressive writing has been used to support and promote the mental health of youth who are experiencing or presumed to experience poor mental health due to situational factors such as experiencing a stressor (e.g., poor housing, low social support, witnessing violence). As with other youth groups, results have been mixed, as described below. In a group of adolescents living in neighbourhoods experiencing high levels of violence, significant declines in aggression levels and emotional liability were found, which was strongest for those experiencing the highest levels of violence (d = -0.48; Kliewer et al., 2011). Other researchers have found a decrease in traumatic grief symptoms in a sample of war bereaved youth (η^2 = 0.19; Kalantari et al., 2012), and an increase in resilience (i.e., their ability to bounce back and recover from stress), with a large effect size (η^2 = 0.27) in a group of youth involved in the child welfare and criminal justice system (Greenbaum & Javdani, 2017).

By contrast, Greenbaum and Javdani (2017) found no significant changes in the youth's negative mental health symptoms (i.e., shame, guilt, negative affect). Nevertheless, the authors argued that the gain in resilience participants experienced after just two weeks "may furnish youth with psychological resources to buffer against, or modify the impact of, adversities they face on an ongoing basis" (p. 226). However, it should be noted that Greenbaum and Javdani's conclusions are limited by the lack of random assignment of participants and differences between the control and intervention groups in terms of site and dose of intervention received. Curry (2011) found that in a study of expressive writing for youth who grew up in the context of warfare in Peru, there were decreases in depression symptoms and negative affect, as well as an increase in positive affect. However, none of the changes were statistically significant. Curry also found a significant increase in somatic symptoms in the writing group and hypothesized that

this increase may have been partly due to cultural considerations. Notably, substantial difficulties with implementation were reported to have taken place, but fidelity and other implementation-related variables were not formally assessed.

Parker, Stewart, and Gantt (2006) conducted an expressive writing intervention with adolescents aged 12-17 who had experienced domestic violence. The authors examined the change in positive emotion words used over the course of four 90-minute writing sessions and found that the experimental group reported less sadness, dysphoric mood, negative affect, and negative self-evaluation, although these decreases were not statistically significant.

Gallant and Lafreniere (2003) examined whether 10-17-year-old children of alcoholics would improve their psychological and physiological functioning through writing for 25 minutes on three consecutive days. The researchers found no significant differences between the emotional and active control (non-emotional writing) groups, as they both significantly decreased internalizing and physical symptoms. The authors postulate that because the children were so young (half of the participants were under the age of 12), it may have been difficult for the participants to express their thoughts and feelings verbally and create a coherent narrative based on their experience and that this may account for why the emotional writing group did not selectively evidence the most significant improvement. However, the authors did not specify if they accounted for co-intervention effects, that is, whether the participants were concurrently receiving other interventions such as family support from the treatment centre for alcoholism, support from their school, or other individualized treatment, which could have biased their results.

Unterhitzenberger and Rosner (2014) examined whether expressive writing could improve prolonged grief symptoms in orphans aged 14 to 18 whose parents died in the 1994

genocide in Rwanda. The authors found that grief symptoms did not change significantly for participants in the control or experimental conditions. However, they noted that grief may not have been the most appropriate outcome to examine as adolescents may not have remembered the death of their parents as the youth would have been one to four years old during the genocide. Further, the authors did not examine critical aspects of the intervention's fidelity, such as contamination and dose delivered. Finally, the expressive writing paradigm was not adapted to provide support and modelling to adolescents as they wrote.

In a qualitative study, Margola, Facchin, Molgora, and Revenson (2010) examined whether expressive writing would be beneficial for 15-year-olds who experienced the death of a classmate. The researchers described how the adolescents moved from a factual description of the event over three writing sessions to more complex and emotional processing. In the third writing session, the participants used more emotion, insight, and causation-related words in their narratives. Their findings were that some 15-year-olds could "regulate their emotional responses, integrate his death into their cognitive schema and, in some cases, make meaning of the event" (Margola et al., 2010, p. 258).

It is difficult to draw an overarching conclusion from the studies outlined above, due to the heterogeneity in study methodology. There have been substantial differences in the populations examined (i.e., ranging from youth in the general population to youth with clinically significant problems), measured different outcomes (e.g., symptoms of mental illness, protective factors, academic outcomes), and sometimes adapted the expressive writing intervention substantially (e.g., including psychoeducation, using online delivery). Nevertheless, expressive writing can potentially improve the mental health of youth experiencing symptoms of mental health problems, especially when the writing intervention is adapted to meet their needs.

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Effectiveness of Expressive Writing for Improving Emotion Regulation

While researchers discuss and allude to emotion regulation as an outcome of expressive writing interventions has received little attention, and results have been mixed. Wong and Mak (2016) found no significant difference in participants' emotion regulation abilities before and after an expressive writing intervention in a study of healthy adults ($p = 0.64$). Notably, the participants in the study were healthy adults who rated their emotion regulation abilities relatively highly (3.6 out of 5) at baseline and their ratings remained high at posttest and follow-up. It may have been that the participants were already functioning well and did not have much room for improvement. By contrast, in another study of healthy adults, Cheung, Chung, and Ng (2019) found that participants in the expressive writing group showed significant increases in their cognitive reappraisal and significant decreases in expressive suppression at the one-month follow-up compared to the control groups. In addition, the researchers found that cognitive reappraisal mediated between expressive writing and life satisfaction. However, the authors did not monitor whether participants were receiving other psychological interventions concurrently, suggesting that there may be potential contamination effects.

Emotion regulation as an outcome or moderator of expressive writing outcomes has been examined in distressed populations (e.g., accident survivors and cancer caregivers). In a study of adult motor-vehicle accident survivors, Wisco, Sloan, and Marx (2013) found that participants in the expressive writing group showed a significant decrease in rumination compared to the control group at the three-month follow-up ($pr = 0.51$).[3] Thus, emotion regulation may sometimes moderate the mental health outcomes of expressive writing interventions. Harvey, Manusov, and Sanders (2018) examined whether expressive writing alleviated emotion

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[3] A partial correlation coefficient (pr) indicates the estimate of effect size.

regulation difficulties of cancer caregivers. The researchers found that both the traditional expressive writing and benefit-finding expressive writing groups demonstrated significant reduction in emotion regulation difficulties compared to the control group (β = -0.58). Harvey et al. (2018) examined participant writing and found that using negative emotion words (but not cognitive process, affect, or pronoun word usage) during the writing activity was associated with a significant increase in emotion regulation difficulty (β = 0.65).

In terms of the adolescent population, there is evidence that adolescents engage in some aspects of emotion regulation, particularly cognitive emotion regulation when participating in expressive writing. For instance, Giannotta et al. (2009) found that expressive writing can help adolescents reframe their experiences in a positive light. In their study of Italian 7th graders who wrote for four sessions, Giannotta et al. (2009) found that the participants increased their use of positive reframing coping strategies (η^2 = 0.06). Similarly, Margola, Facchin, Molgora, and Revenson (2010) described how over the course of three writing sessions, adolescents who experienced the death of a classmate moved from a factual description of the event to more complex and emotional processing, indicating that the youth were able to "integrate his death into their cognitive schema and, in some cases, make meaning of the event" (p. 258). A recent qualitative study by Groleau et al. (2023) found that participants labelled, reflected on, and learned to manage their emotions.

While the studies outlined above have examined emotion regulation or related concepts (coping), results have been mixed, and it remains to be demonstrated whether expressive writing can be an effective intervention for assisting youth in gaining skills in emotion regulation. This question is worthy of investigation as expressive writing is a simple and brief intervention for shaping and encouraging adaptive emotion-regulation processes. Further, what and how

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participants write during expressive writing interventions may help explain some intervention outcomes (see: Tausczik & Pennebaker, 2010), yet it is not clear whether the characteristics of writing can explain emotion regulation outcomes, except for work by Harvey et al. (2018) which examined only adults. Therefore, further research is warranted in the area of expressive writing for adolescents.

Process Evaluation

A process evaluation "addresses what the intervention program consists of, how activities serve short-term objectives, how activities are carried out, and what other factors contribute to outcomes" to gain a deeper understanding of how the results should be interpreted (Steckler & Linnan, 2002, p. 7). A process evaluation can involve assessing factors such as recruitment, attrition, dose of the intervention received, fidelity (i.e., whether the program was implemented as intended), and participant engagement in the intervention (Cargo et al., 2015). At a minimum, evaluations of interventions are recommended to include information on recruitment, reach, dose delivered, dose received, and fidelity (Cargo et al., 2015; Saunders et al., 2005; Steckler & Linnan, 2002).

Conducting process evaluations can help guard against Type III errors, that is, concluding a program is ineffective when it has not been adequately implemented (Steckler & Linnan, 2002). By examining such factors, a process evaluation can provide information as to why an intervention succeeded or failed and what key ingredients may have contributed to the latter (Cargo et al., 2015; Chen, 2005; Durlak & DuPre, 2008; Dusenbury et al., 2003; Steckler & Linnan, 2002). For example, if an intervention is unsuccessful, a process evaluation can reveal whether poor outcomes may have been due to shortcomings in implementation (Chen, 2005; Durlak & DuPre, 2008). By contrast, when an intervention is successful, it is helpful to know

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whether the intervention was implemented as intended or altered in practice, so that the positive

outcomes can be reproduced (Durlak & DuPre, 2008). Furthermore, a process evaluation can

inform whether it is feasible to implement the intervention across different settings, as

intervention effectiveness may vary by age, gender, geographic location, and other contextual

factors (Das et al., 2016; Dusenbury et al., 2003).

Process Evaluations of Expressive Writing Interventions

In a meta-analysis of systematic reviews of mental health interventions for adolescents,

Das et al. (2016) noted that studies lacked process evaluations and viewpoints of the youth

involved. In the case of expressive writing interventions specifically, examining participant

engagement has been helpful in explaining outcomes. Participant engagement refers to subjective

thoughts and feelings about a program, such as their "satisfaction with the program,

commitment, perceived relevance of the program" as well as their "enthusiasm or enjoyment" of

the program (Cargo et al., 2015). For example, consider Curry's (2011) study of expressive

writing for Peruvian students who had experienced trauma. A visual inspection of a plot of the

marginal means revealed that participants who rated the intervention as not meaningful did not

experience changes in their somatic symptoms over time, whereas participants who rated the

intervention as extremely meaningful did (Curry, 2011). However, it should be noted that the

changes were not statistically significant.

Attrition has been examined as part of a process evaluation in the context of an

expressive writing intervention. For example, Stice, Burton, Bearman, and Rohde (2007)

compared expressive writing and brief group CBT for adolescents with elevated depression

symptoms. The authors found that CBT ($r = 0.48$) and expressive writing ($r = 0.40$) both

produced moderate effects reducing depressive symptoms at posttest, but that 24% of

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participants dropped out of the CBT group whereas no participants dropped out of the expressive writing group. The authors hypothesized that participants may find interventions that focus on emotional expression to be worthwhile and that they may have found the CBT intervention to be demanding (Stice et al., 2007).

Rationale and Original Contribution

Mental health problems are common among adolescents, yet a large unmet need remains in terms of accessing services (Georgiades et al., 2019; Silva et al., 2020). While effective interventions have been developed, there remains a need to develop interventions that are effective, feasible, require few resources, and engage youth (Durlak & DuPre, 2008; WHO, 2020). Expressive writing has consistently been shown to produce small yet significant effects in terms of mental health outcomes, yet great variation within the literature making it difficult to draw overarching conclusions regarding under what circumstances and for whom the intervention is effective. The variation in effect sizes (0.131 to 0.246) observed in Travagin et al.'s (2015) meta-analysis for example, may be partially explained by factors related to fidelity of implementation such as whether participants were engaged in the writing intervention and whether participants actually attended the number of writing sessions that were intended (Cargo et al., 2015; Durlak & DuPre, 2008; Sloan & Marx, 2018; Travagin et al., 2015). It is important to carefully capture the process of the intervention, as historically within the expressive writing literature it has been difficult to determine which component(s) of the intervention contributed to its success due to the heterogeneity of studies in the field (Juth et al., 2021; Sloan & Marx, 2018).

One potential key ingredient to the success of expressive writing interventions may be emotion regulation skills, which have received very little research attention, despite the close and

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well-established association between emotion regulation skills and mental health outcomes. To this writer's knowledge, the emotion regulation skill of modification has been examined as an outcome of expressive writing interventions for adolescents, in only two studies. Due to developmental considerations, results from adult studies cannot necessarily be extrapolated to adolescent populations, and the question remains as to whether expressive writing interventions can promote emotion regulation skills in adolescents. This program of research will be the first to examine both the process of emotion regulation occurring during an expressive writing intervention for adolescents, and emotion regulation skills and practices as an intervention outcome.

Research Objectives

This research program is composed of two studies. The studies composing this dissertation explored the process and key ingredients of expressive writing interventions for adolescents. Expressive writing is an intervention often hailed for its potential in yielding consistent and positive results despite the few resources required for implementation in terms of equipment needed and implementor training. Yet, there is a lack of consensus regarding the underlying mechanisms of the intervention, the key ingredients needed to produce beneficial outcomes, and for whom and for which mental health conditions expressive writing is effective.

The first study explored the current landscape of expressive writing scholarship and how it is positioned to determine to the critical ingredients of expressive writing interventions.

Specifically, Study 1, *A Scoping Review of School-Based Expressive Writing Implementation: Missed Opportunities and New Research Directions*, explored the following objectives:

1. What is the current state of implementation reporting in the school-based expressive writing literature?

2. Are there areas where more rigorous reporting is needed?

3. What are the recommendations for future research and implementation reporting practices?

Recent evidence suggests that emotion regulation may be an underlying mechanism between expressive writing interventions and improved mental health (Cheung et al., 2019; Wisco et al., 2013). However, results with adult populations have been mixed and research with adolescent populations is limited to two studies of children in school settings (Giannotta et al., 2009; Margola et al., 2010). It remains unclear whether expressive writing can be an effective intervention for assisting youth experiencing mental health difficulties to gain skills in emotion regulation. This question is worthy of investigation as expressive writing is a simple and brief tool for shaping and encouraging the development of adaptive emotion-regulation processes. Further, given that difficulties in emotional-regulation skills are linked to poor mental health outcomes, there is a compelling need to develop interventions that will target the development of these skills (Gross, 2015; Ng et al., 2018). However, whether expressive writing helps adolescents improve their emotion regulation skills remains to be seen. Gross' (1998) process-oriented model of emotion regulation is useful for understanding and organizing the various skills adolescents may use to regulate their emotions during an expressive writing intervention.

Examining how expressive writing can be used to develop emotion regulation skills is particularly important for the adolescent population. Adolescence is a critical developmental window to prevent mental health problems as adolescents are highly responsive to external influences and have a greater capacity for cognitive emotion regulation and constructing positive

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life stories than children (Desocio, 2005b; Gross, 2015; Gullone & Taffe, 2011; Horn et al.,

2010; Lee et al., 2014; Steinberg, 2010). Some adolescents may not be comfortable speaking

about their difficulties and emotional experiences, and as a result, the option to write about their

difficulties provides an opportunity to reach youth who may not otherwise express their emotions

(Haner & Pepler, 2016; Sloan & Marx, 2018).

The purpose of the second study was to evaluate expressive writing's impact on

adolescents' (a) emotion regulation skills and (b) internalizing symptoms related to mental

health.

Study 2, *Evaluation of an Expressive Writing Intervention for Adolescents' Emotion

Regulation and Mental Health*, explored the following objectives:

1. What are adolescents' experiences of emotion regulation during the writing intervention?

2. What is the impact of an expressive writing intervention on emotion regulation skills?

3. What is the impact of an expressive writing intervention on youth's mental health?

It is hypothesized that the expressive writing intervention will improve adolescents

emotion regulation and mental health outcomes.

Chapter III

Study 1

A Scoping Review of School-Based Expressive Writing Implementation: Missed Opportunities and New Research Directions

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Abstract

Background: Expressive writing (EW) interventions are an effective, flexible, and cost-efficient option for mental health promotion, making them ideally suited for resource-limited school settings. However, the effectiveness of EW interventions varies greatly across studies, which may be partly explained by how EW interventions are implemented. As school-based EW interventions become increasingly popular and more widely used, rigorous reporting of implementation can help advance this emerging field by informing how variation in implementation across studies influences intervention outcomes. **Methods**: The present scoping review assessed the current state of implementation reporting in the school-based EW literature and identified areas where more rigorous reporting is needed. Out of an initial sample of 334 studies, 19 were eligible for inclusion in the review. Data were analyzed for critical issues and themes derived from Cargo et al.'s (2015) Checklist for Implementation (Ch-IMP). **Results**: Overall, the results of this scoping review indicate that researchers who implement EW in school settings have not consistently assessed key implementation domains such as dose received and fidelity. **Conclusions**: To address this problem, the present review adds a unique contribution to the literature by identifying how rigorous reporting of implementation can strengthen the evidence base for school-based EW interventions.

Keywords: expressive writing; implementation; school; adolescents

A Scoping Review of School-Based Expressive Writing Implementation: Missed Opportunities and New Research Directions

Introduction

Adolescence marks a high-risk period for the onset of psychopathology, such as depression and anxiety (Walker, 2002). At the same time, during adolescence, individuals are highly susceptible to environmental influences and are capable of remarkable adaptability (Lee et al., 2014). As a result, adolescence is a time of considerable opportunity for intervention (Horn et al., 2010; Steinberg, 2010). Helping adolescents develop the tools for expressing, understanding, and managing their emotions may help prevent mental health problems throughout the lifespan and support social and academic functioning in the classroom (Horn et al., 2010; Ng et al., 2018; Smyth & Arigo, 2009; Travagin et al., 2016).

Expressive Writing (EW) is a brief, individually-focused psychosocial intervention that promotes emotional expression and processing of emotions through writing about stressful or emotional topics such as peer difficulties or traumatic events (Nazarian & Smyth, 2013; Travagin et al., 2015). Writing may help people interpret their experiences, search for explanations, promote insight and understanding, or reappraise their situation in a different light (Frattaroli, 2006; Travagin et al., 2015). EW interventions are an effective, flexible, and cost-effective option for mental health promotion, making them ideally suited for resource-limited settings, such as schools (Travagin et al., 2015; Winslett, 2005). School-based mental health programs have great potential to address young people's mental health needs and reach students who would otherwise not have access to services (Paulus et al., 2016). In addition, promoting social

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and emotional development within schools also supports the academic functioning of all students (Durlak et al., 2011; Paulus et al., 2016).

EW interventions for adolescents positively affect internalizing behaviour, problem behaviour, and school participation with mean g effect sizes ranging from 0.131 to 0.246 (Travagin et al., 2015). However, the effectiveness of EW varies considerably across studies with some individual studies obtaining negative results and others reporting g effect sizes as large as 1.488 (Travagin et al., 2015). This variation may be partly explained by how EW interventions are implemented (Cargo et al., 2015; Durlak & DuPre, 2018; Frattaroli, 2006; Travagin et al., 2015; Sloan & Marx, 2018). However, in the EW literature, insufficient methodological information and significant paradigm adaptations make it difficult to determine which components of the intervention contribute to its success.

It is crucial to provide adequate contextual information on implementation to explain why an intervention succeeded or failed, refine theories, and determine which program components are fundamental to the intervention's success to inform whether it is feasible to implement the intervention in practice (Cargo et al., 2015; Cargo et al., 2018; Dusenbury et al., 2003; Steckler & Linnan, 2002). When interventions are free of serious implementation problems, effect sizes are two to three times larger than when problems are present (Durlak & DuPre, 2018).

School settings have characteristics and needs that can influence the successful implementation of an intervention (Dusenbury et al., 2003; Feagans Gould et al., 2016; Forman & Barakat, 2011; Horn et al., 2010; Mendelson et al., 2013; Owens et al., 2014). The organizational leadership of the school, educational policies, school philosophy, teachers' engagement, and the school schedule are all contextual variables that may influence implementation (Dusenbury et al., 2003; Forman & Barakat, 2011; Mendelson et al., 2013;

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Owens et al., 2014). Given the unique school context, it is important to examine the effectiveness of EW in real-world settings such as schools, rather than assume that success in research settings will carry over to community settings.

In the EW literature, much research on the effectiveness and mechanisms of EW has been examined in highly-controlled research settings (Horn et al., 2010). Outside of research settings, implementation may take place in less-than-ideal circumstances, making it difficult to implement interventions with a high level of fidelity (Dusenbury et al., 2003). Thus, examining the effectiveness and implementation of interventions in the context in which they will be implemented provides a more accurate understanding of an intervention's effectiveness (Durlak & DuPre, 2008).

Objectives

Despite the importance of assessing implementation, these domains are often not reported frequently enough in primary research to be examined in meta-analyses and systematic reviews (Durlak & DuPre, 2008). As school-based EW interventions become increasingly popular and more widely used, rigorous reporting of implementation can help advance this emerging field by informing how variation in implementation across studies influences intervention outcomes. Thus, the purpose of the present scoping review is to (a) assess the current state of implementation reporting in the school-based EW literature, (b) identify areas where more rigorous reporting is needed, and (c) provide recommendations for future research and implementation reporting practices.

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Method

Inclusion Criteria

Primary research studies describing EW interventions conducted in school-based settings were considered for inclusion in this scoping review. Studies must have been published after 1986, the year of Pennebaker's seminal research on EW, and include some variation of their original written emotional disclosure task (Pennebaker & Beall, 1986; Pennebaker, 1997) . All research designs that assessed at least one outcome and were published in English were eligible for inclusion.

Search Strategy

Studies were identified by searching the following databases: PsycInfo (1806 Ovid), ERIC (EBSCO), Scopus, and ProQuest Theses and Dissertations Global (last 5 years). Within PsycInfo, searches were limited by age group and within ERIC searches were limited to elementary, middle, and high school populations. Appropriate search terms were identified by reviewing the indexing terms of several recent meta-analyses focusing on EW (see Baikie & Wilhelm, 2005; Frattaroli, 2006; Travagin et al., 2015).

Searches were conducted using two groups of keywords. To identify EW interventions, the following keywords were used: expressive writing, expressive emotional writing, emotional writing, emotional disclosure, therapeutic writing, creative writing for therapeutic purposes, narrative writing, Pennebaker, written disclosure, written emotional disclosure, and written emotional expression. To identify school-based interventions, the second group of keywords was as follows: school, high school, middle school, elementary school, primary school, and secondary school. The searches were conducted on June 12th, 2018, updated in December 2022, and further studies were also identified in January 2023 by searching the reference lists of

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relevant articles. All papers were independently reviewed by two authors and discrepancies were

discussed until an agreement was reached. Inter-rater reliability was assessed using Cohen's

kappa. Kappa tests produced a score of .91, indicating almost perfect agreement.

Extraction of Results

Using Arksey and O'Malley's (2005) charting technique, data were extracted,

synthesized, and interpreted based on key issues and themes. Data extraction was independently

completed by two authors and discrepancies were discussed until an agreement was reached.

Themes were derived from the Program Implementation (process evaluation) subsection of

Cargo et al.'s (2015) Checklist for Implementation (Ch-IMP), a theoretically-informed checklist

for assessing implementation practices. Supplemental information was also examined when

available. Variables related to study characteristics were also recorded.

Results

Study Selection and Study Characteristics

Searches returned 367 records, which were imported into Endnote and screened for

eligibility in three phases: initial abstract and title screening, a strict full-text screening, and a

data extraction phase, resulting in 19 records meeting eligibility criteria (see Figure 1). Most

studies involved adolescents and targeted outcomes related to mental health (e.g., anxiety).

Additional details about the included studies can be found in Table 1.

Implementation Rigour and Reporting

While all 19 studies reported on at least one dimension of implementation, the number of

implementation domains reported varied greatly, ranging from one to eight ($M = 5.21$, SD =

1.68). Notably, a single study reported on all five minimum domains of implementation

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(recruitment, reach, dose delivered, dose received, and fidelity). A comprehensive list of the domain(s) assessed by each study can be seen in Table 2.

Adaptation. Almost all studies (n = 17) made at least one adaptation to Pennebaker and Beall's (1986) original paradigm, with a mean of 1.7 adaptations per study (SD = 0.87). Twelve studies altered the dose, thirteen studies adapted the writing instructions by asking participants to write about a specific upsetting experience, positive emotions, successes and failures, or changing the writing instructions as the sessions progressed. Four studies provided time for discussion in addition to writing, such as discussing their anxieties, brainstorming topics to write about, discussing writing in general, or providing psychoeducation.

Recruitment, attrition, and reach. Almost all studies (n = 16) provided some information related to recruitment. Most commonly, information was provided on consent (n = 10), assent (n = 9), and incentives to participate (n = 3). Few studies discussed recruitment at the school level and as a result, it remains unclear which subgroups of schools are more or less likely to be successfully recruited to participate in EW. There may be bias in the kinds of schools that choose to participate in EW interventions as one school was chosen "due to the teachers' and principal's willingness to participate" and another reported: "two of our schools were charter schools eager to try activities that increase social-emotional strengths" (Walter, 2018, p. 6; Jones et al., 2018, p. 79).

Most studies (n = 16) also provided some information on attrition (Cargo et al., 2015). However, only seven studies provided an explanation of why students dropped out or missed part of the intervention, and only six studies reported information on attrition rates separately for the intervention and control groups and thus were able to analyze if attrition rates were uneven between the groups.

Just over half of the studies (n = 10) provided enough information to calculate reach. Five studies calculated reach, and four provided reasons why participants from the eligible population did not participate. The recruitment rates reported ranged from 45% to 100%. Very few of the Randomized controlled trial (RCT) studies in this review (n = 15) used The Consolidated Standards of Reporting Trials (CONSORT) flow diagram to depict rates of recruitment, attrition, and reach (20%, n = 3).

Dose delivered and dose received. The dose delivered was the most commonly reported implementation dimension. Nearly all (n = 18) studies reported all three aspects of the dose delivered: frequency, intensity, and duration. The remaining study reported only duration, making it difficult to determine the total writing time. In contrast to the reporting of the dose delivered, only 11 studies reported the dose received. In some cases, the dose of intervention received was quite different from the dose of intervention delivered. For example, one study found that although they intended their intervention dose to be eight writing sessions, the average dose received was six sessions, two-thirds of the dose delivered (Kliewer et al., 2011).

Fidelity. Only two studies in this review examined fidelity as a distinct domain of implementation. The terminology used varied, with some authors using the term fidelity and others using the term treatment reliability. In both studies, a single indicator of fidelity was used, and one study relied on a self-report measure by the interventionist.

Several studies did not formally assess fidelity but did provide contextual information suggestive of implementation difficulties. In one instance, the authors described the environment as "overcrowded, noisy, with poor air-conditioning" and they noted that students complained that "they had to sit on the floor" (Kalantari et al., 2012, pp. 143-144). In another case, the author described how "the absence of supervision set off an eruption of activity in which students

moved desks, socialized, and shouted out to each other across the room. Many students left for the day. The unpredictability of the students' behavior became a challenge for the researcher" (Curry, 2011, p. 58). These descriptions suggest low levels of fidelity, which were not formally assessed.

Participant and provider engagement. Eight studies included a statement regarding participant engagement. However, half of these studies provided only brief contextual statements (e.g., that the students were receptive, became engaged, or that there was good cooperation) as opposed to collecting more systematic information. Two studies assessed provider engagement.

Co-intervention. Few studies (n = 2) reported checks to ensure that the control and intervention groups did not have unequal exposure to interventions other than EW. Contamination. Just over half of studies (n = 11) assessed whether experimental participants completed the intervention, whether control participants unintentionally received the intervention, or both. Most studies assessed contamination by examining the content of the writing (e.g., use of emotional words, writing about the topic requested). Of the 11 studies that assessed contamination, six determined there may have been contamination. Four studies determined that some of the participants in the control group may have inadvertently received the intervention, as some participants assigned to neutral writing conditions wrote about emotional or meaningful topics (Reynolds et al., 2000). In addition, two studies found that some participants in the intervention group failed to receive the intervention, due to some participants who wrote about neutral topics or others who were considered noncompliant (Travagin et al., 2016; Reynolds et al., 2000).

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Discussion

Assessment of implementation is essential for building a robust and useful evidence base (Durlak, 2015; Feagans Gould et al., 2016). The present scoping review assessed the extent and nature of implementation reporting in the school-based EW literature, with the goal of identifying areas where more rigorous reporting is needed and of providing recommendations for future research.

Current State of Implementation Reporting and Implementation Reporting Needs

Within the EW literature, recruitment, attrition, dose delivered, and contamination were the most frequently reported implementation domains, while fidelity, provider engagement, participant engagement, and co-intervention were the least frequently reported. Very few studies within the school-based EW literature reported on the five domains of implementation suggested as the minimum requirements. Within each implementation domain, there were models of rigorous reporting and opportunities to improve reporting practices.

About half of the studies in this review made multiple adaptations to the traditional EW paradigm. Adaptations such as increasing the dose and providing participants with specific examples or questions as part of the writing instructions increased the effectiveness of EW (Frattaroli, 2006). However, modifying more than one aspect of EW per study makes it difficult to determine which intervention component contributes to its effectiveness, and for many studies in this review it remains unclear which intervention component or adaptation was responsible for the outcomes obtained (Sloan & Marx, 2018).

While participant recruitment was an area of rigour, school recruitment was under reported. Qualitative information suggests that the kinds of schools that agree to participate in EW research are eager for social-emotional programming and may consequently experience

fewer problems with implementation due to a motivation for the intervention to succeed. It is possible that these schools experience better outcomes than schools who are not as eager to engage in social-emotional interventions. Assessing how schools are recruited can inform whether conclusions about EW effectiveness can be extended to all school populations.

Reporting on attrition was another area of strength among the studies in this review. The frequent reporting of attrition has allowed researchers to determine that studies with lower attrition rates produced larger effects (Travagin et al., 2015). However, it remains unclear whether effects were larger in studies with low attrition rates because participants in those studies received a larger dose of the intervention or because adolescents who found the intervention unhelpful, unpleasant, or harmful left the research study (Travagin et al., 2015). Few of the RCTs in this review that did not use a CONSORT flow diagram reported information on all three aspects of recruitment. This is consistent with research by Turner, Shamseer, Altman, Schulz, and Moher (2012) who found that when researchers followed the CONSORT statement when reporting the results of an RCT they produced more complete reports. EW researchers could improve the reporting of reach by following the CONSORT statement. Mendelson et al. caution that certain groups of participants may be more likely to consent than students living in vulnerable contexts whose parents are more difficult to reach to obtain consent for participation in social-emotional interventions (Mendelson et al., 2013). Reporting the reasons why participants are not reached can inform whether certain subgroups of participants are systematically absent from EW research.

While dose delivered was the most frequently reported implementation dimension in this review, only 57% of studies also assessed dose received. In a school setting, where students may be absent from school during the course of an intervention, it cannot be assumed that the dose

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delivered and the dose received will be equivalent. Meta-analyses of the effects of EW have found that dosage moderated the effects of the writing (Frattaroli, 2006; Travagin et al., 2015), suggesting that poor outcomes may be due to receiving an insufficient dose.

One area where rigorous reporting could be improved is the assessment of fidelity. When researchers monitor fidelity, in combination with delivering an adequate dose, and ensuring the control group does not experience contamination, effect sizes tend to be two to three times larger than when these aspects of implementation are not assessed (Durlak & DuPre, 2008). To improve implementation reporting, Dusenbury et al. (2003) recommend that researchers use observations, multiple measures that have demonstrated good reliability and validity, and base their estimates on multiple sessions. Another consideration is that in cases where the intervention is implemented by people other than research staff, such as teachers or other school professionals, levels of fidelity may be lower (Feagans Gould et al., 2016). If EW interventions are to be scaled up in the future, it would be helpful to understand whether they can easily be implemented by persons other than the developers.

Assessing provider engagement will become increasingly important if EW is implemented by teachers or other school staff as a growing body of research has identified that implementor characteristics are related to intervention fidelity (Carlson et al., 2017; Forman & Barakat, 2011). Similarly, participant engagement may also be related to intervention outcomes (Curry, 2011). In some cases, participants are not engaged in EW, which is potentially problematic because they may not be taking part in the intervention in a consequential way (Mendelson et al., 2013). For example, in one study, participants who rated the intervention as not meaningful did not experience any significant changes in their ratings of somatic symptoms over time, whereas participants who rated the intervention as extremely meaningful did (Curry,

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2011). Future evaluations of EW interventions would benefit from assessing participant and

provider engagement to determine the impact on study outcomes.

Co-intervention is another area where implementation reporting can be bolstered. It is

common for schools to offer multiple programs and services, and consequently, it is worthwhile

to monitor what interventions the control group may be receiving (Durlak, 2014). By contrast,

contamination was one of the most frequently reported implementation domains. This review

found that participants do not always follow writing directions, even when given explicit

instructions. Half of the studies that assessed contamination found some evidence that not all

participants followed the writing directions. Accordingly, it is useful for researchers to continue

to assess contamination to determine if participants received the intervention as intended.

Strengths and Limitations

A strength of this scoping review was the use of a systematic search method that

provided a clear picture of the current state of reporting with regard to implementation and

identified areas where more rigorous reporting was needed. Limitations include the restriction to

peer-reviewed English language journal articles and theses and dissertations from the last five

years, which may have excluded relevant research in other languages and grey literature. Despite

these limitations, this scoping review provides a comprehensive assessment of the information

readily available to researchers and practitioners seeking to learn more about the effectiveness of

EW interventions and how to implement them in school settings.

Implications and Future Research Directions

First, rigour of implementation reporting could be increased by reporting the minimum

recommended domains: recruitment, reach, dose delivered, dose received, and fidelity (Cargo et

al., 2015; Saunders et al., 2005; Steckler & Linnan, 2002). If space constraints are a concern,

implementation information can be reported as supplemental materials or in an accompanying manuscript focusing on the process evaluation rather than the outcomes evaluation (Feagans Gould et al., 2016). Consistent reporting of minimum implementation domains will allow researchers to answer questions related to the optimal dose of EW as well as how feasible it is to implement EW within a school setting with high levels of fidelity.

Second, researchers could examine the potential impact of provider engagement, participant engagement, and fidelity on EW outcomes, as these domains have been examined regularly as potential moderators within EW meta-analyses. These areas are worthy of future study as participant engagement, provider engagement, and fidelity have all been demonstrated to moderate intervention outcomes (Durlak & DuPre, 2008; Garvey et al., 2006).

Third, rigorous reporting of implementation can be used to inform what specific characteristics make EW successful (Cargo et al., 2015; Durlak & DuPre, 2008; Dusenbury et al., 2003; Garvey et al., 2006; Steckler & Linnan, 2002). Many researchers have adapted EW by altering the writing instructions or adding components such as psychoeducation. When altering EW interventions, it is important to concurrently assess implementation so that the results obtained, positive or negative, can be interpreted in context. Ultimately, rigorous reporting of implementation will support the development of a robust evidence base regarding the utility and feasibility of EW, to inform the implementation of social-emotional interventions.

Conclusion

Overall, the results of this scoping review suggest that key implementation domains such as dose received and fidelity have been overlooked in the EW literature. This is problematic as without assessing implementation it is difficult to make definitive conclusions regarding the effectiveness and feasibility of implementing EW interventions as effect sizes may be over or

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underestimated (Chen, 2005; Durlak & DuPre, 2008; Dusenbury et al., 2003). This scoping

review comprehensively summarizes the current state of implementation reporting and identifies

ways in which more rigorous reporting can be used to strengthen the evidence base for EW

interventions.

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Table 1

Characteristics and Adaptations of Included Studies

Authors (Year)	Population and Risk Status	Outcomes	Adaptation(s)
Bray et al. (2006)	Chronic Asthma	Physical health; mental health; quality of life	Writing instructions
Curry (2012)	Shared Traumatic Events	Mental health	Writing instructions
Facchin et al. (2014)	Transition to Highschool	Self-concept	Dose
Giannotta et al. (2009)	Not at Risk	Peer victimization; mental health; coping strategies	Dose
Hines et al. (2016)	Failed Standardized Math Test	General/mathematics anxiety; somatic symptoms	Writing instructions
Horn et al. (2011)	Not at Risk	Grades; school absence; negative affect	Dose; Psychoeducation
Jones et al. (2018)	Not at Risk	Goal persistence; grades	Writing instructions; Dose
Kalantari et al. (2012)	War Bereaved	Traumatic grief	Writing instructions
Kliewer et al. (2011)	At-Risk Urban Adolescents	Adjustment; aggressive behavior; emotional lability	Writing instructions; Dose; "Enhanced" writing
Margola et al. (2010)	Shared Trauma	Adjustment trajectories	Writing instructions
Muris et al. (2002a)	Anxiety Disorders	Anxiety	Writing instructions; Dose; Discussion time; Homework assignments
Muris et al. (2002b)	Generalized Anxiety Disorder	Anxiety	Writing instructions; Dose; Discussion time
Ramirez & Beilock (2011)	Not at Risk	Test anxiety; exam performance	Writing instructions; Dose
Reynolds et al. (2000)	Not at Risk	Mental health; strengths and difficulties	Discussion time
Shen et al. (2018)	Severe Test Anxiety	Test anxiety	Writing instructions; Dose
Soliday et al. (2004)	Not at Risk	Mental health; medical visits	None
Travagin et al. (2016)	Not at Risk	Affect; social involvement; peer problems	Writing instructions; Dose
Unterhitzenberger & Rosner (2014)	Orphaned	Prolonged grief; depressive symptoms	Writing instructions; Dose
Walter (2018)	High Math Anxiety	Math achievement; math anxiety	Writing instructions; Dose; Group brainstorming

Table 2

Implementation Domains Reported in Included Studies

Authors (Year)	RC	AT	R	DD	DR	FD	Par. EG	Prov. EG	Co-Int.	CT
Bray et al. (2005)	✓	✓		✓	✓	✓	✓			✓
Curry (2012)	✓	✓	✓	✓			✓			
Facchin et al. (2014)		✓		✓	✓					✓
Giannotta et al. (2009)	✓	✓	✓	✓	✓					✓
Hines et al. (2016)	✓			✓						✓
Horn et al. (2011)	✓	✓		✓	✓		✓			
Jones et al. (2018)		✓	✓	✓						✓
Kalantari et al. (2012)	✓			✓	✓		✓			
Kliewer et al. (2011)	✓	✓	✓	✓	✓	✓		✓		✓
Margola et al. (2010)	✓	✓	✓	✓	✓				✓	
Muris et al. (2002a)	✓	✓	✓	✓	✓					
Muris et al. (2002b)	✓	✓	✓	✓			✓	✓		
Ramirez & Beilock (2011)				✓						
Reynolds et al. (2000)	✓	✓		✓			✓		✓	✓
Shen et al. (2018)	✓	✓	✓	✓	✓		✓			✓
Soliday et al. (2004)	✓	✓	✓	✓			✓		✓	✓
Travagin et al. (2016)	✓	✓	✓	✓	✓					✓
Unterhitzenberger & Rosner (2014)	✓	✓	✓	✓	✓					✓
Walter (2018)	✓	✓	✓	✓						

Note. RC = Recruitment; AT = Attrition; R = Reach; DD = Dose Delivered; DR = Dose Received; FD = Fidelity; Par. EG = Participant Engagement;

Prov. EG = Provider Engagement; Co-Int. = Co-Intervention; CT = Contamination.

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Figure 1

Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Diagram of the

Study Inclusion and Exclusion Process

Identification

Records identified from:
Databases (n = 367)
Reference list of identified
articles (n = 17)

Records removed *before screening*:
Duplicate records removed
(n = 50)
Records removed for other reasons
(n = 0)

Screening

Records screened
(n = 334)

Records excluded
(n = 281)

Reports sought for retrieval
(n = 53)

Reports not retrieved
(n = 0)

Reports assessed for eligibility
(n = 53)

Reports excluded: (n = 34)
Inappropriate phenomenon (n = 23)
Inappropriate population (n = 6)
Inappropriate study design (n = 5)

Included

Studies included in review
(n = 19)
Reports of included studies
(n = 19)

Bridging Text

Youth mental health problems have worsened during the COVID-19 pandemic with rates of internalizing problems amongst youth ages 7-15 increasing from 31.7% in 2018 to 56.7% in 2020. To address mental health problems that have worsened during the COVID-19 pandemic, there is a need for effective interventions that can be widely implemented in the community (Panchal et al., 2021; Silva et al., 2020; WHO, 2020). Emotion-regulation is a worthwhile target outcome given that these skills underlie mental health problems such as depression, anxiety, posttraumatic stress disorder, eating disorders, substance abuse, and somatoform disorders (Berking & Whitley, 2014; Compas et al., 2017; Rapee et al., 2019). Expressive writing is a simple and brief intervention that has been found to promote emotion regulation and other positive mental health outcomes (i.e., problem behaviour, internalizing problems, personal adjustment, social adjustment, and comatic complaints) through writing about stressful or emotional topics (Cheung et al., 2019; Travagin et al., 2015).

The overarching goal of the present study is to better understand whether expressive writing interventions are effective in improving the emotion regulation skills of adolescents and how expressive writing interventions can be successfully implemented in clinic and community settings. However, as highlighted in Chen's (2014) conceptual framework for program theory, intervention variables and implementation variables (e.g., attrition and participant engagement) interact to produce the intervention outcome. As a result, there is a need to systematically consider how expressive writing interventions are being implemented to ascertain their effectiveness. Therefore, Study 1 reviewed how expressive writing interventions have been adapted and identified key implementation-related variables that have not been consistently considered within the expressive writing literature. Results revealed consistent gaps in

implementation reporting practices, specifically that the variables of participant engagement and fidelity have been examined in only two studies each within the expressive writing literature. It remains unclear how participant engagement and fidelity impact expressive writing outcomes. Equipped with an understanding of key implementation factors under-explored within the expressive writing literature, Study 2 sought to establish the effectiveness of expressive writing for the adolescent population. More specifically, Study 2 investigates adolescents' experiences of emotion regulation during writing, the impact of expressive writing on emotion regulation skills, and the impact of an expressive writing intervention on youths' mental health.

Chapter IV

Study 2

Expressive Writing Improves Adolescents' Emotion Regulation and Mental Health

Outcomes

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Abstract

The current study evaluated the impact of expressive writing on adolescents' emotion regulation skills and mental health using a mixed-methods approach. A randomized wait-list controlled mix-methods design was employed. Following the intervention, individual qualitative interviews were conducted to further understand the quantitative outcomes. In all, a sample of 41 adolescents experiencing symptoms of mental health problems participated in six sessions of group-based expressive writing in a non-profit youth community centre and a mental health clinic. Qualitative and quantitative results revealed that expressive writing significantly improved internalizing problems, social functioning, school-related functioning, and self-concept. Further, interview results revealed that expressive writing increases emotion awareness, emotion modification skills, positive affect, and social contact. Given that emotion regulation difficulties show transdiagnostic associations with social-emotional disorders, they are an important target for intervention. Novel intervention mechanisms are also discussed. Expressive writing shows promise as an effective means of providing mental health outreach in community and clinic settings to promote emotion regulation and adaptive coping for youth who are vulnerable to developing mental health problems and who are waiting to access mental health services.

Keywords: expressive writing, adolescence, mental health, emotion regulation

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Introduction

During adolescence, physiological and emotional development brings forth changes in self-esteem, mood, thinking, and behaviour (Eiland & Romeo, 2013; Guerra et al., 2012). While some changes are positive, such as improved reasoning capacity, greater self-regulation, and self-awareness, adolescence can also be characterized by stress, intense and negative emotions, negative thinking, and a shift towards maladaptive coping (Cracco et al., 2017; Guerra et al., 2012; Larson et al., 1980). It is estimated that about 25-31% of adolescents develop a mental health problem such as anxiety or depression (Silva et al., 2020). Yet, only around 40-50 percent of adolescents with mental health disorders receive mental health treatment, likely due to limited availability of services and perceived stigma (Anderson et al., 2017; Cheung & Dewa, 2007; Georgiades et al., 2019).

A growing body of research suggests that youth mental health has worsened in the context of the COVID-19 pandemic, likely due to increased stressors, isolation, and lack of physical activity (Minihan et al., 2022; Mitra et al., 2021; Statistics Canada, 2020). Among young people ages 7-16, there has been a significant increase in rates of anxiety and depression as compared to pre-pandemic levels (Panchal et al., 2021). Rates of depression range from 2.2-63.8% and is especially common in older adolescents (Panchal et al., 2021).

During the stay-at-home orders resulting from the COVID-19 pandemic, adolescents reported a significant decline in peer socialization ($\beta = 1.049$; Rodman et al., 2022). This reduction in peer interaction emerged as a distinct and prominent challenge for adolescents when they were asked about their experience during the pandemic (Rogers et al., 2021). Individuals ages 7-15 reported missing their friends and feeling isolated. In addition, they reported it was

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challenging to be restricted to their homes while coping with emotions such as COVID-19-related worry, boredom, distress, and irritability (Panchal et al., 2021; Rogers et al., 2021).

Adolescents' perceived level of isolation during the initial stay-at-home period was significantly associated with mental health problems at that time (β = 0.234) and with mental health problems six months later (β = 0.241; Rodman et al., 2022). Lower levels of perceived peer support were associated with more internalizing symptoms ($\beta = -0.234$; Rodman et al., 2022). Mitra et al. (2021) found that having a friend to share feelings with significantly reduced the odds of reporting low subjective well-being (OR = 0.65, CI = 0.45-0.94). The quality of relationships with parents was also found to mediate adolescent mental health such that a higher relationship quality with parents over the course of the COVID-19 pandemic was associated with fewer adolescent symptoms of depression, stress, and emotion dysregulation (Afriat et al., 2023). Indeed, in a qualitative study, some adolescents reported more time with family as a positive outcome stemming from the COVID-19 pandemic (Rogers et al., 2021).

Expressive Writing

The WHO (2020) has acknowledged that while more research on effective interventions for youth is needed, it is not only worthwhile but strongly recommended to intervene with youth that have emotional problems, given that the potential benefits (i.e., prevention of mental illness) have been judged to outweigh undesirable effects (i.e., financial, psychological, or familial burdens of participation or adverse events). There is a need for mental health interventions that strike a balance between effectiveness, feasible implementation without undue material and personnel costs, and appeal and engagement for youth (Das et al., 2016; Patton & Temmerman, 2016; WHO, 2020).

Originally developed by Pennebaker and Beall (1986), expressive writing is a time-limited psychological intervention (Pennebaker & Beall, 1986). Traditionally, expressive writing involves writing for 15-30 minutes a day for several consecutive days about one's deepest thoughts and feelings about a stressful or emotional topic, typically with a focus on letting go and expressing emotions (Pennebaker & Beall, 1986). Expressive writing allows youth to express their thoughts and feelings in a safe space, without judgement from others (Juth et al., 2021; Pennebaker & Beall, 1986; Slavin-Spenny et al., 2011; van der Kolk, 2014). Expressing oneself through writing may be more comfortable for some individuals than speaking because participants may anticipate experiencing less stigma (WHO, 2020). Expressive writing is a brief therapy and it requires few materials, making it ideal for resource-limited settings (Winslett, 2005). Expressive writing can be easily adapted to meet the needs of writers, for example, it can be offered in a group format, psychoeducation or peer discussion may be added, or the writing instructions can be adapted to meet the needs of the participants (Horn et al., 2010; Kliewer et al., 2011; Sloan & Marx, 2018).

Expressive writing for adolescents has been found to improve a variety of mental health-related outcomes such as internalizing problems (Frattaroli, 2006; Reinhold et al., 2018; Travagin et al., 2015), externalizing problems (Travagin et al., 2015), school-related outcomes (Frattaroli, 2006; Travagin et al., 2015), and social functioning, positive functioning, and general day-to-day functioning (Frattaroli, 2006). Notably, effect sizes have varied (from -0.291 to 0.592), in part due to the heterogeneity of studies (e.g., differences in outcomes examined, participant risk status, length of intervention).

A meta-analysis by Travagin et al. (2015) found in an adolescent population, a small yet significant mean overall effect size for social adjustment ($g = 0.145$). However, overall, results have been mixed regarding the effects of expressive writing on social-related outcomes, with

mean g effect sizes ranging from 0.131 to 0.246 (Travagin et al., 2015). Significant and positive effects have been found in an increased willingness to self-disclose ($d = 0.58$; Winslett, 2005), improved social behaviours ($\eta^2 = 0.26$; Boniel-Nissim & Barak, 2013), and increased contact with peers (Travagin et al., 2016). However, in a study of expressive writing during the transition to high school, others have found the opposite, that is, a significant main effect of time such that there was a decline in social relationships and family relationships for all participants, regardless of condition, over the four months following the writing sessions (Facchin et al., 2014). It may be that participants experienced disruptions to their relationships related to increased social stresses and changes to existing social dynamics, which can occur during the transition to high school (Rapee et al., 2019).

There are likely many mechanisms at work during expressive writing interventions, which may have a combined effect on intervention outcomes (Juth et al., 2021; Sloan, & Marx, 2004; Smyth & Pennebaker, 2008). When writing, individuals may express, release, attend to, and become habituated to emotions, thereby reducing intensity through emotional release and repeated exposure (Foa et al., 1986; Lepore, Greenberg, Bruno, & Smyth, 2002; Travagin et al., 2015). Expressive writers may also process thoughts by labelling emotions, making meaning from their experiences, reframing their situations, and engaging in problem-solving (Lepore, Greenberg, Bruno, & Smyth, 2002; Travagin et al., 2015).

Social integration and engagement have been proposed as mechanisms for how expressive writing may convey a benefit to mental health. However, little attention has been given to social integration as a mechanism nor to social outcomes of expressive writing interventions (Travagin et al., 2015). It has been hypothesized that individuals may gain the confidence to disclose their experiences verbally by first writing about them, which in turn may

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lead to increased emotional disclosure after an expressive writing intervention (Frattaroli, 2006). If further disclosure takes place after the intervention, it may amplify the effects of the intervention as writers may become more disinhibited and may also become further habituated to the emotions associated with their experiences, thereby reducing the intensity of their emotions through repeated exposure. Writers may benefit from interpersonal support from those they disclose to (Bootzin, 1997; Frattaroli, 2006). Further empirical research is warranted to understand whether the hypothesized social-integration related mechanisms are taking place.

Gross' (1998) process-oriented model of emotion regulation is a useful framework to conceptualize and integrate the processes occurring in expressive writing. During expressive writing and individuals may develop or practice the skills and strategies needed for emotion regulation such as identifying emotions and modifying them in adaptive ways or by accepting them (Cook et al., 2005; Greenberg, 2004). There is a growing body of evidence linking emotion regulation skills and mental health (Aldao et al., 2016; Berking & Whitley, 2014; Cludius et al., 2020).

Notably, despite the close link between emotion regulation and mental health, emotion regulation has rarely been examined as an expressive writing intervention outcome. Results among the healthy adult population have been mixed, with some finding improvements in adaptive emotion regulation and others finding no differences. Among populations who have experienced distress, expressive writing has been found to be promising in improving emotion regulation skills and practices (Cheung et al., 2019; Harvey et al., 2018; Wisco et al., 2013; Wong & Mak, 2016). Among adolescent populations evidence that youth engage in cognitive reappraisal when writing expressively is limited to two studies, however, other emotion

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regulation skills and strategies (e.g., emotion awareness, effective self-support) have not been

examined (Giannotta et al., 2009; Margola et al., 2010).

Rationale

Adolescent's mental health needs have increased in the context of the COVID-19

pandemic (Rosen et al., 2021). Expressive writing shows promise as an intervention to promote

the mental health of adolescents and is worthwhile for further study given its' potential to engage

youth and effectively provide mental health promotion with few material and personnel

resources (Sloan & Marx, 2018). The WHO (2020) has highlighted the need to better understand

the resource needs of mental health promotion interventions to consider how they may be

implemented in low resource settings. Research on adult populations is beginning to demonstrate

that expressive writing improves emotion regulation skills and practices (Cheung et al., 2019;

Harvey et al., 2018; Wisco et al., 2013). Further, in a qualitative study of adolescents, Groleau et

al. (2023) found that expressive writing participants labelled, reflected on, and learned to manage

their emotions, however, no quantitative outcome measures were used. There is thus a need to

quantitatively examine the outcome of emotion regulation in adolescents. Well-developed

emotion regulation skills are intimately linked with good mental health and difficulties with

emotion regulation underlie many common mental health problems (e.g., depression, anxiety,

posttraumatic stress disorder, eating disorders, substance-related disorders, borderline personality

disorder, and somatoform disorders (Berking & Whitley, 2014). Given that emotion regulation

skills are still developing in adolescence, there is a need to better understand whether expressive

writing is effective in promoting adolescent mental health and emotion regulation skills. Further,

understanding participant experiences of emotion regulation during and following an expressive

writing intervention may provide insight into what emotion regulation strategies adolescents use when writing, which in turn may provide clarity regarding the intervention mechanisms at work.

Research Objectives

The overarching goals of this study were to evaluate expressive writing's impact on adolescents' emotion regulation skills and mental health. A clear understanding of emotion regulation as a proximal outcome of expressive writing can shed light on the mechanisms behind expressive writing as well as how it may impact different areas of functioning. The following research questions guide this enquiry: (a) What are adolescents' experiences of emotion regulation during the writing intervention? (b) What is the impact of an expressive writing intervention on emotion regulation skills? (c) What is the impact of an expressive writing intervention on youth's mental health? Based on previous research on expressive writing outcomes related to emotion regulation and mental health, it is hypothesized that the expressive writing intervention will improve adolescent's emotion regulation skills and practices, and improve their social, emotional, and behavioural functioning (Facchin et al., 2014; Groleau et al., 2023; Kliewer et al., 2011; Ramirez & Beilock, 2011; Robertson et al., 2021; Shen et al., 2018; Wong & Mak, 2016).

Method

The present study used a mixed-methods approach. A randomized wait-list controlled design was employed to maximize the number of participants taking part in the writing intervention. In addition, a wait-list design was chosen rather than assignment to a non-emotional writing condition, as previous researchers have observed that participants sometimes write about emotional or meaningful topics, even when asked to write about factual or trivial topics, thereby contaminating the study findings (Baikie & Wilhelm, 2005; Robertson et al., 2021; Travagin et

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al., 2015). Moreover, this design made the intervention accessible to all participants and was considered more ethical while also facilitating recruitment of participants. Ethics approval was obtained from McGill University research ethics board (See Appendix G).

Expressive Writing Intervention Procedure

The present study employed an adapted version of Pennebaker and Beall's (1986) original paradigm that was modified to meet the needs of adolescents. Each writing session began with the facilitator leading a brief discussion (10 to 15 minutes) and a brainstorming session to prepare the adolescents for writing. The discussion portion consisted of a warm-up activity and an introduction to the day's theme. The warm-up comprised a brief get-to-know-you or check-in activity to facilitate a positive group environment and increase participation and engagement in the session (Brown, 2018). The discussion then covered the following themes: why it may be helpful to write, the importance of expressing thoughts and emotions, the importance of labelling emotions, reappraising/making meaning from upsetting experiences, and a conclusion and celebration. Themes intentionally overlapped and repeated from session to session to reinforce the topics and allow participants to receive the content if they missed a session.

Participants had 10 to 15 minutes to write in their provided journals about a challenging experience that was meaningful for them (e.g., peer conflict or moving to a new school). Participants were encouraged to choose a topic they felt comfortable writing about, i.e., one that was not too upsetting such as a traumatic experience, abuse, or violence. Adams (2013) and Horn et al. (2011) have observed that most participants can choose a meaningful yet not too overwhelming topic. Suggested topics based on current events and common adolescent concerns were provided for participants who had difficulty identifying a topic independently (e.g.,

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interpersonal relationships with family or peers, issues concerning school and teachers; Fivush et al., 2007). Following the discussion portion, the facilitator read the writing instructions. The writing instructions were as follows:

> Please write about your deepest thoughts and feelings about a recent experience that made you feel strongly. For example, something in your life that was difficult or challenging, or that bothered you, and that might have influenced your mood. It might have to do with different parts of your life such as school, home, or friends. The important thing is that you let go and get in contact with your deepest emotions and reflections. Do not worry about grammar or spelling. Try to write as much as possible and try to write for the whole time.

Description of the Writing Sessions. Discussion themes for each session covered the following themes: why it may be helpful to write, the importance of expressing thoughts and emotions, the importance of labeling emotions, and reappraising/making meaning from upsetting experiences. Participants were encouraged to incorporate discussion themes into the day's writing. The facilitator circulated to answer questions or provide guidance on what to write if needed.

Session 1: Introduction. The first session introduced the topic of expressive writing to the youth. The discussion centered around the purpose of the writing intervention and choosing a topic to write about. To provide a concrete example, participants were given the example of Anne Frank, who wrote in a diary during World War II. Anne Frank used writing to help cope with difficult or challenging experiences. The facilitator explained that over the course of the sessions, participants would be writing about a difficult or challenging experience. Participants were provided with 2-3 examples of writings completed by past expressive writing participants

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(with their permission). Participants were asked to reflect on and discuss why it may be helpful

to write about their problems and what topics would be appropriate to write about.

Session 2: Introduction and Emotional Expression. The second session began with a

review of the purpose of the writing intervention and choosing a topic to write about. Next, the

topic of emotional expression was introduced. Participants were asked to discuss why it might be

helpful to express thoughts and feelings rather than hold them in. Examples of past writings were

presented. Participants were encouraged to "let go" and express themselves when writing. If

participants had a difficult time getting started, writing prompts were provided (See Appendix

C).

Session 3: Emotional Expression and Affect Labeling. The third session began with a

review of the topic of emotional expression. Next, the topic of affect labeling was introduced.

Participants were asked to discuss why it might be helpful to put a label on emotions.

Participants were encouraged to give specific labels to their emotions when writing. Examples of

past writing using affect labeling were presented. The facilitator was available to help suggest

emotion words if participants requested assistance.

Session 4: Affect Labeling and Cognitive Reappraisal. The fourth session began with a

review of the topic of affect labelling. Next, the topic of cognitive reappraisal was introduced.

Participants were introduced to the idea of reframing or reinterpreting their narrative.

Participants were asked to discuss examples of how they found a "silver lining" or were able to

change the way they thought about something that bothered them. Examples of past writing

where cognitive reappraisal was used were provided. The facilitator was available to provide

cognitive reappraisal prompts to any youth who requested assistance. The prompts included

different ways that might assist youth in reframing or reinterpreting an upsetting experience:

what was the silver lining, was there any positive that came out of the experience, what did you learn about yourself from going through this experience, what would you tell a friend who was going through the same thing, and how did you cope/deal with the experience, what has anxiety/stress/anger/pain taught you about yourself, what would you tell your past self when you were going through that experience, write a list of 10 things you want to remember during difficult times, and how did you cope/deal with the experience?

Session 5: Cognitive Reappraisal and Conclusion. The fifth session began with a review of the topic of cognitive reappraisal. Next, the facilitator addressed the upcoming conclusion of the program and asked participants to begin reflecting on the sessions as a whole, and how they can tie together all the information. In their writing, participants were asked to try to incorporate as many of the topics as they liked into their narratives. Participants were encouraged to start thinking about how they would conclude their narrative in a meaningful and positive way. The facilitator remained available to provide writing prompts.

Session 6: Conclusion. The final session continued to focus on the topic of conclusion. Participants were again asked to reflect on what they would take away from the previous sessions. As in session 5, participants were encouraged to conclude their narrative in a meaningful and positive way, while incorporating as many of the topics as they like into their narratives. The facilitator remained available to provide writing prompts. Participants had the opportunity to share their writing with the group if they chose to do so.

Participants who asked for assistance or who were observed to have difficulty writing were provided with options from the menu of expressive writing options ranging in the amount of structure provided outlined by Adams (2013), see Appendix B. Options from the menu included fill-in-the-blank sentences, sentence starters, the option to make a list or word-

association map, and the option to write their narrative in the form of a comic strip. Participants who did not wish to complete all of the available activities were permitted to leave at any time or remain in the room without participating, as long as they did not disrupt the group.

Recruitment

To address the unmet mental health needs of adolescents, two sites, a non-profit youth community centre and a mental health clinic, were selected to reach youth who may be experiencing symptoms of mental health problems. The sites were selected in line with recommendations outlining the need for interventions delivered in a variety of community settings and that are incorporated into existing programs and services for adolescents (CAMH, 2014; WHO, 2020).

Clinic site. The clinic site was a psychology clinic near Toronto, Ontario specializing in psychological services and both therapeutic and recreational programs for children and adolescents including both individual and group programs. All clients who had signed up to receive email marketing communication from the psychology clinic received a flyer with information about the study and an invitation to contact the research coordinator to express their interest in participation. Paper flyers were also posted at the clinic and shared on the clinic website and social media channels. All sessions took place in-person, with the exception of one cohort of participants who completed the sessions virtually due to COVID-19 related precautions.

Camp site. The camp site was a summer youth program offered by a non-profit community centre in Montreal, QC. The centre provides outreach to youth with the goal of offering education, prevention, and leadership opportunities for youth living in vulnerable contexts (i.e., due to socioeconomic disadvantage, harmful peer influences, and family factors).

All campers participated in the writing activity as part of the camp program. Before the start of camp, all participants were sent information and consent forms about the study and were invited to participate. Consenting campers were given time to complete the questionnaires before starting the writing activity. Campers who did not consent to the study still participated in the writing activity with their camp group, however, no identifying information, questionnaire results, or journal entry data was retained. All sessions took place in-person.

Consent and assent process. Interested youth aged 14 and over were invited to participate and complete the consent forms. For children under the age of 14, the youth's parents or legal guardians were asked to sign a consent form regarding their child's participation in the research study, and the child was asked to complete an assent form. The assent and consent forms informed the youth and their parents or guardians that their participation was voluntary and that they could stop participating in the writing activity or the research activities at any time. The youth were informed that non-participation would not adversely impact the services they receive from clinic staff nor their camp program participation, respectively. Parents, legal guardians, and youth who wished to learn more about the study before signing the consent/assent forms were invited to contact a research team member who provided them with further information. At both sites, the youth were offered $10 gift cards to Tim Hortons for participating and received a new journal to take home. Any youth who experienced distress during the study were referred for support.

Screening and Assignment. Youth were screened with the BASC-3 to determine whether they were experiencing at least one area of social-emotional difficulty falling within the *At-Risk* or *Clinically Significant* range according to the BASC-3 tool. Youth who were currently receiving mental health services from the clinic were not eligible to participate. Consenting

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participants who met eligibility requirements were randomly assigned to the intervention or waitlist control groups and subsequently placed in the next available writing group. Participants receiving the writing intervention engaged in six sessions of expressive writing facilitated by research team members (graduate students in a psychology-related field). Outcome measures were collected at baseline for the control group, pre-intervention, post-intervention, and at six weeks follow-up (see Appendix A).

Participants

The sample size was based on an *a priori* power analysis using the G*Power software (Faul et al., 2007). Based on research by Grant, Salsman, and Berking (2018) who examined change in emotion regulation skills in a clinical sample, an effect size of 0.76 was determined. With α set at 0.05, it was determined that including a sample of 37 participants would give us a minimum of 80% power to detect an intervention effect. Consequently, the research team sought to recruit 18 participants per group (waitlist control, writing group).

Measures

Demographic information. Participants completed a brief questionnaire to collect demographic information regarding their age, sex, place of birth, and language(s) spoken at home. Participants were also asked whether they currently keep or have previously kept a journal or diary.

Mental health. The Behavioral Assessment Scale for Children – Third Edition Self Report of Personality - Adolescent (BASC-3 SRP-A) assessed adolescents' mental health.

The Behavioral Assessment Scale for Children – Third Edition Self Report of Personality - Adolescent (BASC-3 SRP-A). The BASC-3 SRP examines thoughts, feelings, attitudes, and internal reactions to people and events for adolescents aged 12 to 21 (Altmann et

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al., 2018). This questionnaire takes 20-30 minutes to complete and assesses Emotional

Symptoms Inattention/Hyperactivity, Internalizing Problems, Personal Adjustment, and School

Problems. SRP items have one of two response formats: T for *True* or F for *False*, and N for

Never, S for *Sometimes*, O for *Often*, or A for *Almost always*. The BASC-3 scales and

composites have high internal consistency and test-retest reliability. Coefficient alpha

reliabilities ranged from .82 to .94 for the adolescent self-report form; test-retest reliability

ranged from .76-.89. In addition, "the BASC-3 Manual demonstrates validity evidence for the

proposed applications of the BASC-3 scales that is extensive and covers both theoretical and

actuarial bases" (Altmann et al., 2018).

     Emotion Regulation. Adolescents' emotion regulation skills and practices were assessed

using the Emotion Regulation Questionnaire and the Emotion Regulation Skills Questionnaire.

     The Emotion Regulation Questionnaire (ERQ). The ERQ is a 10-item scale designed to

assess individual differences in the habitual use of two emotion regulation strategies: cognitive

reappraisal and expressive suppression (Gross & John, 2003). Respondents answer each item on

a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Both the

Cognitive Reappraisal and the *Emotional Suppression* scales demonstrate good internal

consistency, with alpha reliability coefficients of 0.79 and 0.73 respectively. Test-retest

reliability ranged from 0.69 for both scales, indicating that the questionnaire was sensitive to

change over time. The ERQ demonstrates appropriate convergent and divergent validity (Gross

& John, 2003).

     Emotion Regulation Skills Questionnaire (ERSQ). The ERSQ is a 27-item

questionnaire based on the emotion regulation skills defined by the *Adaptive Coping with*

Emotions model (Grant et al., 2018). Items are rated on a 5-point Likert scale and derive nine

subscales: *awareness, sensations, clarity, understanding, modification, acceptance, tolerance, readiness to confront*, and *self-support*. The ERSQ has a high internal consistency ($\alpha = 0.96$) and all scales were moderate to strongly intercorrelated with one another ranging from ($r = 0.47 - 0.87$). The test-retest reliability for all scales over a mean period of three weeks ranged from 0.30 -0.60 indicating the ERSQ demonstrates some sensitivity to change. In terms of validity, the ERSQ total score was positively correlated with the ERQ reappraisal scale (0.36) and negatively correlated with the ERQ suppression scale (-0.32).

Journals. Following the writing intervention participants were invited to hand in their de-identified journals so the team could analyze their writing for any ulterior research project. If requested, youth were given a black Sharpie marker to redact any information they did not want to share before turning in their journal.

Interviews. At follow-up, all participants were invited to complete an interview about their experience lasting approximately 20 minutes each. A research team member individually interviewed each participant over the phone. As part of the informed consent process, it was confirmed that each participant completed the interview in a private location where they felt comfortable talking (e.g., their bedroom). The participants were informed that their interviews were to be audio recorded for research purposes and that the interviews were to better understand their personal experience of the expressive writing activity. The interview schedule was divided into three main sections: (a) Meaning and Experience of Expressive Writing, (b) Understanding Emotion Regulation Outcomes, and (c) Understanding Mental Health Outcomes (see Appendix E for the detailed Interview Schedule). The first section of the interview was developed by Guzzo and Groleau (2018). General questions (section 1) were asked to all interviewees. Additional questions (selected questions from section 2) were asked based on questionnaire

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results. For any questionnaire scales where a clinically significant change had taken place, a corresponding interview question was asked. In all, 23 participants completed an interview.

Program Fidelity. Efforts to ascertain intervention fidelity were employed throughout program implementation by examining critical dimensions of implementation outlined by Cargo et al., (2018). The dose received was assessed by attendance at each session, word count written at each session, and emotional content of writing at each session. The emotional content was rated by two reviewers and discussed until a consensus was reached in the event of a disagreement.

Adherence to the intervention protocol (fidelity) was assessed through observations. One to two research team members (including research coordinators, assistants, or graduate students involved in the study) observed the sessions to monitor the facilitator's adherence to the study protocol. Two observers rated the first three sessions and achieved Kappa values of 0.86, 0.86, and 0.90 respectively, indicating almost perfect agreement (Landis & Koch, 1977). Any discrepancies were discussed until a consensus was reached. Once acceptable inter-rater agreement was established, one observer rated the remaining sessions (O'Connor & Joffe, 2020). Observers were provided with a standardized checklist to record whether the protocol was adhered to and whether the facilitator engaged in behaviour that would support engagement in the writing intervention (see Appendix D). The checklist was developed based on best practices for implementing expressive writing with adolescents outlined by Adams (2013). Reasons for noncompletion of the protocol were noted on the observation form.

Observers were asked to rate participant engagement at each session on a scale of 1-3. In addition, participants were asked about their enjoyment and perceived usefulness of the intervention as part of the follow-up questionnaire. Contamination (whether the control group

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inadvertently received the intervention) was assessed by asking participants in the control group whether they keep or have kept a journal/diary.

Analysis

The plan for analysis is presented in the following manner: (a) Statistical analysis for the quantitative component, (b) Thematic analysis for the qualitative component, and (c) A process evaluation of the intervention.

Statistical Analysis

Due to attrition from the waitlist control group during the waiting period and implementation difficulties at the camp site, in the context of the COVID-19 global pandemic, limited data was available at the first time point for the waitlist control group ($n = 4$), and a revised plan of analysis was required to examine intervention outcomes. Paired-sample t-tests were conducted to examine changes in youth who participated in the expressive writing intervention to compare their pre-intervention results to their post-intervention results as well as their pre-intervention results to their results at follow-up.

Using an intent-to-treat (ITT) approach, all participants who were randomized were included in the statistical analysis and analyzed according to the group they were originally assigned, regardless of what treatment (if any) they received. The ITT approach avoids bias "by accepting that noncompliance and protocol deviations are likely to occur in actual clinical practice" and therefore is considered more accurately reflective of real-world clinical scenarios, ensuring the results will be more generalizable to community settings (Gupta, 2011, p. 110). For standardized questionnaires (i.e., the BASC-3) clinically meaningful changes were reported where participants were observed to have moved, on average, between clinical categories (i.e., from a category of *at risk* to a category of *average*).

Achieved effect sizes were prioritized in addition to conventional p values in examining the impact of the intervention. Consequently, alpha values of 0.1 and under were considered in addition to those of 0.05 and under when determining statistical significance, providing that medium to large effect sizes were found (Cascio & Zedek, 1983; Sullivan & Feinn, 2012). By adopting a p-value of 0.10, a balance was struck between guarding against false positives while being cautious not to overlook potentially meaningful patterns that may emerge in smaller samples.

Thematic Analysis

The results of the semi-structured interviews were analyzed using Braun and Clarke's (2006) six phases of thematic analysis. Both thematic and theoretical analyses were used to understand participants' experiences of emotion regulation during the writing program, changes in emotion regulation skills following the program, and changes in mental health symptoms. Seven overarching themes were identified, comprised of 18 sub-codes. Eight codes emerged from the interview data, and 10 codes were derived from theory. Each of the seven overarching themes were summarized. Relevant data from each summary was used to answer the respective research questions.

Process Evaluation

A process evaluation was conducted to better understand why and how expressive writing may be effective for youth experiencing symptoms of mental health problems. The following domains were assessed: dose received was evaluated by attendance, word count, and emotional writing content at each session (i.e., number of journal entries containing an emotion word or theme such as "it did not go how I wanted" or "I got furious and started saying many things which got me punished"). Fidelity was assessed through ratings of the facilitator's adherence to

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the protocol at each session (see Appendix D). Participant engagement was determined by asking

evaluation questions to participants at follow-up. In addition, observers were asked to rate

participant engagement at each session on a scale from one to three. Participant attendance and

engagement in the intervention are reported in Table 3. Contamination (whether the control

group inadvertently received the intervention) was assessed by asking participants in the control

group whether they keep a journal/diary in the sociodemographic form (see Appendix F).

Results

The results are presented in the following manner: (a) Participant recruitment and

demographic information; (b) program implementation measures including, program exposure,

participant engagement, intervention fidelity, and contamination; (c) analysis of quantitative and

qualitative emotion regulation outcomes; (d) analysis of quantitative and qualitative mental

health outcomes.

From the camp site, all 54 youth enrolled in the program were invited to participate. The

total population of eligible youth from the community serviced by the clinic site is not known. A

total of 91 adolescents were assessed for eligibility; 46 met eligibility criteria and were

randomized into the study conditions. A total of 42 participants completed questionnaires for at

least two time points. Due to the number of participants who missed data collection sessions,

particularly those in the waitlist condition at the camp site, complete questionnaire data for all

time points were available for four participants from the waitlist control group and 13 from the

intervention group. Please see Appendix H for a complete participant flow diagram depicting

participant recruitment, assignment to study conditions, and progression through the study.

Participants were on average 13.80 years old ($SD = 1.23$). Most participants were born in

Canada (97.14%) and were English-speaking (97.05%). Half of participants were female (50%).

Ratings of participants' mental health at pre-intervention can be seen in Table 7. On average, participants were in the *at-risk* range at pre-test for emotional symptoms, internalizing problems, and personal adjustment. Table 1 summarizes participant demographics (e.g., age, language, and sex).

Program Implementation

Program exposure and participant engagement

Participant engagement was assessed by the number of words written in each journal entry (i.e., wordcount), the emotional content of the writing, participant ratings of the intervention, and observations taken during the intervention. Observations of the clinic site revealed that participants attended on average 5.16 sessions out of 6 and that 85% of their journal entries contained emotional content. The most common writing topics were mental/emotional health, peer relationships, family relationships, and self/social identity. A complete list of writing topics can be viewed in Table 2. Observations of the camp site revealed persistent difficulties engaging the participants, and upon examination, the difficulties were related specifically to those in the waitlist control group cohort. Participants' behaviour in this cohort was described by research assistants as "disruptive, fooling around, talkative, and rowdy" across all sessions where observations were available. Despite the descriptions of disruptive participant behaviour, 94% of their journal entries contained emotional content, suggesting that they participated meaningfully in the intervention. Participants from the waitlist cohort at the camp site attended on average 4.2 sessions out of 6.

Intervention Fidelity

Adherence to the intervention protocol checklist (fidelity) was 88.62% on average overall ($SD = 12.41$) and varied by site. The average adherence of sessions delivered at the psychology

clinic was 94.68% (*SD* = 6.32) and 75.82 % at the camp site (*SD* = 12.58). Observations of the

camp site revealed that in in each session, the intervention was perceived to be "rushed" or there

was "limited discussion time" due to the brief window of time allotted in the camp day schedule.

As a result, some of the checklist items regarding facilitation and developing a relationship with

the participants were not adhered to (e.g., active listening, providing encouragement, and group

discussion). A review of fidelity ratings by intervention group revealed the problems were

predominantly related to the waitlist control group cohort, where the average fidelity rating

obtained was 67%.

Contamination

Two participants in the waitlist control group (DC08 and LL06) reported that they kept a

journal or diary regularly (several times per week). As a result, these two control group

participants may have been engaging in aspects of the intervention on their own during the

waiting period.

Analysis

An ITT approach was used to maximize sample size and obtain an unbiased estimate of

intervention effects (Gupta, 2011). Using the ITT approach, all participants who were randomly

assigned to an intervention condition (i.e., into either the intervention group or the control group)

were included in the statistical analysis, regardless of how much of the intervention they

received.

Emotion Regulation Outcomes

There were no significant differences in pre-test emotion regulation scores between the

intervention group and the waitlist control group nor site differences between the camp and the

clinic. Participant attendance and engagement in the intervention are reported in Table 2. The

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parametric assumption of normality was assessed using Shapiro-Wilks tests (Royston, 1982).

The assumption of equality of variance between groups was tested using F-tests (Snedecor &

Cochran, 1989) and Levene' tests (Levene, 1960). An alpha value of 0.05 was used in all cases

to determine significance. Assumptions were met in all cases. In examining the impact of the

intervention, achieved effect sizes were prioritized in addition to conventional p values.

Quantitative Emotion Regulation Outcomes

Paired samples t-tests were performed to compare cognitive reappraisal, suppression, and

emotion regulation skills from pre-test to post-test and from pre-test to follow-up. Results can be

viewed in Tables 3 and 4. There were no significant changes in emotion regulation skills from

the pre-test to the post-test nor from the pre-test to the follow-up. There were no significant

differences in either cognitive reappraisal or suppression between the pre-test and post-test. At

follow-up, there was no significant difference in cognitive reappraisal between the pre-test and

the follow-up. However, there was a significant decrease in emotion suppression between pre-

test and follow-up, indicating that participants suppressed their emotions significantly less at

follow-up as compared to their levels of suppression at pre-test, $t(11) = 2.81$, $p = .017$, $d = 0.81$.

This was a large effect size (Cohen, 1988).

Qualitative Emotion Regulation Outcomes

To ascertain whether participants were engaging in emotion regulation during the

intervention, they were asked about their feelings, both emotional and physical, while writing. In

addition, participants were asked about any differences or changes they noticed following the

program and their thoughts on how the changes came about. Participants whose questionnaire

results indicated significant changes in emotion regulation were also asked, during their

interview, to describe aspects of their emotion regulation before and after the intervention. In

response, participants reflected on their thoughts and feelings while writing.

During the intervention, most participants, 78%, described engaging in emotion

regulation. Following the intervention, all but one interviewee, 96% of participants, described a

change in their emotion regulation abilities or frequency of skill use. Three overarching themes

emerged to capture their experiences and changes: (a) emotion awareness, (b) emotion change,

and (c) emotion regulation support. A summary of the frequency of codes by category and

subcategory can be found in Table 5 for experiences that took place during the intervention and

in Table 6 for changes reported as an outcome of the intervention.

Emotion Awareness. During the intervention, participants became more aware of and

gave more attention to emotions than they had previously. Several participants described how

writing facilitated attention to topics that were previously unexplored with themselves and with

others. An intentional turning towards emotional experiences took place. Others shared that

taking part in the intervention exposed them to feelings that were previously avoided. The

writing intervention provided participants with time and space to let in new feelings and

experiences. Participants allowed themselves to access new emotional experiences. Most

interviewees, 78%, described attending to emotions during the intervention. Participants became

aware of their emotions in three ways: first, they engaged in emotional expression, second, they

labelled their emotions, and third, they experienced emotions physically.

Expressing Emotions. The writing program facilitated emotional expression for about

three-quarters of the youth who took part. Participants described how writing led to a sense of

disinhibition as they disclosed thoughts and feelings. For the writing participants, there was a

sense of releasing strong and pent-up emotions. The adolescents spoke to the cathartic nature of

writing as they described feelings of relief, lightness, and freedom. The private nature of writing was identified as a key component of the intervention that facilitated disclosure. The adolescents were able to disclose information without fear. Participants shared that writing provided a way of attending to experiences internally, when interpersonal disclosure was not available or did not feel comfortable, as in the excerpt below:

> The writing experience […] let me communicate, like, how am I doing, or how anything I was doing in my life affected me or anything like that, because I was never open with my emotions that much to my parents, nor was I to my siblings at all. (SC06)

Labelling Emotions. Just under half of the participants shared that while writing, they became more aware of their emotional experience, they were able to identify their emotions, and they developed an understanding of their emotions. For some participants, reflecting on past situations when writing allowed for an awareness and acknowledgment of how they were feeling in those moments. For others, the act of writing facilitated reflection on their bodily-felt sensations and how they could describe those feelings in words. Others described experiences of learning about their emotions and developing a deeper understanding of their experiences.

> I now can identify a lot of my emotions, if not in the moment then after. […] I think it was writing about it and kind of acknowledging like, oh, I'm writing about this, I'm going back to the moment and this is what I'm feeling right now. And like, that's how I felt in the moment. (DC08)

Experiencing Emotions. Just over a third of participants also shared that they were aware of physical experiences of emotion during the writing program. For some, the intervention evoked a sense of re-living an event from the past, suggesting an intensity to their experience. Others shared directly that writing aroused strong emotions. Writers were aware of bodily-felt

sensations such as physical symptoms of anxiety (e.g., nausea), as well as general feelings of discomfort, stress, and sadness during the sessions. Others described the experience as one that was hard or that they faced thoughts and feelings they didn't like to experience, suggesting that uncomfortable emotions were evoked during the sessions, as in the excerpt below:

> Well, it definitely brought out some emotions that I like- not try to hide but don't really like to discuss like, sadness for example, or made me really think about myself. Something that I normally don't do, I guess you could say. (IW11)

Notably, despite the discomfort evoked by writing about difficult experiences, one participant noted that for them, it was worth it.

Gains in Awareness, Clarity, and Understanding of Emotions. After writing, more than half of the interviewees reported they gained a greater awareness of their emotions and better understood their emotions and experiences. Differences in emotional awareness were reported following the intervention, such that participants were more attuned to their emotional experiences. Specifically, writers described a greater precision in terms of labelling their bodily felt sensations with emotional language. An understanding of the causes of emotions was also cultivated and reported as a gain following the writing program. As with labelling emotions, participants described a greater precision in identifying the causes of their emotions: "I started to learn more about my emotions, […] I am now a bit more patient and I am more aware of my emotions. So when I, when I am feeling something, I know what I'm feeling" (AC05).

Emotion Change. During interviews about their experiences taking part in the writing intervention, many participants shared experiences of engaging in adaptive emotion regulation to change their emotions as they were writing about their thoughts and feelings. Just over half of the interviewees, 57%, described using emotion regulation skills during the writing intervention

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to try to change their emotions. The theme of emotion regulation experience was divided into the following subcategories: cognitive reappraisal and meaning-making, modification of emotions, and rumination.

Following the intervention, all but one participant, 96%, reported gains in the ability to change their emotions by modifying them in adaptive ways. Growth in the ability to change emotions following the intervention was divided into the following subcategories: cognitive reappraisal and meaning-making, modification of emotions, writing as a coping strategy, tolerance and acceptance of emotions, readiness to confront emotions, and rumination.

Experiences of Cognitive Reappraisal and Meaning Making. After becoming aware of and understanding their emotions, just under one-third of the adolescents engaged in attempts to use conscious activities to analyze their emotions so that they could then modify them through reappraising their cognitions and constructing new meanings. Participants described how clearly understanding their experience enabled different thinking. Participants identified a link between gaining greater awareness of their experiences and making meaning from their situations. When writers were aware of their emotions, they were then able to engage in reflection that led to greater understanding and the ability to develop new narratives to explain their experiences: "Talking about that and writing things down and really getting a clear visual like look at the situation helped me not necessarily approach those kinds of things in a different way, but see them in a different light" (HT12).

Others described how they thought in adaptive ways when writing. For example, participants shared that they gave themselves advice, thought about values and morals to live by, reframed their experiences, engaged in positive thinking, and reflected on their level of responsibility and control. In this way, the adolescents were able to consciously organize their

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emotional experiences in new ways: "I always feel like there's a silver lining between the problems, but that's the thing. I only figured that out once I was better able to express myself and to realize that there really was a silver lining" (LF05).

    Gains in Cognitive Reappraisal and Meaning Making. The writing intervention was reported to have led to a change in participants' abilities to reappraise their thoughts adaptively and make sense of their experiences by just over half of the participants. Participants engaged in different ways of thinking that consisted of a healthier balance between positive and negative thoughts emphasized a healthy locus of control and developed other important skills. For example, although described only by a few individuals, writing appears to have allowed some participants to engage in other adaptive thinking such as creating a narrative of persistence and engaging in perspective-taking. For others, a reflection on control took place during the intervention wherein participants identified parts of their life they could exert a healthy control over, and which parts were not within their control that they could subsequently let go of. Several participants described a shift away from overly negative thinking and towards recognizing the positive. Others described that following the program, they engaged in more balanced thinking where both positive and negatives were recognized, as opposed to black-and-white thinking:

> Um, instead of focusing on the negatives, like I used to, I was thinking about all the positive out- outcomes and like, if something bad happens, I'll think of like the silver lining to it. […] So I don't really necessarily like my dad a lot. […] And I've had to spend, um, two weeks with him. But I thought I could hang out with- I can ask him to hang out with my friends more. Um, and I could do different stuff that's not relating just to him. I could do stuff outside of it. (BM12)

Experiences of Rumination. By contrast, one writer's description suggested they were engaging in the maladaptive practice of rumination when writing. This participant shared that the attention to difficult experiences led to self-abasing thoughts: "It was difficult, like I said, when the topics were more negative, because it's a lot easier to put yourself down than to put yourself up, so it kind of just like sent me down a spiral" (IW11).

Increases in Rumination. Following the intervention, one participant reported potential maladaptive changes in their thinking. This writer shared that there was greater attention toward thoughts, which was described as "overthinking." It is possible that the term *overthinking* implies a negative experience suggestive of rumination: "I just, like thought deeper into things. […] Like, I would overthink things" (AC07).

Experiences of Modification. The act of writing also gave space for a handful of participants to reflect on how they might modify their emotions in other adaptive ways. Program participants shared that they wrote about adaptive coping strategies such as meditation, thinking through different solutions to a problem, and thinking about ways to deal with a situation differently. Others described how they experienced the ability to calm themselves and that they felt a greater sense of control over their emotions. When writers were aware of their emotions and experiences, they were then able to engage in more deliberate and conscious reflection on how to modify their emotions adaptively. Clarity opened the door for participants to identify ways to either change the present situation or change their emotions, as seen in the excerpt below:

> I was rethinking, like, the moments, um, that I was writing. Um, like, the experience that I had. Um, and it was kind of like a reflection for me. And like, I could see, like, different things I could do, how I could have dealt with some stuff better. (BM12)

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A key ingredient that allowed for cognitive analysis of experience was the psychological distance evoked by the writing activity. The intervention facilitated self-distancing for the adolescents, allowing them to engage in more controlled and metacognitive processing. For example, some participants described how writing allowed them to "see the big picture." Others described how the writing experience helped them establish a working distance from their emotions that, in turn, allowed them to view their experience differently:

A lot of the things that I thought were a big deal were just me looking too far into it and have now realized like, oh, well, maybe I should have just taken a step back and looked at it and just [...] being able to like, when I was in the group write about it, and then come back and [...] I now have written it all down, gotten a clear view and can come back to this with a better understanding. (AM07)

Gains in the Ability to Modify Emotions. Just under half of the writers described a greater capacity to control their emotions following the intervention. For example, the adolescents often described how they were better able to tolerate difficult situations and remain calm. Emotion awareness was again highlighted as an important first step for emotion modification:

I'm... take the time to assess my emotions a lot more than I did before. Like identify them, identify what's causing them, and then how to, either get over it or deal with it or like, tackle it. I feel like I do that a lot more than I did. (IW11)

Many participants shared that after the writing intervention, they experienced improvements in their problem-solving abilities. As part of their problem-solving skill development, participants described how they gained skills in slowing down and focused on

adaptive coping strategies, ways to prevent challenging situations in the future, and choosing healthy behaviours, as seen below:

> I was trying to focus mainly on emotions. And I started figuring out ways, like, I was able to brainstorm how I could control them. And eventually, I figured out a few solutions that helped me, uh, understand them a bit better too. […] One of my solutions is if I was mad, I would either just tell someone to go away, or I'd leave. Um, if I started to cry, I would tell someone how I'm feeling and they would cheer me up, um, I guess that's it. (AC05)

Developing Writing as a Coping Strategy. Using expressive writing to cope with emotions was described as a new skill gained from the intervention by 35% of those interviewed. Program participants gained the knowledge that this was an effective strategy available to them, should they need to modify or cope with their emotions. Following the program, the adolescents reported that they used writing as a coping strategy when they were feeling overwhelmed, emotional, or experiencing problems. Others described continuing to use writing after the intervention as a positive and enjoyable experience.

> Because of the writing exercise, I was comfortable enough to get myself an old, uh my own like journal. So if I, like, had problems during the day I'd just write it down and it'd make me feel better, because I was better able to express myself instead of, you know, losing my temper and just yelling at everyone, for example. (LF05)

Becoming more Tolerant and Accepting of Emotions. Although coded in only a few instances, some participants described a more welcoming and curious attitude towards negative emotions following the intervention. These participants allowed themselves to encounter a full breadth of emotional experiences: "I learned that it's actually okay to not always feel positive.

And that it's, it's- you don't have to be in a good mood all the time. I allowed myself to feel more emotions" (HT12).

Readiness to Confront Emotions. In terms of their willingness to confront challenging situations, several writers described a greater openness to experience, a greater sense of confidence in approaching situations, and confidence that they could prepare appropriately for such situations.

> Like, before, I wouldn't handle things very well, like I like if I were to, like, I come across, like different emotions that I didn't want, I would kind of just like, get rid of them. And like, suppress them. Whereas now, like, I'll try and like, focus those emotions and like, see why I'm feeling that way. (AT09)

Emotion Regulation Support. During the intervention, about a third of participants reported they received support from themselves and those around them that enabled them to effectively engage in emotion regulation. Their experiences of support during the intervention were divided into two subcategories: (a) self-compassion, and (b) interpersonal regulation. In addition, following the intervention, a couple of participants reported gains in self-compassion.

Experiences of Self-compassion. Soothing the self by engaging in self-compassionate thinking was described by about a third of writing participants. In this way, participants were able to provide support to themselves while writing about challenging experiences. Specifically, many participants shared themes related to common humanity, the idea that suffering is part of the shared human experience. Writers described how during the intervention, they felt they were not alone with their problems. They reflected that others could relate to or understand them and that others probably experience similar difficulties, as seen in the excerpt below: "I feel like what

I wrote about was a mutual feeling. So I felt, um, I didn't feel judged or anything. I felt like, um, my peers could relate to what I was writing about" (OD06).

Gains in Self-compassion. Self-compassionate thinking also emerged as a skill gained following the intervention. A couple of participants described how they became kinder to themselves and reflected on their common humanity with others, as seen below:

> I've been a lot nicer to myself, like thought-wise. Like, I don't really like tear myself down mentally as much anymore. […] Well, like when I would make a mistake, I used to beat myself a lot about it, like I used to make a big deal out of it. But now I kind of just realize, like, you know, I'm human, it's bound to happen. And now I know different ways to process it and go through with it. (IW11)

Experiences of Interpersonal Regulation. About a third of adolescents described their felt sense during the intervention as one of support. Taking part in the intervention evoked feelings of safety and security. Program participants also described an interpersonal soothing component, in that they felt supported and accepted by other program participants and by the facilitator. Several writers expressed that a key value evoked by the space was one of non-judgement. An accepting and empathetic relational environment was created for most participants. The adolescents also experienced a sense of connection in that they felt that they were not alone and that they were listened to. This appeared to be a powerful experience of acceptance and validation for the group members: "The benefit for me was like, I, I felt safe. I felt like, um, I could write about anything I wanted, like, you know, I felt good" (AM05).

By contrast, one participant described a fear of judgement during the intervention. Whereas group facilitators were experienced positively, in the aforementioned case the participant's peers were perceived as a source of potential judgment: "I was a bit nervous

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because I was next to friends who are kind of judgmental. […] So I was afraid that they would see what I have to say and make fun of me" (LF05).

Mental Health Outcomes

Tests of parametric assumptions were conducted for the paired-sample t-tests. The parametric assumption of normality was assessed using Shapiro-Wilks tests (Royston, 1982). The assumption of equality of variance between groups was tested using F-tests (Snedecor & Cochran, 1989) and Levene' tests (Levene, 1960). An alpha value of 0.05 was used in all cases to determine significance. Assumptions were not met for two variables, *Test Anxiety* and *Self Esteem*. In these cases, the removal of one outlier per variable resulted in assumptions that were met in both cases.

Quantitative Mental Health Outcomes

Paired samples t-tests were performed to compare mental health outcomes from pre-test to post-test and from pre-test to follow-up. From pre-test to post-test, participants reported significantly more school problems, $t(23) = -2.01$, $p = .056.$, $d = -0.41$. No other significant differences were found from the pre-test to post-test (see Table 7).

In terms of school functioning, participant's overall level of school problems increased significantly from pre-test to post-test. However, by follow-up, participants' school problems had declined significantly compared to pre-test, which was also a medium effect, $t(11) = 2.13$, $p = .056.$, $d = 0.62$. At the pre-test, participants' school problems were an average T-score of 59, one point below the cut-off for the *at-risk* range. By follow-up, their scores had dropped by nine points and were well within the *average* range. Participant's attitudes to school also improved significantly, which was a medium effect size, $t(11) = 2.02$, $p = .069.$, $d = 0.58$.

In terms of participant's internalizing problems, several statistically significant and clinically meaningful changes were observed. A significant decline in overall internalizing problems was observed from pre-test to follow-up, which was a medium effect, $t(11) = 2.01$, $p = .070.$, $d = 0.58$. The decline in internalizing problems was also a clinically meaningful change as mean scores moved from the *at-risk* range to the *average* range. The internalizing problems scale is made up of the atypicality, locus of control, social stress, anxiety, depression, sense of inadequacy, and somatization scales. Significant changes were also observed for participant's levels of social stress and depression. The adolescent's social stress declined by follow-up, with a medium effect size, $t(11) = 2.56$, $p = .026$, $d = 0.74$. Participants' depression scores had also declined by follow-up, which was a medium effect size, $t(11) = 1.83$, $p = .094$, $d = 0.53$. The changes in depression and social stress were also clinically meaningful as mean scores moved from the *at-risk* range to the *average* range.

In terms of other changes that were observed, significant changes were found for relations with parents, functional impairment, and ego strength. Participants relations with parents improved significantly by follow-up, with a medium effect size, $t(11) = -2.04$, $p = .067$, $d = -0.59$. A significant decrease in participant's level of functional impairment was also observed, which was also a medium effect, $t(11) = 63$, $p = .063$, $d = 0.54$. Finally, participants ego strength improved significantly at follow-up, which was a medium effect size, $t(11) = -2.13$, $p = .057$, $d = -0.62$, and was also considered clinically meaningful as mean scores moved from the *at-risk* range to the *average* range.

Qualitative Mental Health Outcomes

To better understand participants' perceived changes in their mental health, they were asked to describe any differences in how they have been feeling, thinking, and behaving, as well

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as any benefits they felt the intervention conveyed. In addition, participants who reported a

significant change in their mental health on the questionnaires were also asked to describe

aspects of their mental health in more detail.

Experiential Outcomes. As part of their experience of the writing program, almost all

participants, 78%, shared positive experiences of emotional, social, and behavioural functioning

as immediate changes that took place during the program. Participants had three kinds of

beneficial experiences during the intervention: positive experiences, social experiences, and

processing time.

Positive Experience. During the intervention, participants described feeling positive

emotions such as happiness, whereas others described the experience as calming, fun,

comfortable, and relaxing. It appears that the intervention was widely viewed as a positive

experience within the week where positive emotions were evoked: "I felt calm. I feel like

everybody was super quiet. So it was just, it was just a relaxing moment. I feel like I had no

thoughts in my head. I was really, just really at ease" (OD06).

During the intervention, the behavioural aspects associated with taking part were also

perceived to be helpful. Attending the intervention provided positive behaviours and activities

that influenced the adolescent's emotions. For example, one participant described the writing

program as an escape from other, less comfortable, experiences in life. Another participant

described that the writing experience facilitated healthy behaviours (i.e., leaving the house) that

in turn led to positive feelings:

> It felt, it felt good too 'cause this, it was, it was a summertime and I, I hadn't really been
>
> doing anything. So it kind of felt good to get out of the house. Um, and then also have
>
> that, um, emotional stability. (DC08)

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Social Experience. Participants reported the intervention was also meaningful to them as a social experience. Writers shared that they felt a greater sense of group cohesion, belonging, openness, and trust. In this way, the social connections between group members were strengthened. Others described how writing with others was an engaging and fun experience compared to writing alone. Writing as a group supported sustained engagement with writing and made it a more enjoyable experience. Still, others described the writing program as a social experience where they could make new connections. Attending the intervention encouraged socialization that in turn positively influenced the adolescent's emotions: "I really liked the writing program. I thought it was really fun. And it's good to just have a group of people to talk to you and write with. Writing alone is lonely and boring" (HS11).

Processing Time. When describing their experience of the writing intervention, the adolescents identified the importance of the time and space provided. They shared both the importance of the literal time provided and how the environment supported their well-being. Writing program participants also expressed the significance of the therapeutic container provided by the intervention which allowed for processing time. The theme of processing time was coded for six participants. The writing intervention was viewed as a time within the week that was experienced as private and uninterrupted. It was also experienced as a structured time for reflection. The time provided allowed for several things to take place. First, it allowed for a complete and accurate expression of experience wherein participants had the time to get their feelings "right." Second, it allowed for deep focus and attention to experience. Third, it allowed participants to organize their experiences concretely. Putting their experience on paper, facilitated externalization and organization of thoughts and feelings into a coherent narrative.

If you're writing it down, you have a better time, you have more time to better think about

why you are feeling that way. And you get to, like, totally express that perfectly. (LF05)

I feel like that helps me, um, be, be more calm because I, I know what I have to do and it becomes more organized and I could see it on paper instead of just it floating around in my head and worrying. (OD06)

Mental Health Changes. Following the writing intervention, most participants (86%) described changes related to their mental health, that is, their social, emotional, and behavioural functioning. The theme of change in mental health was divided into the following categories: changes in mood and emotion, social changes, changes in self-esteem, and changes in self-awareness.

Changes in Mood and Emotion. Following the intervention, writing participants expressed strong positive emotions such as feeling happier. Participants also shared more neutral emotions such as feeling better, calm, comfortable, and lighter. Finally, participants shared that they felt a general sense of relief. More specifically, participants indicated they felt relief from somatic sensations, relief from primary emotions such as stress, and relief from secondary emotions such as guilt and dread, as seen in the excerpt below:

Beforehand, I would get a bit of stomachache, when I was nervous. Now, that doesn't really happen anymore. But I remember before, they would get like, pretty bad to the point where I couldn't eat anything 'cause I felt nauseous. […] Now, however, it's slowly getting better. I- I could, I could feel myself like, feeling better and like experiencing those emotions less and less. […] I definitely feel a lot better. And, like I said before, a lot lighter. I don't walk around with such like, guilt and dread anymore. (IW11)

By contrast, the theme of negative mood was coded twice to reflect the participant's experiences following the writing program. Negative emotions included stress, sadness, and

fatigue. Notably, both participants also reported other positive changes to their mood in response to other questions, and both attributed their negative emotional experiences following the intervention to the time of year and return to school, as seen below:

> I have been feeling a lot of negative emotions lately, but that's because I think I have like, um, seasonal depression, so it's gonna go away. But, yeah, usually in the fall, there's like a decrease of my positive emotions. (LF05)

Social Changes. A frequently reported theme of change following the expressive writing intervention was social change, which was coded for about half of the participants. Social changes included more comfort communicating, more frequent communication, and deeper connections with others, as well as using social connections to support adaptive coping strategies.

Writing was generally viewed as a catalyst to start conversations with others. Through writing, the adolescents described that there was permission granted to share more with others. Writing also drew a greater awareness of thoughts and feelings, which, in turn, facilitated communication with others. Third, writing was a way to practice communication and gain confidence before putting it into practice. Participants also reported practicing communication through the group discussion portion of the intervention. Fourth, the group format facilitated connections with others, which increased participants' social confidence:

> I am more open and able to talk to people, um, about, um, what I'm dealing with, um, and I feel like the writing, write- writing it out made me feel like okay, that I can like, if I can write it out, then I can tell other people. […] I used to not want to talk to a lot of the kids in my class because I was like, worried what they would think of me if I actually tried talking to them. But after doing the program, I started talking to more people and I

actually started making some really good friends. […] I feel like I got more like, like a

confidence boost kind of and I didn't really care if people liked me or not after. (BM12)

Program participants also reported more frequent and stronger social connections with

others. The adolescents reported changes in their social behaviour in that they engaged in more

frequent disclosure to family and friends. Following the intervention, participants reported a

change in their felt sense when speaking to others: "How I wrote about myself and how everyone

was sharing their things it made me feel uh, more comfortable in uh, talking about the

experiences" (IP07). For example, an increased sense of comfort and a sense of deeper

connection. After the program, participants were better able to engage in adaptive interpersonal

coping strategies. One writer shared that they asked for help from others more often after the

writing program. Others described how, following the writing program, they disclosed their

feelings to others as part of a strategy to calm down when emotional.

Changes in Self-Concept

Self-esteem. Several program participants developed a greater sense of self-esteem after

engaging in expressive writing. Participants reported that they felt more positive toward

themselves. Others described how they became more confident after the intervention.

Participants also shared that they felt a greater sense of pride in themselves:

> I felt proud of myself. I felt proud that I was able to overcome this and remember it while
>
> writing about it. So yeah, I, I felt proud of myself, and I felt happy to, to be able to have
>
> done that. (OD06)

Self-awareness. Several adolescents who took part in the writing program also reported

gains in self-awareness following the intervention. One participant shared that they engaged in

more self-talk after the program, which, in turn, led to greater self-awareness. Other writers

shared that they became more aware of their tendencies and their strengths. Among participants, there was a felt sense of deeper connection to the self, following the intervention:

> I learned that I take on a lot of things. […] I already knew that, But, like, I got to see that more. […] I don't usually journal, but it was interesting, like, learning a different way how to kind of connect with myself through that. (AM11)

Discussion

The current study evaluated the impact of expressive writing on adolescents' emotion regulation skills and mental health. Expressive writing shows promise as an effective intervention for adolescents (Travagin et al., 2015), yet the mechanisms behind the intervention remain unclear (Sloan & Marx, 2018). Further, an understanding of emotion regulation outcomes have been limited to adult populations within the literature, and it has remained unclear whether the improvements in emotion regulation that adults have experienced from participating in expressive writing would extend to adolescent populations.

Quantitative Findings

Changes in Mental Health. The quantitative results indicated that the youth experienced positive changes to their emotional, social, and school functioning. At intervention follow-up, the adolescent's self-reports evidenced significantly fewer school problems, specifically, improved attitudes to school, fewer internalizing problems including less social stress and fewer symptoms of depression, and lower levels of functional impairment in day-to-day activities. Participants also showed significantly improved relationships with their parents and improved ego strength (i.e., a strong sense of self and sense of emotional competence). Notably, the changes to participants' internalizing problems (including social stress and depression symptoms) and ego strength can be considered clinically meaningful, as after the intervention, participant self-reports

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indicated that they were no longer considered to be at-risk for mental health problems. The findings from the present study add to a growing body of research demonstrating that expressive writing benefits internalizing problems, social functioning, and school-related functioning (Frattaroli, 2006; Guo, 2022; Reinhold et al., 2018; Travagin et al., 2015).

In terms of the adolescent's school functioning, a more complex picture emerged. There was an initial increase in reported school problems, which then significantly decreased by follow-up. All other significant changes emerged at follow-up. The delayed effects observed were consistent with research by Travagin et al. (2015), who found the timing of follow-up had a large mean g-effect on outcomes such that studies with a longer-term follow-up evidenced larger effect sizes. Similarly, Guo at al. (2022) found that the effects of expressive writing on depression, anxiety, and stress, emerged only at follow-up. It may be that immediately after expressive writing, negative emotions are brought forward, but in the weeks and months following the intervention, participants continue to reflect on their experiences, become more tolerant of their emotions, and engage in healthy coping behaviours (e.g., seeking support from others) that then improves their mental health over time as participants become more habituated to their emotions and healthier coping behaviours are practiced.

Expressive writing shows promise as an intervention to promote the mental health of underserved adolescents in the community who are experiencing sub-clinical mental health problems. The present study also provides evidence that expressive writing can be a feasible tool to promote mental health and provide support to youth following times of crisis, such as the COVID-19 pandemic. This study adds to a body of research examining the effectiveness of expressive writing in response to a shared distressing experience. The present study found improvements in youth mental health and emotion regulation in the context of the ongoing

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COVID-19 pandemic. This is in contrast to research by Vukčević et al. (2020) who found increased stress following an expressive writing intervention at the onset of the pandemic. It may be that in the former study, participants were acutely experiencing the stress associated with the onset of the pandemic and were therefore disrupted in their processing of the event, whereas in the present study, participants had been coping with the pandemic for over one year, making the stressor less acute. In addition, in the present study, the focus of writing was not solely on pandemic-related stressors, and as a result, participants had a choice to write about a topic they were comfortable with and that would not overwhelm them.

Changes in Emotion Regulation. Results of the present study indicated that the expressive writing intervention improved participants' emotion regulation. At follow-up, participants had significantly reduced their emotional suppression. Important differences were observed between the results obtained in the present study and the results obtained by Cheung et al. (2019). While in both cases a reduction in expressive suppression was observed at follow-up, Cheung et al. also observed an increase in cognitive reappraisal at follow-up among their sample of emerging adults, whereas in the present study, no change in cognitive reappraisal was reflected in the quantitative outcomes for the adolescents. One explanation may be that an individual's capacity to engage in cognitive reappraisal continues to develop throughout the adolescent years (Willner et al., 2022). It may be that in the early adolescent years, i.e., the mean age of the participants in the current study, youth do not have the full capacity to engage effectively in cognitive reappraisal (Travagin et al., 2016). The present findings are also in contrast to those of Wong and Mak (2016) who obtained null results, that is, they found no change in emotion regulation skills in a population of university students (mean age = 20.5). Wong and Mak (2016) hypothesized that their measure of emotion regulation was limited to three domains of emotion regulation,

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clarity, repair, and attention, and that expressive writing may benefit emotion regulation in other ways, such as by improving adaptive coping strategies.

Qualitative Findings

Mental Health Improvements. Participants expressed that they experienced a more positive mood, improved their social functioning, and had greater self-esteem and self-awareness following the intervention. The themes expressed in the interviews by the adolescents were commensurate with the findings from the quantitative results.

Expressive Writing is a Positive Experience and Leads to a Positive Mood. When asked about the perceived benefits of the intervention, one of the most salient outcomes described by adolescents was the overall positive experiences that took place during the intervention. Expressive writing participants shared that the intervention evoked positive emotions, increased social connections, and provided time for mindful reflection. This is in line with research by Lyubomirsky and Layous (2013) who described how simple positive activities (e.g., writing letters of gratitude) elicit positive emotions, thoughts, and behaviours, and lead to improved well-being.

In addition, the positive mood resulting from participating in the intervention is also in line with research on behavioural activation. Behavioural activation, a common component of cognitive behavioural therapies for depression, focuses on increasing the number of pleasant activities and positive interactions with the environment, and reducing avoidance, which is common in depression (Kanter et al., 2012). As with behavioural activation, attending the expressive writing sessions may have served to encourage 'approach' behaviour, increase social contact, and provide a regularly scheduled, pleasant activity for the youth who took part.

Another salient mental-health-related outcome was an improvement in positive affect and mood (e.g., feeling better and calmer) and a decrease in negative affect (i.e., feeling relief from stress) following the intervention. Positive affect plays an important role in mental health as it has been found to mediate the relationship between positive mental health and suicidal ideation such that suicidal ideation is less likely when positive mental health includes positive affect (Teismann et al., 2019). Further, positive affect is associated with increased self-efficacy, which in turn is associated with increased work satisfaction and mental health (Teismann et al., 2019). Given the implication of positive affect in overall mental health (Schutte, 2014), expressive writing may draw out positive emotions in youth who are experiencing symptoms of mental health problems.

The reports of positive affect from participants in this study are in contrast to several expressive writing studies evidencing decreases in positive affect and increases in negative affect (see: Lu & Stanton, 2010; Travagin et al., 2016; Wong & Mak, 2016). Notably, the studies by Lu and Stanton (2010), Travagin et al., (2016), and Wong and Mak (2016) examined populations of students who were not necessarily experiencing significant symptoms of mental health problems. As suggested elsewhere (see: Travagin et al., 2015; Travagin et al., 2016), expressive writing may not be beneficial for adolescents who are not already experiencing mental health problems, because writing may focus their attention to negative thoughts and emotions, where none previously existed.

Participants' accounts of the positive aspects of the intervention in our study elucidated a novel view of the processes at play during expressive writing interventions that to our knowledge have been unexplored within the expressive writing literature with adolescents. A large proportion of expressive writing interventions for adolescents have been conducted in group

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formats. Yet, positive social contact has been unacknowledged as a potential mechanism through which expressive writing benefits mental health. During adolescence, peer relationships become highly salient, and as a result, have a particular influence on mental health (Rapee et al., 2019). For example, peer rejection during adolescence is associated with poor mental health (Rapee et al., 2019). During adolescence, more importance is placed on peer and romantic relationships, and consequently, adolescents may perceive more isolation and loneliness even when they are surrounded by others such as family (Laursen & Hartl, 2013). Given that perceived isolation and loneliness are associated with poor mental health (Laursen & Hartel, 2013), the social interactions with peers that took place during this intervention may have improved their mental health by reducing participant's perceptions of isolation and loneliness. In addition, adolescents may benefit from a group format by feeling valued by others, developing a sense of belonging, gaining skills in forming and maintaining relationships, and accessing a support system (Brown, 2018).

Future research is warranted to compare expressive writing delivered in group versus individual formats. Social skills (e.g., assertiveness, relationship building), a sense of belonging, and social stress could be examined as variables that moderate the relationship between expressive writing and mental health outcomes. It would also be beneficial to compare expressive writing to other positive activities (e.g., writing letters of gratitude, performing acts of kindness) to better understand the relative contribution of these processes (i.e., behavioural activation, positive activities) to intervention outcomes. For adolescents, the interpersonal component of expressive writing may prove to uniquely contribute to intervention outcomes because adolescents may require more support to engage in adaptive emotion regulation when writing, than adults do (Jones et al., 2018).

Expressive Writing Bolsters Social Connections. The qualitative results were commensurate with the quantitative results, which suggested a decrease in social stress and an increase in the perceived quality of adolescent's relationships with their parents. The analysis of participant interviews revealed about half of the participants concluded that expressive writing bolstered their social connections with others by building their communication skills and confidence. The analogous quantitative and qualitative results of the present study add to a growing body of research demonstrating that expressive writing leads to increased social contact and disclosure (Boniel-Nissim & Barak, 2013; Travagin et al., 2016; Winslett, 2005). The qualitative results from the present study also provide novel substantiation of previous hypotheses by describing the processes that result in improved social functioning. Namely, participant accounts indicated that during expressive writing, participants are exposed to their thoughts and feelings related to uncomfortable social situations, and their discomfort is reduced through repeated exposure.

The present findings are the first to confirm the hypothesis proposed by Winslett (2005), that participants engage in behavioural rehearsal by practicing emotional disclosure when writing and consequently become more comfortable disclosing intimately to others. It is thought that behavioural rehearsal of social conversations helps individuals retain the content in memory, improve the skills related to delivering the content, and increase confidence in performing conversations (Beaumont et al., 2017). In addition, when rehearsing a social scenario, individuals may examine the scenario from another viewpoint, thereby increasing perspective-taking skills. In the present study, adolescents shared their experiences of all the above, namely, clarifying their messages, becoming more confident disclosing, and engaging in perspective-taking when writing.

Expressive Writing Improves Self-Concept. The present qualitative findings were in line with quantitative results showing a significant increase in ego strength, that is, the participant's self-identity, self-awareness, and self-acceptance. Almost half of the participants improved their sense of self, either by gaining a deeper connection to the self or by increasing other positive feelings towards the self. Adolescence is a key developmental window where young people individuate and clarify their sense of self (Rapee et al., 2019). In early adolescence especially, self-concept is typically more inconsistent and negative than in later adolescence. Negative beliefs and self-perceptions are hallmarks of many social-emotional disorders, and there is a bi-directional relationship between negative self-concept and social-emotional disorders (i.e., anxiety, depression, and eating disorders; Rapee et al., 2019). Expressive writing shows promise as a positive and supportive intervention to promote adolescent mental health by supporting a positive self-concept that promotes adaptive emotional functioning.

Emotion Regulation Improvements and Processes. The present study found that all but one participant gained skills in emotion regulation or improved their emotion regulation practices following the intervention. The gains in emotion regulation skills were commensurate with the quantitative findings described above. When interviewed, participants also provided their perceptions of how the intervention promoted their emotion regulation skills and practices: emotion awareness, emotion change, and motion regulation support.

Expressive Writing Increases Emotion Awareness. Youth improved in their mindful awareness of emotions, which was both a process that took place during the intervention and a reported intervention outcome. Improvements in emotion awareness were in line with quantitative results, which showed a significant effect of the intervention on suppression such that participants suppressed their emotions significantly less at follow-up. During interviews,

participants provided a nuanced understanding of the reduced emotion suppression: the adolescents perceived that writing granted permission, time, and space for tuning into and making space for emotions. When bodily-felt sensations are elicited (e.g., through writing) and brought into conscious awareness, they can then be organized and integrated into the individual's schemas (Greenberg, 2004). The present results correspond to those observed by Groleau et al. (2023) who also found that expressive writing improved adolescent's emotion labelling abilities.

Following their experiences during the intervention, increased emotion awareness was the most frequently reported emotion regulation-related outcome. The improvement in emotion awareness found in the present study were in contrast to quantitative results regarding emotion regulation skills, which showed no significant changes post-intervention or at follow-up. It is possible that the limited sample size available at the follow-up time point precluded the detection of subtle intervention effects by the quantitative measures. Nevertheless, the responses of the adolescents during the interviews suggested meaningful change took place for a subset of participants, and, given the important role emotion regulation skills play in mental health, a key question for future researchers to explore will be why certain participants benefit and under what circumstances.

Expressive Writing Leads to Improved Emotion Modification Skills. For participants, the ability to modify emotions in an adaptive manner (e.g., reaching out for support) was the most salient emotion regulation-related outcome following the intervention. Surprisingly, this contrasted with the quantitative results, which suggested that there was no significant effect of the intervention on cognitive reappraisal strategy use nor overall emotion regulation skills. The lack of significant effects for participant's overall emotion regulation skills may be because while all but one participant reported changes to their skills and strategy use, participants

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reported using a variety of strategies which may not have been reflected in the overall broad

questionnaire constructs. It is possible that the standardized self-report questionnaires lacked the

precision needed to detect subtle changes and small shifts in participants' attitudes, behaviors, or

perceptions.

The heterogeneity of the gains in emotion regulation strategies reported included the

improved ability to make sense of experience and integrate it into a narrative, modify emotions

through problem-solving, engage in healthy coping behaviours, use writing to cope adaptively,

and become more tolerant and accepting of emotions. The perceived improvements reported by

interviewees indicate that expressive writing is a promising intervention for adolescents to

develop key emotion regulation skills above and beyond emotion awareness. This was in line

with results obtained in a qualitative study by Groleau et al. (2023) who found that after

expressive writing, participants gained coping skills related to managing their emotions when

faced with difficult situations.

In their Adaptive Coping with Emotions model, Berking and Whitley (2014) argue that the

skills of modifying negative emotions and accepting negative emotions that cannot easily be

modified are the most important skills for optimal mental health. The skills of modification,

acceptance, and resilience are more strongly associated with psychopathology, and stronger

predictors of treatment gains than other emotion regulation skills such as emotion awareness

(Berking et al., 2008).

Emotional Self-Support and the Therapeutic Space. Throughout the intervention,

participants received support from those around them and provided support to themselves to

weather the emotions evoked by the writing activity. The importance of perceived interpersonal

support within the expressive writing space is a novel mechanism that has not previously been

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explored within the expressive writing literature. Participants described the interpersonal

environment of the expressive writing intervention as accepting and safe, leading to experiences

of being soothed and supported by others. Such a safe and supportive environment may have

contributed to the mental health and emotion regulation results observed because when

individuals are free of interpersonal anxiety, they have greater capacity to attend to their

emotions mindfully (Greenberg, 2004). It is possible that the safe and supportive space in the

present study was evoked in part because skilled graduate students in clinical psychology

programs facilitated the intervention. It is possible that similar effects may not be observed in

future studies, should the intervention be implemented by non-clinical staff such as teachers.

Interpersonal soothing and validation can also be internalized and lead to the development of

self-compassion, another salient experience for expressive writing participants. While only two

participants reported that they were more self-compassionate following the intervention, about a

third of interviewees reported engaging in self-compassionate thoughts while writing. As

adolescents tend to engage in negative self-evaluation, social comparison, and isolated thinking

all of which are related to poor mental health (Aalsma et al., 2006; Bluth & Blanton, 2014; Hill

& Lapsley, 2011; Neff & McGehee, 2010), acting compassionately towards oneself, may be

particularly relevant to help foster mental health and wellbeing at this age (Bluth & Blanton,

2014; Neff & McGehee, 2010). There is a growing body of evidence that self-compassion may

play an important role in mental health and that interventions targeting self-compassion may help

improve mental health (Neff & Germer, 2013; Smeets et al., 2014; Trompetter et al., 2017).

Given the link between self-compassion and mental health, future research is warranted to better

understand how self-compassion can be bolstered during expressive writing interventions.

Implications for Future Research

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Conceptualizing the mechanisms occurring during expressive writing under the theoretical framework of emotion regulation has illuminated under-examined mechanisms, such as behavioural activation, behavioural rehearsal, and interpersonal support. Elucidating these mechanisms can aid in developing a logic model for how expressive writing conveys a benefit, which in turn can guide future research. A logic model is "a graphical representation of the relationship between a program's day-to-day activities and its outcomes" and in the case of expressive writing, developing such a model may contribute to organizing and unifying the field by outlining the program components and outcomes and specifying the relationships therein (Chen, 2014, p.2). The current study illuminated the need for future research to tease out the unique contributions from the interpersonal aspects of the intervention and the behavioural activation associated with the intervention. In addition, it is not clear why positive cognitive reappraisal and self-compassion outcomes were evident for only a subset of the overall sample. Given the important role that self-compassion and emotion regulation play in mental health, future research in these areas is warranted.

It will be important to understand the unique contributions of each mechanism towards mental health outcomes, and how expressive writing interventions can be tailored to bolster other important emotion-regulation skills such as the readiness to confront distressing situations and the ability to accept and tolerate emotions that are difficult to change, as outlined in Berking and Whitley's 2014 Adaptive Coping with Emotions model. It would be beneficial to understand whether tailoring expressive writing instructions to encourage participants to write narratives supporting themselves to face difficult situations, or to accept strong emotions that are difficult to change, would facilitate participants to gain skills in these areas of emotion regulation.

Finally, it will be important for future research to study the effectiveness of expressive writing for youth who may have difficulties with writing due to learning disabilities, executive functioning difficulties, motor-coordination difficulties, or other such challenges. It is possible that youth with writing challenges may be systematically excluded from expressive writing or may self-select themselves out of participation. If expressive writing is to be implemented as a universal intervention or on a larger scale, it will be important to understand how the intervention can be adapted for diverse populations and whether it remains effective for all youth.

Implications for Practice

While there is great potential for a positive impact when implementing expressive writing intervention for adolescents, there is also potential for youth to engage in rumination, as they are asked to spend time thinking about potentially upsetting topics. Awareness of negative emotions alone is not necessarily beneficial and may intensify distress (Berking & Whitley, 2014). While most participants in this study did not report adverse experiences or negative outcomes of the intervention, two participants shared that they were "overthinking" or "thinking negatively," which is suggestive of rumination. It will be important for implementors to be aware of possible adverse effects, closely monitor reactions and responses of expressive writing participants, and modify the intervention when needed to assist adolescents who engage in rumination. Expressive writing participants may benefit from psychoeducation regarding how to modify and accept emotions, and how to engage in self-compassionate thought, possibly through specific writing instructions.

This study identified the unique contribution of a therapeutic space as a mechanism occurring during expressive writing interventions. The adolescents in this study emphasized the importance of the therapeutic space provided by the intervention. Above and beyond writing, the

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adolescents spoke to the positive experience of engaging in an enjoyable activity, connecting

with others, and receiving support. Future researchers should give special consideration to

creating safe and supportive spaces and evaluating intervention fidelity and participant

engagement as part of a process evaluation. Intervention outcomes may have been

underestimated in studies due to implementation difficulties and disruptive environments that

may have precluded a safe and supportive environment from developing (see: Curry, 2011;

Kalantari et al., 2012; Walter, 2018).

In line with a public health approach to mental health care, it is recommended that

universal mental health promotion be delivered to all youth (Splett et al., 2014). The present

study implemented expressive writing in both community and clinic settings, providing outreach

to adolescents who may not otherwise have access to mental health promotion. When

considering how expressive writing could be delivered to reach more youth, it is worth

considering the recommendation that community agencies, schools, and universities partner

together to deliver high quality mental health initiatives across sectors, with the goal of

sustaining services over time (Splett et al., 2014; WHO, 2020).

School psychologists are in a unique position to develop cross-sector partnerships and

oversee the implementation of expressive writing interventions in school and community

settings, given their expertise in mental health and knowledge of social-emotional interventions

(Moon et al., 2017). Indeed, there is a growing movement within the field of school psychology

to move towards a practice model involving a greater emphasis on delivering mental health

services, especially given the growing mental health needs of students (Moon et al., 2017; Splett

et al., 2014). Further, there is a growing body of research demonstrating that school

psychologists desire a greater role in delivering mental health services (Splett et al., 2014). In

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this vein, future researchers may wish to examine whether expressive writing can be implemented with fidelity in school settings. It would also be worthwhile to examine whether it would be feasible to train teachers, school social workers, or other appropriate staff to deliver expressive writing in school settings. By training school personnel to deliver expressive writing interventions, there is potential to deliver expressive writing on a larger scale, thereby reaching more youth (Leeman et al., 2017). School psychologists are ideally positioned to offer in-service training to teachers regarding the implementation of interventions for adolescent mental health such as expressive writing (Splett et al., 2014). Receiving training on supporting student mental health has also been identified as highly desirable by teachers (Moon et al., 2017).

Strengths and Limitations

A strength of this study was the mixed-methods approach, which provided both broad, generalizable results and deep, contextualized findings, ultimately allowing for stronger inferences to be drawn. The interviews in particular revealed rich information that provided context to explain the quantitative findings. For example, interview results revealed the *why* behind the social and mental health outcomes. Previous studies in the expressive writing literature have tended to rely heavily on Linguistic Inquiry and Word Count (LIWC)*,* which does not capture the nuance of experience, as participants may experience much more during the intervention than what is written on the page. For example, participants in this study spoke to the benefits of socializing with others during the intervention, and about their bodily-felt experiences when writing, none of which was captured in their written texts.

Another strength of this study was the use of clinical measures to examine youth mental health. The use of norm-referenced measures allowed for a clearer understanding of the magnitude and meaning of the outcomes observed. Specifically, the measures allowed for an

understanding of when participants moved from a level of functioning/symptoms suggestive of mental health problems to a level of functioning/symptoms suggestive of functioning within the normative range.

The findings should be also interpreted in the context of some limitations, chief among those is that unequal attrition from the waitlist control group in the context of the COVID-19 pandemic resulted in an inadequate and ineffectual control group, and as a result, the improvements in emotion regulation and mental health noted above may be partly explained by maturation of the adolescents or other confounding variables. It is unlikely that the gains made by the youth were due to maturation effects alone, as the expressive writing intervention effectiveness evaluated in the present study has previously been validated by researchers that were able to implement stronger experimental controls, i.e., randomized control trials (Facchin et al., 2014; Kliewer et al., 2011; Ramirez & Beilock, 2011; Robertson et al., 2021; Shen et al., 2018; Wong & Mak, 2016). In addition, the qualitative results from this study provide additional corroboration of the quantitative results, wherein the participants shared their experiences of change as a result of taking part in the intervention. Nevertheless, caution should be exercised when interpreting the findings of this study, as the present sample may not be representative of the diversity of the community. In intervention research, it is crucial to strike a balance between methodological rigor and meeting the mental health needs of the community. When randomization is not feasible, other methods such as using a convenience sampling, which is inexpensive and simple to implement, may be a viable alternative.

In conclusion, the present study found that adolescents experiencing symptoms of mental health problems who participated in six sessions of expressive writing in combination with group support experienced positive changes to their mental health and emotion regulation. This study

provides a unique contribution to the literature by demonstrating that expressive writing improves the emotion regulation skills and practices of early adolescents. Emotion regulation difficulties show transdiagnostic associations with social-emotional disorders, suggesting that they are an important target for intervention because emotion regulation problems lay at the core of many mental health problems. By targeting emotion regulation skills, there is potential for expressive writing interventions to have broad benefits for many mental health problems.

The qualitative results from the interviews with the adolescents revealed several potential novel mechanisms that have been previously unexplored and unsubstantiated within the adolescent expressive writing literature including the effects of social contact, behavioural activation, behavioural rehearsal, and the therapeutic space. These mechanisms provide direction for future research to explore to comprehensively understand the contribution of each aspect of the intervention, ultimately contributing to understanding the "key ingredients" of expressive writing.

Finally, the findings from the present study add to a growing body of research demonstrating that expressive writing conveys a significant benefit for adolescents who are at risk for social, emotional, and behavioural problems, regarding their internalizing problems, social functioning, school-related functioning, and self-concept. Further, the reported experiences of the adolescents in our study are in line with previous research showing expressive writing increases emotion awareness, emotion modification skills, positive affect, and social contact. Early adolescence is a critical time to provide intervention given the substantial developmental changes and susceptibility to environmental influences. Expressive writing is a simple, brief, and engaging intervention for adolescents requiring few resources. The present study provides compelling evidence that expressive writing can be an effective means of

providing mental outreach in the community to promote emotion regulation and adaptive coping

for youth who are vulnerable to developing mental health problems.

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Table 1

Participant Demographics

| Characteristic | Condition | | | | Site | | | | Full sample | |
| | Intervention group | | Waitlist control | | Clinic | | Camp | | | |
	n_1	%	n_2	%	n_1	%	n_2	%	n	%
Sex										
Male	8	34.78	13	68.42	4	30.77	17	58.62	21	50
Female	15	65.21	6	13.57	9	69.23	12	41.38	21	50
Primary language [a]										
English	19	100	14	93.33	13	100	20	95.24	33	97.06
French	0	0	1	6.66	0	0	1	4.76	1	2.94
Place of Birth [b]										
Canada	19	100	15	93.75	12	100	21	100	34	97.14
Other [c]	0	0	1	6.25	0	0	0	0	1	2.86
Grade										
6	1	4.34	0	0	0	0	1	3.45	1	2.38
7	3	13.04	6	31.58	2	15.38	7	24.14	9	21.43
8	10	43.48	10	52.63	3	23.08	17	58.62	20	47.62
9	4	17.39	2	10.52	3	23.08	3	10.34	6	14.29
10	3	13.04	0	0	3	23.08	0	0	3	7.14
11	2	8.70	1	5.26	2	15.38	1	3.45	3	7.14

Note: $N = 42$ ($n_1 = 23$ for intervention group; $n_2 = 19$ for waitlist control). Participants were on average 13.80 years of age ($SD = 1.23$).
[a] Data from 8 participants was missing.
[b] Data from 7 participants was missing.
[c] Consists of any other place of birth outside of Canada (i.e., Haiti).

Table 2

Program Exposure and Participant Engagement

| | Condition | | | | | | Site | | | | | | Total | | |
| | Intervention | | | Waitlist | | | Clinic | | | Camp | | | | | |
	N	M	SD	N	M	SD	N	M	SD	N	M	SD	N	M	SD
Attendance [a]	23	4.56	1.73	18	4.16	1.76	12	5.16	1.85	29	4.06	1.12	41	4.39	1.73
Wordcount [b]	23	157.84	10.50	17	126.92	19.13	12	211.76	25.48	28	74.46	23.35	40	130.93	10.00
Content [c]	23	72.08	29.36	18	70.41	30.82	12	85.91	18.69	29	65.38	31.88	41	71.39	29.95
Satisfaction	9	5.44	1.33	6	5.83	1.85	7	6.14	1.22	8	5.13	1.64	15	5.60	1.50
Enjoyment	10	5.40	1.35	6	5.33	1.63	8	6.00	1.31	8	4.75	1.28	16	5.38	1.41
Helpfulness	11	4.18	1.72	6	5.00	2.00	8	4.63	1.51	9	4.33	2.12	17	4.47	1.81
Fidelity [d]	14	88.84	8.46	12	90.63	15.89	19	94.68	6.32	9	75.82	12.58	28	88.62	12.41

[a] Number of sessions attended out of six.

[b] Number of words written per session.

[c] Percentage of written entries where the content was emotional.

[d] Percentage of endorsed items on the fidelity checklist. *N* refers to the number of sessions where a rating was available.

EXPRESSIVE WRITING FOR MENTAL HEALTH AND EMOTION REGULATION

Table 3

Frequencies of Writing Topics

Writing Topic	*n*	*%*
Mental/emotional health	49	28.2
Peer relationships	33	18.9
Family relationships	24	13.8
Self and social identity	22	12.6
School	15	8.6
Physical health	10	5.7
Sports	8	4.6
Violence	7	4.0
Positive Experience	3	1.7
Other	3	1.7

Note. N=174. Participants wrote about *M* = 4.14 (*SD* = 1.63) topics each over the total course of the intervention.

Table 4

Results of Paired Samples T-Tests of Emotion Regulation from Pretest to Posttest

	Pretest		Posttest		*df*	*t*	*p*	Cohen's *d*
	M	*SD*	*M*	*SD*				
Reappraisal	4.68	0.95	4.48	1.03	22	0.692	0.496	0.144
Suppression	4.62	1.09	4.57	1.31	22	0.675	0.506	0.141
Emotion Regulation Skills	2.21	0.65	2.04	0.82	24	0.538	0.596	0.108

Table 5

Results of Paired Samples T-Tests of Emotion Regulation from Pretest to Follow-Up

	Pretest		Follow-up		*df*	*t*	*p*	Cohen's *d*
	M	*SD*	*M*	*SD*				
Reappraisal	4.68	0.95	4.80	1.60	11	0.762	0.462	0.220
Suppression	4.62	1.09	3.96	1.48	11	2.812	0.017**	0.812
Emotion Regulation Skills	2.21	0.65	2.49	0.97	11	0.490	0.634	0.141

Table 6

Frequency of Codes Within Experiences of Emotion Regulation During the Intervention

Coding category	Number of participants
Emotion awareness	18
Expressing emotions	17
Labelling emotions	9
Experiencing emotions	8
Emotion change	13
Cognitive reappraisal and meaning making	7
Modification	4
Rumination	1
Emotion regulation support	10
Self-compassion	8
Interpersonal regulation	8
Total	18

Table 7

Frequency of Codes Within Changes in Emotion Regulation Skills Following the Intervention

Coding category	Number of participants
Emotion awareness	10
Awareness, clarity, and understanding	10
Emotion change	22
Cognitive reappraisal and meaning making	13
Modification of emotions	10
Writing as a coping strategy	8
Tolerance and acceptance of emotions	3
Readiness to confront emotions	3
Rumination	1
Emotion regulation support	2
Self-compassion	2
Total	22

Table 8

Results of Paired Samples T-Tests of Mental Health from Pretest to Posttest

	Pretest		Posttest		t(23)	p	Cohen's d
	M	SD	M	SD			
Emotional Symptoms [b]	64.00	11.95	63.04	12.40	-0.49	0.629	-0.10
School Problems	59.03	10.99	62.77	12.61	-2.01	0.056*	-0.41
Attitude to School	59.50	10.75	62.85	11.33	-1.45	0.161	-0.30
Attitude to Teachers	56.81	12.22	61.35	16.10	-1.26	0.221	-0.26
Sensation Seeking	55.03	12.53	55.85	11.16	-1.49	0.150	-0.30
Internalizing Problems	65.53	11.58	64.39	11.75	-0.33	0.743	-0.07
Atypicality	62.44	11.88	63.65	12.52	-1.42	0.169	-0.29
Locus of Control	62.75	12.44	60.96	12.12	-0.12	0.908	-0.02
Social Stress	62.03	9.81	60.23	10.23	0.12	0.906	0.02
Anxiety [c]	64.38	11.81	62.12	11.53	128.5	0.961	0.00
Depression	62.61	13.40	62.50	13.98	-0.56	0.582	-0.12
Sense of Inadequacy	60.13	12.51	59.08	12.99	0.26	0.796	0.05
Somatization	61.52	12.96	61.20	13.79	-0.12	0.908	-0.02
Personal Adjustment [a]	40.19	11.14	39.81	11.94	1.00	0.329	0.20
Relations with Parents [a]	43.88	10.25	45.42	10.57	-0.31	0.757	-0.06
Interpersonal Relations [a]	40.34	12.79	38.96	13.06	0.79	0.441	0.16
Self-Esteem [a]	38.19	15.00	38.39	14.39	1.01	0.325	0.21
Self-Reliance [a]	46.44	8.75	44.96	10.07	0.84	0.409	0.17
Anger Control	61.88	11.73	62.92	12.28	-0.69	0.495	-0.14
Mania	64.75	11.72	63.00	11.45	0.03	0.979	0.01
Test Anxiety	59.30	10.28	58.39	11.96	-0.66	0.540	0.08
Ego Strength [a]	38.72	11.83	40.39	11.73	-0.11	0.912	-0.02
Functional Impairment	64.75	10.63	64.27	10.65	-0.31	0.760	-0.06

Note. Shaded rows represent composite scores of the variables below. Higher scores indicate more symptoms of mental health problems reported.

**p < .05. *p < 0.10.

[a] For these variables, higher scores indicate more mental health-related protective factors

[b] Most global indicator of serious emotional disturbance, particularly internalized disorders. It is composed of four scales from the Internalizing Problems composite (Social Stress, Anxiety, Depression, and Sense of Inadequacy) and two scales from the Personal Adjustment composite (Self-Esteem and Self-Reliance).

[c] This variable did not meet parametric assumptions; the Wilcoxon signed-rank test statistic, *p* value, and effect size are substituted here.

Table 9

Results of Paired Samples T-Tests of Mental Health from Pretest to Follow-up

	Pretest		Follow-up		*t*(11)	*p*	Cohen's *d*
	M	*SD*	*M*	*SD*			
Emotional Symptoms [b]	64.00	11.95	58.57	15.81	1.78	0.103	0.51
School Problems	59.03	10.99	50.07	9.17	2.13	0.056*	0.62
Attitude to School	59.50	10.75	50.19	10.43	2.02	0.069*	0.58
Attitude to Teachers	56.81	12.22	53.00	10.42	-0.97	0.350	-0.27
Sensation Seeking [d]	55.03	12.53	47.86	6.41	29	0.142	0.44
Internalizing Problems	65.53	11.58	59.57	14.85	2.01	0.070*[c]	0.58
Atypicality	62.44	11.88	58.21	14.00	1.66	0.126	0.48
Locus of Control	62.75	12.44	55.43	12.56	1.51	0.160	0.44
Social Stress	62.03	9.81	57.07	12.69	2.56	0.026**[c]	0.74
Anxiety	64.38	11.81	61.43	14.86	1.12	0.288	0.32
Depression	62.61	13.40	58.57	18.27	1.83	0.094*[c]	0.53
Sense of Inadequacy	60.13	12.51	55.79	14.85	1.06	0.312	0.31
Somatization	61.52	12.96	59.00	19.03	1.40	0.189	0.40
Personal Adjustment [a]	40.19	11.14	45.43	14.97	-1.50	0.161	-0.43
Relations with Parents [a]	43.88	10.25	50.64	11.51	-2.04	0.067*	-0.59
Interpersonal Relations [a][d]	40.34	12.79	42.71	15.21	22.50	0.646	0.16
Self-Esteem [a]	40.82	15.00	43.91	17.02	0.89	0.395	-0.14
Self-Reliance [a]	46.44	8.75	47.29	11.24	1.80	0.100	0.52
Anger Control	61.88	11.73	58.29	13.90	1.56	0.147	0.45
Mania [d]	64.75	11.72	58.71	13.15	50	0.424	0.25
Test Anxiety	60.31	10.28	53.07	10.57	1.16	0.271	0.34
Ego Strength [a]	38.72	11.83	46.64	16.57	-2.13	0.057*[c]	-0.62
Functional Impairment [d]	64.75	10.63	60.86	13.92	63	0.063*	0.54

Note. Shaded cells represent composite scores of the variables below. Higher scores indicate more symptoms of mental health problems reported.
**p < .05. *p < 0.10.
[a] For these variables, higher scores indicate stronger mental health-related protective factors
[b] Most global indicator of serious emotional disturbance, particularly internalized disorders. It is composed of four scales from the Internalizing Problems composite (Social Stress, Anxiety, Depression, and Sense of Inadequacy) and two scales from the Personal Adjustment composite (Self-Esteem and Self-Reliance).
[c] Denotes a clinically significant change wherein the average score moved from within a range considered at-risk for mental health problems to with the average range compared to same-aged peers.
[d] Denotes a variable that did not meet parametric assumptions; the Wilcoxon signed-rank test statistic, *p* value, and effect size are substituted.

Table 10

Frequency of Codes Within Mental Health Changes

Coding category	Number of participants
Experiential outcomes	18
Positive experience	12
Social experience	12
Processing time	6
Changes in mood and emotion	14
Positive	14
Negative	2
Social changes	11
Changes in self-concept	10
Changes in self-esteem	6
Changes in self-awareness	4
Total	19

Figure 1

Participant Flow Diagram

Enrollment		Assessed for eligibility (n=91; n_1 = 41, n_2 = 50)

Excluded (n = 45; n_1 = 24, n_2 = 21)
- Not meeting inclusion criteria (n_1 = 7, n_2 = 5)
- Declined to participate (n_1 = 6, n_2 = 16)
- No response after initial contact (n_1 = 15, n_2 = 0)

n = total n
n_1 = n from the clinic site
n_2 = n from the camp site

Randomized
(n = 46; n_1 = 17, n_2 = 29)

Allocation (n=46)

Allocated to intervention (n=23; n_1=9, n_2=14)
- Received intervention (n=23; n_1 = 9, n_2 = 14)
- Did not receive allocated intervention (n= 0)

Allocated to waitlist (n=23; n_1 = 8, n_2 = 15)
- Received intervention (n=18; n_1 = 3, n_2 = 15)
- Dropped out before receiving intervention (n=5; n_1= 5, n_2=0)

Waitlist data available (n=4; n_1=4, n_2=0)
- Missing data at wait assessment due to absence (n=15; n_1=0, n_2=15)

Pretest (n=32)

Data available (n=18; n_1=9, n_2=10)
- Missing data due to absence (n=4; n_1=0, n_2 =4)

Data available (n=14; n_1=4, n_2 =10)
- Missing data due to absence (n=5; n_1=0, n_2=5)

Posttest (n=28)

Data available (n= 18; n1=8, n2=10)
- Missing data due to absences (n=4; n_1 = 0, n_2 = 4)
- Discontinued intervention (n = 0)

Data available (n=10; n_1=3, n_2=7)
- Missing data due to absences (n=7; n_1 = 1, n_2 = 6)
- Discontinued intervention (did not like activity) (n=1; n_1=1, n_2=0)

Follow-up (n=18)

Data available (n=12; n_1=7, n_2=5)
- Missing data at follow-up (Could not contacted) (n=10; n_1 = 1, n_2 = 9)

Data available (n=6; n_1=2, n_2=4)
- Missing data at follow-up (Could not be contacted) (n=11; n_1=2, n_2=9)

Interview (n=23)

Interviewed (n=16; n_1 = 8, n_2 = 8)
Could not be contacted (n=7; n_1=1, n_2=6)

Interviewed (n=7; n_1=1, n_2=6)
Could not be contacted (n=11; n_1=2, n_2=9)

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Chapter V

Discussion

The discussion section is presented in the following manner. The overall objectives and rationale are reviewed, along with the specific hypotheses for Studies 1 and 2. The findings from Study 1 and 2 are then discussed including the original contributions. Directions for future research are then discussed, followed by implications for practice.

Objectives and Rationale

The goal of the current dissertation was to evaluate the effectiveness of an expressive writing intervention for adolescent mental health and emotion regulation, including both intervention outcomes and implementation considerations. Study 1 assessed, through a scoping review, the current research landscape to determine the potential for identifying critical ingredients of expressive writing interventions that may be systemically under-considered. In the context of expressive writing, it has been particularly difficult to discern how implementation factors impact outcome measures and to determine the specific components contributing to positive outcomes (Sloan & Marx, 2018). Chen's (2014) conceptual framework for developing program theory provided a guide to consider how the joint effects of the intervention and how it is implemented contribute to outcomes.

Study 2 implemented expressive writing in both community and clinic contexts, seeking to ascertain emotion regulation related outcomes while also considering how implementation factors may have impacted study outcomes. Despite the increasing prevalence of mental health problems among adolescents (Rosen et al., 2021), less than one third of adolescents in need of support receive services (Georgiades et al., 2019). Investigating whether expressive writing

improves emotion regulation skills warrants further exploration, as emotion regulation skills are closely associated with mental health (Berking & Whitley, 2014; Compas et al., 2017). Yet, examining emotion regulation as an outcome of expressive writing interventions has yielded inconsistent results (Cheung et al., 2019; Wong & Mak, 2016).

Research Questions and Hypotheses

The purposes for Study 1, were to (a) assess the current state of implementation reporting in the school-based expressive writing literature, (b) identify areas where more rigorous reporting was needed, and (c) provide recommendations for future research and implementation reporting practices. Given the exploratory nature of this investigation, no formal hypotheses were posited.

In Study 2, an evaluation of an expressive writing intervention's impact on adolescents' emotion regulation skills and mental health were examined, and, the following questions were investigated: (a) What are adolescents' experiences of emotion regulation during the writing intervention? (b) What is the impact of an expressive writing intervention on emotion regulation skills? (c) What is the impact of an expressive writing intervention on youth's mental health? It was hypothesized that expressive writing would improve adolescent's emotion regulation skills and practices, and improve their social, emotional, and behavioural functioning, in line with previous research (Facchin et al., 2014; Kliewer et al., 2011; Ramirez & Beilock, 2011; Robertson et al., 2021; Shen et al., 2018; Wong & Mak, 2016).

Discussion of the Findings from Study 1

Study 1 consisted of a scoping review which was the first to examine implementation reporting in school-based expressive writing literature. The goal of the review was to identify

missed opportunities to examine implementation-related moderators and provide recommendations for future research. Overall, the results of this scoping review suggested that researchers who implement expressive writing in school settings have not consistently assessed certain key implementation domains such as dose received and fidelity. While recruitment, attrition, dose delivered, and contamination were commonly reported implementation domains, fidelity, provider engagement, and co-intervention were assessed in 15% of studies or fewer. The systemic under-reporting of implementation-related variables is problematic because without assessing implementation-related variables, it is difficult to make definitive conclusions regarding the effectiveness and feasibility of implementing expressive writing interventions as effect sizes may be over or underestimated (Chen, 2005; Durlak & DuPre, 2008; Steckler & Linnan, 2002).

Contributions of Study 1

The present scoping review added a unique contribution to the literature in that it was the first to assess the current state of implementation reporting within the school-based expressive writing literature. This review identified variability in reporting practices, indicating that implementation-related variables have received very little attention, that is, fidelity has been assessed in only two studies as has provider engagement. Study 1 also contributed by identifying consistent gaps in implementation reporting practices, shedding light on important areas for future research. This review was the first to identify that only a single study assessed all minimum recommended implementation-related variables, indicating a systemic gap within the field in terms of examining implementation-related variables. Overall, this review highlighted the need for clear, consistent, and comprehensive measurement and reporting of implementation-

related variables within the expressive writing field. Finally, recommendations were provided for more rigorous reporting, that can be used to strengthen the evidence base for expressive writing interventions going forward.

Discussion of Findings from Study 2

Equipped with a complete picture of implementation-related variables that have been systemically overlooked, that it, considered in only two to three studies, within the expressive writing literature, Study 2 aimed to address the gaps identified in Study 1 while also assessing the impact of expressive writing on adolescents' emotion regulation skills and mental health. While expressive writing holds promise as an effective intervention for adolescents, previous research's heterogeneity has limited definitive conclusions from being drawn (Travagin et al., 2015). Study 2 sought to account for implementation factors in addition to examining intervention outcomes. Study 2's quantitative findings revealed positive changes in emotional, social, and school functioning. After the intervention, participants exhibited improved attitudes toward school, reduced internalizing problems (i.e., less social stress and fewer symptoms of depression), better relationships with parents, improved ego strength, and reduced functional impairment. A strength of Study 2 was the mixed-methods approach, wherein interviews further clarified the quantitative outcomes. Qualitative results were in line with quantitative results, revealing that participants reported more positive experiences, positive affect, social changes, and changes in self-concept following the intervention.

Additionally, Study 2 is the first to demonstrate that expressive writing leads to improved emotion regulation skills, particularly decreased emotional suppression in a sample of adolescents. The delayed effects observed were consistent with prior research, suggesting that

beneficial outcomes emerge over time (Guo, 2022). Qualitative results revealed that all but one participant reported an improvement in their ability to modify emotions. Overall, expressive writing appears to be a valuable tool for promoting mental health among underserved adolescents.

Implementation-related variables

A central focus of this dissertation was considering both implementation factors and intervention-related factors when conducting evaluation research. Study 1 identified several missed opportunities to obtain a nuanced understanding of intervention outcomes. In line with Chen's (2014) conceptual framework, Study 2 gave special consideration to the implementation variables identified and how they may have influenced study outcomes, including, for example, the intervention facilitators and the intervention settings. To address the gap in reporting the minimum recommended implementation domains (i.e., recruitment, reach, dose delivered, dose received, and fidelity), Study 2 ensured all five domains were reported in the present study.

Study 1 identified that in 36% of studies, it was unclear whether adolescents who found the intervention unhelpful, unpleasant, or harmful left the research study (Travagin et al., 2015). Study 2 therefore illuminated the reasons why participants dropped out. The process evaluation results in Study 2 revealed that participants dropped out primarily from the waitlist. It is possible that the youth moved on to other programs and services while waiting, they improved without services, or they lost momentum to engage in help-seeking. Future researchers may consider offering an alternative program for those on the waitlist, such as a mindfulness-based program or other mental health promotion activity. It will be important for future researchers to choose

control group activities that do not involve writing so as not to inadvertently introduce contamination into the research.

Another area where Study 2 sought to fill a gap was the assessment of fidelity and participant engagement. When researchers monitor fidelity, in combination with delivering an adequate dose, and ensuring the control group does not experience contamination, effect sizes tend to be two to three times larger than when fidelity, dose, and contamination are not assessed (Durlak & DuPre, 2008). Study 2 used observations rather than self-report measures and based the estimate of fidelity over multiple sessions. Study 2 also employed several measures of participant engagement including self-report ratings, observations, analysis of writing, and attendance. In one cohort, expressive writing participants did not appear to be engaged in expressive writing which is potentially problematic because participants who are not engaged may not actively participate in the intervention (Mendelson et al., 2013). In addition, there were difficulties adhering to the implementation checklist at the camp site. Results revealed important considerations regarding the context where expressive writing was implemented. It may be that the participants perceived the camp setting to be more casual than the clinic, and consequently did not feel obligated to attend all sessions or participate keenly in the writing intervention. It is also possible that the camp setting was not conducive to a highly structured activity such as writing, as many camp activities are typically boisterous, as described by the camp staff. Another possibility is that differences in the personal styles of the facilitators at the two sites led to differences in outcomes. When facilitating interventions for adolescents, it will be important to consider how expressive writing can be made meaningful and engaging for all youth who take part.

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The findings from Study 2 have provided novel insights into several aspects of the intervention that participants reported to be meaningful and engaging. Past researchers have found preliminary evidence that when participants are not engaged in expressive writing (e.g., they do not write about a meaningful topic or perceive it as akin to a homework assignment), they are less likely to experience a benefit (Banyard et al., 2015). In Study 2, interviewees identified several factors they perceived to be beneficial and engaging: the social support of the group, the non-judgemental atmosphere, and time and space for reflection. Future expressive writing researchers and facilitators may consider giving careful attention to the context where expressive writing is implemented and how it is presented. Indeed, it will be important for future researchers to establish strong collaborative relationships with the organization where the intervention is being implemented, as well as ensuring the intervention fits within the community norms (Chen, 2014).

Contributions of Study 2

Study 2 was the first to examine emotion regulation skills and practices as an expressive writing intervention outcome, among a population of adolescents. Quantitative results from Study 2 contribute to the field by demonstrating that expressive writing significantly reduced emotional suppression. Qualitative results further identified that adolescents gained skills in emotion awareness, cognitive reappraisal, emotion modification, and self-support following the intervention. The gains in emotion regulation skills and practices evidenced by the adolescents in Study 2 adds to a growing body of research demonstrating that expressive writing can be an effective intervention for improving emotion regulation (Harvey et al., 2018; Wisco et al., 2013).

Findings from Study 2 identified several novel intervention mechanisms that have been previously unexplored and unsubstantiated within the adolescent expressive writing literature. Qualitative results identified that adolescents benefitted from social contact, behavioural activation, behavioural rehearsal, and the therapeutic space provided by the intervention. Study 2 has also contributed by identifying important areas for future research, as it will be important to ascertain the unique contribution of each novel mechanism identified to intervention outcomes.

Directions for Future Research

In terms of intervention-related factors, researchers can improve the evidence base for expressive writing interventions by reporting the minimum implementation domains, assessing implementation domains that have been overlooked within the expressive writing literature, assessing the impact of adaptations, and improving the clarity and consistency of reporting. The rigour of implementation reporting could be increased by reporting the minimum recommended domains: recruitment, reach, dose delivered, dose received, and fidelity (Cargo et al., 2015; Saunders et al., 2005; Steckler & Linnan, 2002). While not every study will collect information on each implementation domain due to limitations in the resources, time, and personnel needed to collect process evaluation data, researchers should strive to meet the minimum suggested requirements to ensure their results have enough context to be accurately interpreted (Steckler & Linnan, 2002). In addition, if space constraints are a concern, implementation information can be reported as supplemental materials or in an accompanying manuscript focusing on the process evaluation rather than the outcomes evaluation (Feagans Gould et al., 2016). Consistent reporting of minimum implementation domains will allow researchers to answer questions such as what

the optimal dose of expressive writing is and whether it is feasible to implement expressive writing within community settings with high levels of fidelity.

Further research is also needed regarding the potential moderating effects of provider engagement, participant engagement, and fidelity on expressive writing outcomes, as these domains have not been examined regularly as potential moderators within expressive writing meta-analyses. Provider and participant engagement are worthy of future study as participant engagement, provider engagement, and fidelity have all been demonstrated to moderate intervention outcomes (Durlak & DuPre, 2008; Garvey et al., 2006). Assessing fidelity and provider and participant engagement will allow researchers to understand the potential importance of these implementation domains for producing positive outcomes (Feagans Gould et al., 2016). Other potential moderators worthy of future study include social contact, behavioural activation, behavioural rehearsal, and the therapeutic space, which were all promising mechanisms elucidated from Study 2 that have previously been examined in only a couple of studies, and in the case of behavioural activation and the therapeutic space, not at all, within the expressive writing literature for the adolescent population. By better understanding the key ingredients of expressive writing, researchers will be closer to answering the elusive questions of how expressive writing works, and for whom.

Implementation assessment could also be improved by increasing the consistency and clarity of reporting of implementation domains. Reporting all implementation-related information within the methods and results sections and defining the terminology used or referring to definitions will make implementation information easier to find and will help prevent confusion in interpreting implementation-related information. When conducting RCTs, following

the CONSORT standards including using a CONSORT flow diagram will help ensure the appropriate aspects of implementation are assessed and reported (Turner et al., 2012). Reporting implementation information clearly and consistently will facilitate the use of implementation information.

It is possible that in other studies where the intervention is implemented by people other than research staff, such as teachers or other school professionals, levels of fidelity may be lower because teachers are not as intimately familiar with the program components or may not be as invested in the outcomes as research staff (Feagans Gould et al., 2016). Expressive writing is presently being implemented on a relatively small scale, typically by researchers. If expressive writing interventions are to be scaled up in the future, it would be helpful to understand whether they can easily be implemented by persons other than the researchers who develop them, such as teachers.

Implications for Practice

Ultimately, more rigorous reporting of the process by which expressive writing interventions are implemented will facilitate their use in community settings and inform evidence-based practice. Reporting implementation-related information provides a comprehensive description of the intervention in context. Such a comprehensive description allows an intervention to be implemented consistently and effectively across settings (Feagans Gould et al., 2016; Saunders et al., 2005). Clinicians may rely in part on research to determine whether a particular intervention is evidence-based. Assessment of implementation is an essential part of evaluating whether an intervention is effective (Durlak, 2015; Feagans Gould et al., 2016; Gearing et al., 2011). Without adequate information on implementation, clinicians do

not have all the information needed to make an informed decision about an intervention's feasibility and outcomes. Study 2 highlighted several important factors related to the intervention environment and context. In Study 2, a distinctive factor identified was the role of a therapeutic environment as a mechanism within expressive writing interventions. The participants in Study 2 underscored the significance of the therapeutic environment offered by the intervention. Apart from the act of writing itself, the adolescents expressed the positive aspects of participating in a enjoyable activity, forming connections, and receiving support. For future researchers, it might be worthwhile to place special emphasis on establishing secure and supportive environments, and to formally assess intervention fidelity and participant engagement as integral components of a process evaluation.

Overall, the present program of research adds to a growing body of work demonstrating that expressive writing conveys a significant benefit to internalizing problems, social functioning, school-related functioning, self-concept, emotion awareness, emotion modification skills, positive affect, and social contact. Study 2 was the first to demonstrate that expressive writing is effective in improving emotion regulation outcomes for adolescents experiencing symptoms of mental health problems. Expressive writing shows promise as a low-cost and effective intervention to promote the wellbeing of adolescents who are vulnerable to developing mental health problems. Worldwide, undiagnosed and untreated mental health problems and lack of accessibility to mental health care are major public health issues (Arango et al., 2018). The few resources required and brief nature of expressive writing make it an ideal intervention to be used in settings where resources are sometimes limited, such as schools or outreach programs in the community, to address the mental health needs of adolescents (Winslett, 2005).

As the field of expressive writing continues to grow, continued assessment of implementation will support the development of a robust evidence base regarding the utility and feasibility of expressive writing, to inform clinicians who are responsible for selecting and implementing social-emotional interventions to reach underserved adolescents. The emerging state of the expressive writing field presents a unique opportunity to carefully reflect on key ingredients and mechanisms behind expressive writing, thereby strengthening expressive writing as a promising intervention to promote adolescents' mental health.

Chapter VI

Final Conclusion and Summary

The objectives of this dissertation were to investigate the intervention effectiveness of an expressive writing intervention for mental health and emotion regulation, for the adolescent population. There have been mixed outcomes related to mental health following expressive writing interventions for adolescent populations, and emotion regulation had not previously been examined as an outcome for this population (Travagin et al., 2015). Further, this dissertation placed a particular focus on implementation considerations when conducting expressive writing interventions in schools and community-based organizations.

To address the objectives of this dissertation, Study 1 evaluated, through a scoping review, the current state of implementation reporting in the school-based expressive writing literature, including areas where more rigorous reporting was needed, and provided recommendations for research and practice. Study 1 identified several areas of rigour including recruitment, attrition, and dose delivered. Only a single study included in the review reported all five minimum domains of implementation. Study 1 further identified several implementation-related domains where more rigorous reporting was required, specifically, the areas of fidelity, provider engagement, and co-intervention were identified, highlighting systematic gaps in reporting within the expressive writing field. Recommendations included reporting all minimum recommended domains, using CONSORT flow diagrams, and making use of supplemental materials as needed.

Study 2 assessed, through an evaluation of an expressive writing intervention, adolescents' experiences of emotion regulation during the intervention, the impact of the

intervention on emotion regulation skills, and the impact of the intervention on mental health. Participant experiences of emotion regulation during the intervention revealed they gained awareness of emotions, changed their emotions, and engaged in self-support as well as receiving support from others. In terms of the impact of the intervention on emotion regulation skills, quantitative findings showed a significant decrease in emotional suppression at follow-up, and qualitative findings revealed that all but one participant reported gains in the ability to modify emotions and about half of participants reported gains in emotion awareness. In terms of the impact of the intervention on adolescent mental health, quantitative findings revealed significant improvements in emotional, social, and school-related functioning. Qualitative results revealed positive experiential outcomes, increased positive affect, positive social changes, and positive changes in self-concept. Overall, the findings from this dissertation indicate that expressive writing can be a simple yet effective means for improving adolescent's emotion regulation and mental health.

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Appendix A

Waitlist Study Design

Intervention Group

| Pretest Assessment | → | **Writing** | → | Posttest Assessment | → | Regular activities | → | Follow-up Assessment | → | |

Waitlist Control Group

| Wait Assessment | → | Regular activities | → | Pretest Assessment | → | **Writing** | → | Posttest Assessment | → | Follow-Up Assessment |

Appendix B

Menu of Expressive Writing Options (Adams, 2013)

1. Sentence Stem. A sentence-completion process. Fill in the blank with a word or phrase. (e.g., Right now I feel _____).

2. Structured Write. A series of Sentence Stems grouped and sequenced to reveal consistently deepening layers of information and awareness.

3. Clustering. Visual free-association from a central word or phrase. Lines and circles connect key thoughts and associations to the central core.

4. Lists of 10. A list of 10 items, many of which will probably be repetitions, on a predetermined theme or topic. Repetition is an important part of the process. Topics can be about any current issue (for example: 10 Things I'm Sad About; 10 Things I Need or Want to Do; 10 Places I Would Like to See).

5. Alphapoem. Write the alphabet, A-Z, or any collection of letters, vertically down the side of a page. Then write a poem in which each successive line begins with the next letter.

6. Captured Moments. Vignettes capturing the sensations of a particularly meaningful or emotional experience. Written from the senses with strong descriptors. Captured Moments of beauty, joy, blessing, calm can add balance, hope and perspective to a challenging time.

7. Unsent Letters. A metaphoric communication to another that is written with the specific intention that it will not be shared.

8. Character Sketch. A written portrait of another person or of an aspect of the self. Can also be written about emotions by personifying an emotion and giving it a characterization — an appearance, a style of dress, a personality and temperament.

9. Dialogue. A metaphoric conversation written in two voices. Anyone or anything is an appropriate dialogue partner. There is no constriction by time, space, physical reality or literal voice.

10. Perspectives. An alteration in point of view that provides a different perspective on an event or situation.

11. Springboard. A free-write with a prompt (the original instructions). Starting a free-write with the smallest structure of a question, thought or topic can focus and frame the writing session.

Appendix C

Pongo Teen Writing Prompts

<u>Sometimes I Feel Like</u>

Sometimes I feel like _____

      (maybe an ANIMAL, like a woodpecker or a giraffe???)

Because _____

_____

Because _____

_____

Because _____

_____

Sometimes I feel like _____

      (maybe an OBJECT, like an exploding volcano or an unread book???)

Because _____

_____

Because _____

_____

Because _____

_____

Sometimes I feel like _____

      (maybe a kind of WEATHER and a PLACE, like a sunny day at the beach ???)

Because _____

_____

Because _____

_____

Because _____

_____

Sometimes I feel like _____

Because _____

_____

Because _____

_____

Because _____

_____

Inside Me

Inside me you will find someone who dreams of _____ (of being loved and respected, of

butterflies drying their wings in the morning, ???)

Inside me you will find someone who is like a lonely star because _____ (I'm cold without the ones who love me, it

takes a long time for my light to reach you, ???)

Inside me you will find someone who is like a winter storm when _____ (I need to protect my little sister, ???)

Inside me you will find someone who is burning to show you _____ (that I am that father and that son, that I

can change if you just believe in me, ???)

Inside me you will find someone who is like a _____ (a tiger, ???)

Inside me you will find someone who is like a _____ (an empty room, ???)

Inside me you will find someone who is like a _____

Inside me you will find someone who is like a _____

Inside me you will find someone who wants to _____

Inside me you will find someone who doesn't care about _____

Inside me you will find someone who stumbles when _____

Inside me you will find someone who is determined to _____

I Just Thought You Should Know

Dear _____ (Mom, Dad, Sister, Grandma, old friend, ???),

I just thought you should know what I'm doing now.

I am a _____ (strong, angry, happy, lonely, ???) person

who spends a lot of time _____ (dancing, watching movies, hanging out with my

friends, ???).

I just thought you should know how I'm feeling.

I am _____ (happy, nervous, depressed, ???)

because _____.

I just thought you should know what I've been through.

Since the last time I saw you, I have _____ (grown, suffered, changed, ???) so much.

The time that I _____ was especially important to me.

I just thought you should know what I wish for the future.

I hope that _____.

I just thought you should know what I don't miss about you.

I am glad I don't have to worry about _____ anymore.

I just thought you should know what I miss a lot.

I miss the way (you, we) used to _____.

I just thought you should know that _____.

You Don't Know Me

You see that I _____ (fight,???)

You see that I _____ (do what people want, ???)

But you don't know me

You would know me if …

You knew how hard it was to _____ (hold in my anger, ???)

You knew how I feel sometimes that _____ (no one cares, ???)

You knew how _____ (my dad walked on me, ???)

You see that I _____ (swear,???)

You see that I _____ (smoke,???)

But you don't know me

You would know me if …

You knew how I _____ (express myself through art, ???)

You knew how I _____ (like to cook, ???)

You knew how I _____ (take care of my younger sisters, ???)

Courage and Fear

In my life I've known Courage.

We met when I _____ (first stepped between my mom and dad fighting, was seven and taking care of my brother alone, ???).

Nowadays Courage is _____ (walking ahead of me, abandoning me, ???).

I find Courage when _____ (I'm out on the streets, I'm sitting before the judge, ???).

In my life I've known Fear.

We met when I _____ (took my first hit, was six and left alone at home, ???).

These days Fear is _____ (creeping up behind me, sending my heart racing all the time, ???).

Fear finds me when _____ (my mom flies into a rage, someone tells me I've done something wrong, ???).

I've learned that Courage and Fear are different.

When Courage tells me _____ (to leave my friends behind, Don't back down!, ???),

Fear says _____ (you'll never make it on your own, be the first to throw the punch, ???).

Usually I listen to _____ (Courage, Fear, my gut, ???).

I wish _____ (my Courage didn't look so much like Fear, I could get others to listen to my Fear, ???).

I wish _____ .

When Change Comes Suddenly

When change comes suddenly

You chase after it, or it follows you

You grab it, or it grabs you

And you hold on, or are held by

Memories

Emotions

This is about my memories and emotions

The things I've heard, smelled, touched, tasted

The things I've seen

The things I've imagined

The things I've felt

The way I feel today

The things I've heard...

_____

_____

_____

The things I've smelled...

_____

_____

_____

The things I've touched...

_____

_____

_____

The things I've tasted...

_____

_____

_____

The things I've seen...

_____

_____

_____

The things I've imagined...

_____

_____

_____

The things I've felt...

_____

_____

_____

The way I feel today...

_____

_____

_____

Appendix D

Fidelity Checklist

Implementation & Fidelity Checklist

Your Name:_____ Date:_____ Session #_____

Adherence:	Facilitator accurately delivers program elements	Yes	No
Preparation	1. Materials prepared in advance		
Structure	2. Lessons are structured in the following sequence: Lead-in discussion, Writing Intervention, Wrap-up		
	3. The specific writing instructions are provided (see volunteer guide for specific instructions)		
	4. Participants are provided with 10-15 minutes to write		
Facilitation	5. The reason for writing is clearly explained through group discussion		
	6. Provides suggestions and examples of topics of writing		
	7. Circulates throughout the room and checks-in as needed		

		N/A	Yes	No
Provides one-on-one support	8. Problem: emotional expression Applicable sessions: 2-3 Solution: Encouraging the participant to elaborate on events by asking open-ended questions			
	9. Problem: Affect Labelling Applicable sessions: 3-4 Solution: Asks open-ended questions about emotions			
	10. Problem: Cognitive Reappraisal Applicable sessions: 4-5 Promotes reflection and interpretation by using the provided prompts			

	11. Problem: Difficulty with mechanics of writing (spelling, grammar) Applicable sessions: all Solution: Provides writing prompts and alternative options (pogo; writing menu) if needed			
Develops Relationship	12. Provide encouragement and positive feedback without criticizing			
	13. Expresses that their writing is valuable			
	14. Actively listening to what participants have to say			

Participant engagement: Please comment on your personal impression of the overall level of participant engagement (satisfaction, enjoyment, perceived relevance).

1	Poor	
2	Adequate	
3	Excellent	

Comments:

Appendix E

Interview Schedule

SECTION 1: MEANING AND EXPERIENCE OF EXPRESSIVE WRITING

1) In your own words, what does the expressive writing intervention experience mean to you?
2) Please tell me how you felt when you were writing about your story? In other words, how did you feel both emotionally and/or physically?
3) Do you see a difference in the way you first saw yourself before and after participating in the expressive writing activity? If so, in what way?
4) Please share with me your experience in the moment of writing in the journal.
   a) Both emotionally and/or physically?
5) How did you feel about sharing your story with your peers?
   a) [if does not apply go directly to Q # 7]
6) Do you think your story had an impact on your peers during the peer discussions?
   a) Could you give me an example?
7) Do you think your story could matter to others?
   a) Could you give me an example?
8) Since you wrote your story, do you approach situations differently?
   a) Could you give me an example?
9) Looking back to when you took part in the expressive writing intervention, do you feel you benefited from the experience?
   a) Could you explain in what way? [if no benefit, go to question # 11 directly]
10) Have your peers' stories affected or touched you in any way?
   a) Can you explain how that is?
11) What did you learn about yourself?
12) Did you find writing about yourself difficult?
   a) In what way?

SECTION 2: INDIVIDUAL OUTCOMES QUESTIONS

Emotion Regulation Before writing

1) Think back to [months before the writing program], can you remember an event where you experienced strong feelings?
   Can you tell me about this event?
   Back then, were you able to identify what you were feeling?
   a) [if yes] can you tell me how you thought you were feeling at that time?

2) Think back to [months before the writing program], can you remember an event where you experienced negative feelings?
   Can you tell me about this event?

What was it like, at the time, dealing with these negative feelings?

3) Did your negative feelings change?
   a) [if yes] How did that happen?

Emotion Regulation After Writing

4) Thinking back to [months after the writing program] can you remember an event when you experienced strong feelings?
   Can you tell me about it?
   Can you identify what you were feeling at that moment?
   a) [if yes] can you tell me how you were feeling at that time?

2) Think now to [months after the writing program], can you remember an event where you experienced negative feelings?
   Can you tell me about this event?
   What was it like dealing with these negative feelings?
   a) Can you give me an example?

3) Did your negative feelings change?

   a) [If yes] How did that happen?

Mental Health Before Expressive Writing

1) During [months before the writing program] did the way your teachers were treating you change?
   [If yes] Can you give me an example?
   [If yes] What do you think brought about this change?
2) Thinking back to [months before the writing program] can you think of a negative experience you had at school?
   Can you tell me about it?
3) In the [months before the writing program] can you think of a time you had strange feelings or experiences other people would think of as odd or unusual?
   Can you give me an example?
4) During [months before the writing program] can you think of a time when you were feeling really down?
   a) Can you tell me about it? What was that experience like?
5) Tell me about the [months before the writing program] – who were you hanging out with at that time?
   Can you think of a time you had fun together? Can you tell me about it?
   Were there any times when you weren't getting along? Can you give me an example?
6) Thinking back to [months before the writing program], can you think of a time when you felt stressed out by your friends, for example, being excluded? Can you tell me about it?

7) Thinking back to [months before the writing program], can you walk me through your process for getting ready and taking tests?
How did you feel at that time?

8) Most people have times when they feel nervous or worried. During [months before the writing program], what kinds of things did you worry about?
Can you give me an example?

9) Can you think of some times during [months before the writing program] you felt successful or proud of yourself? Can you tell me about it?
How about a time when you felt like you weren't good enough? Can you tell me about it?

10) Thinking back to [months before the writing program], can you think of a time when you had an unusual amount of energy?
Can you give me an example?

11) Most people have some times when they feel so stressed they were sick (for example, getting headaches, feeling tense, or getting stomach aches).
Can you remember any times during [months before the writing program] that you were sick with stress? Can you give me an example?

12) Thinking about [months before the writing program], what were some things you liked about yourself at that time? Can you give me an example?
Was there anything you didn't like about yourself? Can you give me an example?

Mental Health After Expressive Writing:

13) During [months after the writing program] how were your teacher(s) treating you?
Can you give me an example?

14) Thinking about [months after the writing program] have your negative experiences at school changed over the past year?
[If yes] What do you think brought about this change?

15) In the [months after the writing program] can you think of a time you had strange feelings or experiences other people would think of as odd or unusual?
Has this changed since the writing program? Can you give me an example?

16) What has your mood been like recently?
Has your mood changed in [months since the writing program]?
[If yes] Why do you think that might have been?

17) Tell me about your friendships lately?
Have you been getting along any differently with your friends during [months after the writing program]?
[If yes] Can you give me an example?

18) Thinking about [months since the writing program] have you noticed any change in how upset and stressed out your friends make you feel?
[If yes] Can you give me an example?
[If yes] What do you think brought about this change?

19) Thinking now to [months after the writing program], has your process for getting ready and taking tests changed or felt any different?

20) During [months after the writing program], have your nervous and worried feelings changed in any way?
   [If yes] Can you describe this change?

21) Since taking part in the writing program, can you think of an example of a time when you felt proud of yourself?
   Was there anything new or different about this experience, compared to [months before the writing program]?
   [If yes] Can you give me an example?

22) Thinking about [months after the writing program], have your energy levels changed in any way?
   Can you give me an example?

23) In the past few months, have you noticed any changes in how sick you feel with headaches, tension, or stomach aches?
   [If yes] What do you think brought about this change?

24) What are some things you like about yourself? Can you give me an example?
   Have the things you like about yourself changed lately?
   Why do you think that might be?

Overall:

25) Do you think anything about you changed after the writing program?
   What do you think brought about that change?

26) Did you notice any difference in how you have felt in [months after the writing program]?
   Can you give me an example?

27) Since taking part in the writing program, have you been acting any differently than usual?
   Can you please describe this?

28) In [the months after the writing program] have you been thinking differently about anything?
   Can you give me an example?

Appendix F

Sociodemographic Questionnaire

Please answer the following questions based on your participation in this study. Thank you!

1. Age: _____

2. What is your date of birth (dd/mm/yyyy)? _____

3. What gender do you most identify with?

o   Male
o   Female
o   Transgender
o   Gender diverse
o   Other identity (please state): _____
o   Prefer not to say

4. What language(s) do you speak? Please also indicate % (e.g. 50% English 50% French).

o   Primary Language: _____   _____%
o   Second Language (if applicable):   _____   _____%
o   Third Language (if applicable):   _____   _____%

6. Where were you born?
o   Canada
o   Outside of Canada, please specify: _____

7. Have you ever written about important thoughts and emotions in a journal, diary, blog, etc.?

o   Yes
o   No

9. Do you currently write in a journal, diary, blog, etc.?

o   Yes   If yes, how often do you write: _____
o   No