Secondary analysis: Bounce Back & Thrive! a Canadian resiliency building program

by

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Abstract

Resilience, or one's ability to respond to significant threat and achieve positive adaptation, is a highly researched and continually developing field of research. Due to the fact that approximately 32% of Canadians reported experiencing a history of physical, sexual, and/or exposure to intimate partner violence, and because roughly 30% of those that experience an adverse childhood event later develop psychopathology, programs to protect these individuals and build resilience are needed. One effective way to foster resilience are resilience building programs. Although they have been developed around the world, programs specific to the diverse Canadian population are sparse. One promising Canada-specific resilience building program is Bounce Back & Thrive! (BBT), a 10-week skills training program for parents with children 8 years of age and younger. The goals of the program are to build resiliency skills in parents and to subsequently use these skills to help their children build resilience to face life's stressors. Based on the principles of the Penn Resilience Program (PRP), BBT has been operating since 2012 and has achieved promising results, but has not been independently analyzed. Therefore, the purpose of the current project was two-fold: (1) to examine the construct validity of the Bounce Back Subscale (BBS) created by BBT to assess parental resilience by utilizing exploratory factor analysis; and (2) to conduct an independent analysis of the evaluation data to determine the effectiveness of BBT. BBT program developers collected pre- and post-measures of parental stress, symptoms of depression, and resilience, which will be utilized in these analyses. A total of 440 participants completed BBT, and a battery of measures were included in the analyses. Women and participants with higher education experienced greater gains in resilience than male participants and those with lower education. Parents that were currently parenting their children versus those that were not currently parenting experienced greater gains in terms of stress and resilience. Finally, participants that reported higher

levels of stress pre-BBT were more likely to experience clinically significant changes in resilience. Future studies are needed to examine the psychometric properties of the BBS, to recruit more fathers to re-evaluate the effectiveness of BBT for male participants, and to examine the efficacy of BBT compared to controls, the effects on participant's children and whether the effects persist over time.

Preface

This research is an original work by Rashell Wozniak. The research project, of which this thesis is a part, received research ethics approval from the University of Alberta Research Ethics Board, "REACHING IN… REACHING OUT AND BOUNCE BACK AND THRIVE! (BBT) RESILIENCE PROGRAMS: A RETROSPECTIVE SECONDARY ANALYSIS", No. Pro00097839, October 8, 2021.

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Introduction

Resilience allows people to face life's inevitable hardships, and 'bounce-back' from such adversities. It is a fundamental response pattern between two conditions: a significant threat, and positive adaptation (Masten & Cicchetti, 2016). An effective way to foster and develop skills associated with resilience are resilience-building programs (e.g., Gillham et al., 2008; Kummabutr et al., 2017; Liddle & Hogue, 2000; Smith et al., 2018). There are multiple approaches these programs may take to foster resilience in youth including family-based, school-based, and/or parental-prevention programs. Within each of these program types, there are populations that may or may not be targeted. Specifically, there are universal programs that target all youth or families regardless of risk, and there are targeted approaches that focus on youth or families that are considered at-risk (Brunwasser et al., 2009). Based on the recent research, it appears that targeted approaches are the most effective in increasing resilience, and decreasing mental health concerns (Horowitz & Garber, 2006; Merry et al., 2004; Stice et al., 2009).

Resilience building programs have been developed around the world, and although these programs are implemented globally, such programs are sparse in Canada. Due to the uniqueness of Canada's history (Matthews, 2014) and the diversity of the Canadian population (Statistics Canada, 2016), determining the effectiveness of a resilience program for this population is essential. Furthermore, due to the large percentage (approximately 32%) of Canadians that have experienced physical, sexual, and/or exposure to intimate partner violence (Afifi et al., 2014, 2016), and because approximately 30% of all mental health problems are related to childhood adversity (Kessler et al., 2010), programs that support the resilience of children and youth are essential. A specific Canadian resilience-building program that utilizes this approach is Bounce

Back & Thrive! (BBT; Pearson & Kordich Hall, 2016). BBT is a 10-week resiliency skills training program designed for parents with children 8 years old and younger. The goal of BBT is to build skills in parents to help their own children build the resilience necessary to handle life's hardships and make use of these challenges as opportunities for growth. BBT, developed based on the Penn Resilience Program (PRP; Gillham et al., 2008), is a manualized resilience-building program that may be a cost effective and Canada-specific method. BBT is adapted from the Reaching In… Reaching Out (RIRO) resiliency skills training, an evaluated community-based program for child-serving professionals promoting resilience in children and adults since 2002 (Kordich Hall & Pearson, 2016). Although BBT may be an effective program for at-risk family and youth, the program has only been evaluated by the program developers. Because of this, it is an essential first step for the program to be evaluated independently in order to determine the effectiveness of their program in increasing resiliency skills.

Literature Review

In the following sections, resilience, related mental health constructs (i.e., depression and stress), resilience building programs in general, and the resilience building program of interest will be discussed in detail. This information will lay the foundation for the presented secondary analysis. It will also highlight the limitations in current research, and why BBT may be a promising intervention for Canadian families.

Resilience

Fundamentally, resilience is a pattern of responses involving the relationship between significant threat and positive adaptation (Masten & Cicchetti, 2016). It is the capacity to withstand and bounce back from life challenges (Masten & Cicchetti, 2016). As such, a key requirement of resilience is the presence of risk, promotive, and protective factors (Fergus &

Zimmerman, 2005; Masten & Cicchetti, 2016). Risk factors are situations or systems that increase the likelihood of youth developmental problems (e.g., family conflict, lack of parent-child bonding, stressors, parental depression; Kumpfer & Alvarado, 2003). Risk factors also include genetic, psychological, environmental, and/or socioeconomic factors that increase the likelihood of adjustment problems (Luthar & Cicchetti, 2000). As a result, risk factors may stem from within or from outside of the individual (Schoon, 2021). Conversely, promotive factors are associated with better outcomes at any level of risk allowing for adaptive success, and protective factors play a role during high adversity or risk (Masten, 2018; Masten & Cicchetti, 2016; Sameroff, 2000). In other words, promotive factors function as main effects, and protective factors function as moderators on risk/adversity resulting in a larger affect when adversity levels are high (Masten & Cicchetti, 2016). In sum, these factors result in either a positive outcome, or they reduce or allow for avoidance of a negative outcome (Fergus & Zimmerman, 2005).

Resilience is the process of overcoming negative effects of risk exposure, coping successfully, and avoiding the negative trajectories associated with risks (Luther et al., 2000; Rutter, 1985). Although resilience involves successful coping, as a whole it goes beyond coping, and can be understood as the ability to utilize strengths and resources to enable recovery from life's challenges and achieve positive growth (Walsh, 2016). Consequently, key to the definition is the existence of a stressor since resilience can only be demonstrated in the presence of a stressor and cannot be shown during typical development (Luthar et al., 2000). In addition, as Rutter (2006) notes, resilience or resistance to adverse outcomes can also come from physiological and psychological coping processes. This highlights that there can be neuroendocrine effects during stress adaptation, as well as cognitive and/or emotional mechanisms that lead to successful coping (Rutter, 2006). Resilience can also be witnessed long

after adverse events (Rutter, 2006). In other words, resilience may be seen in later recovery in adverse experiences, rather than an initial inability to recover (Rutter, 2006). Specifically, early patterns of adjustment influence later adjustment, and early risk experiences influence experience of risk later in life (Schoon, 2021).

Historically, resilience was conceptualized as a trait or characteristic of an individual (Connor et al., 2003) or as something that is present in every situation (Fergus & Zimmerman, 2005). This trait-oriented approach assumes that resilience is primarily determined by a specific personality type that enhances one's ability to adapt to stress and adversity (Connor et al., 2003; Ong et al., 2006). Therefore, it was described as an intrinsic and stable attribute of a person, but this approach and understanding of resilience has received little empirical support (Bonanno & Diminich, 2013). Personality does play an important role in resilience, but instead of being conceptualized as a single specific trait, personality acts as one of the many risk or promotive factors that allow one to bounce back from stress and thus demonstrate resilience (Bonanno & Diminich, 2013).

More recently, there has been a shift to process- or outcome-oriented approaches to understanding resilience. Specifically, resilience is described as a complex interplay of systems (e.g., the individual, family, community, and society; Masten & Barns, 2018). Not only does resilience include the systems within an individual (e.g., the human immune system), but it also includes the families, economies, ecosystems, and organizations surrounding the individual (Walsh, 2021). Resilience only exists when there has been a perturbation that is stressful to one (or more) interdependent systems (Ungar, 2021). This destabilization threatens the capacity of the system to function, which results in the system either persisting, resisting, recovering, adapting, or transforming (Ungar, 2021). These resulting outcomes, however, differ based on the

stressor placed on the system, the resources available to the system, and the outcome that is sought (Ungar, 2021). Each system is also placed within the local context which results in different power for each system (or piece of a system), and the capacity it has to influence the individual or collective well-being of a system or systems (Ungar, 2021). Therefore, human functioning (or dysfunction) involve the interaction of many systems (i.e., the individual, family, community, and larger systems), in which the interplay of these systems influences vulnerability and resilience with stressful life events (Walsh, 2021). Through the systemic (or multisystemic) view of resilience, we can better understand how one system has the potential to influence the resilience of another system (Ungar, 2021). For example, a diverse natural environment has the potential to enrich or infect the human microbiome, which in turn influences the immune system and mental health of the individual or individuals (Ungar, 2021). As a result, development is not a linear process, especially when facing adversity, but it is better conceptualized as a probabilistic, dynamic, nonlinear process that is shaped through integration of the aforementioned systems (Masten & Barns, 2018). Resilience is not circumscribed within the individual, but the capacity of the individual to adapt to challenges depends on their connections to other people and the systems external to the individual (Masten & Barns, 2018).

Understanding resilience as an outcome emphasizes that mental and physical health is maintained or regained despite stress or adversity (Chmoitorz et al., 2018; Kalisch et al., 2017). Although there has been this shift in understanding resilience from a trait to an outcome, the resilience literature has been plagued by variable definitions, creating challenges for resilience research, systematic reviews, and meta-analyses (Hilliard et al., 2015; Masten & Cicchetti, 2016).

There has also been a shift in resilience theory where although the definition continues to focus on risk exposures, research and intervention grounded in resilience are becoming more focused on strengths rather than deficits (Fergus & Zimmerman, 2005). This leads to a strengths-based focus of understanding healthy development in spite of risk exposure (Fergus & Zimmerman, 2005). Healthy development after experiencing an adverse experience goes beyond coping; the strengths and resources of the individual enable them to recover and to achieve positive growth (Walsh, 2016).

Adverse Child Experiences, Mental Health and Resilience

In the 2016 Canadian census, 32% of Canadians reported that during childhood they had experienced physical abuse, sexual abuse, and/or exposure to intimate partner violence (Afifi et al., 2014, 2016). Furthermore, a World Health Organization study involving 21 countries (N = 51, 945), found that approximately 30% of all mental health problems are related to childhood adversity (Kessler et al., 2010). These adverse experiences, along with a wide range of other traumatic and stressful experiences, are associated with an increased risk for later psychopathology (Afifi et al., 2016; Kessler et al., 2010). Fortunately, not everyone who experiences such traumatic or stressful events develop later psychopathology (Kessler et al., 2010), and many are able to remain healthy, recover, or grow after such events (Bonanno et al., 2012; Masten, 2011; Rutter, 2006). This phenomenon of resilience is paramount for these individuals as they possess or have acquired skills that allow them to adapt effectively after adversity (Bonanno et al., 2012; Masten, 2011). With this in mind, resilience is imperative to development and functioning because it impacts one's ability to successfully deal with significant threats to well-being (Kessler et al., 2010), which in turn influences development, health, and happiness (RIRO, 2010).

Fostering Resilience

Since resilience plays an important role in protecting individuals from adverse experiences and mental health difficulties, an important avenue of research has examined ways to support individuals in fostering resilience. Utilizing resilience building programs may provide individuals the necessary tools to cope and recover from adverse experiences (Winwood et al., 2013). If we are better able to understand resilience in the Canadian context, and build individual resilience skills and skills within the family unit, individuals may be better equipped to cope, adapt, and avoid the negative trajectories associated with experiencing adversity. Understanding the ways that individuals are able to adapt well to threat is important as it allows targeted interventions to aid in the development of such abilities and support individuals to acquire the internal and external assets needed to overcome adversity (RIRO, 2010). With the shift of understanding resilience from an innate trait to an outcome, researchers have conceptualized resilience as a set of learnable skills to mitigate stress and allow for productive responses when setbacks occur (Winwood et al., 2013).

There have been a number of studies that have reported improvements in the resilience of individuals in a number of settings (e.g., work, school) and a variety of delivery methods (e.g., parent training, family training, computer-based training). First, studies found that programs utilizing early elementary school parent training or family skills training approaches were effective in terms of reducing aggression, conduct disorders, attention deficit/hyperactivity disorders, oppositional defiant disorders (Kazdin, 1993; Taylor & Biglan, 1998), antisocial behaviour (Liddle & Hogue, 2002), and delinquency (Alvarado & Kumpfer, 2000). Second, Smith and associates (2018) examined the direct relationship between stress (i.e., perceived stress and somatic symptoms of stress) and resilience by examining changes in self-report of

these constructs before and after participating in their resilience building program. As a result of their program, Smith and colleagues (2018) found that changes in resilience resulted in changes in stress and stress-related symptoms. They were also able to confirm a dose-response relationship to their individualized computer-delivered intervention such that the degree of change in resilience predicted the magnitude of reduction in stress and symptoms (Smith et al., 2018). Finally, a program utilizing a family-based approach, including life skills training intervention for parents (i.e., parent training to develop resilient children) and for children (i.e., life skills training for resiliency) found promising results (Kummabutr et al., 2017). Kummabutr and colleagues (2017) found that their intervention was effective in enhancing child resiliency (i.e., a significant change in the intervention group's self-report of post-intervention coping abilities compared to controls). This study will be described in detail in a following section, along with other programs that utilize a family-based approach to foster child and family resilience.

Resilience training not only prepares individuals to bounce back from adverse events, but it also prepares them to cope with and successfully respond when mental health difficulties arise. Higher levels of resilience have been shown to be associated with lower levels of depression (Poole et al., 2017) and stress (Smith et al., 2018). This is important to note, as major depressive disorder is one of the most prevalent psychological disorders, with approximately 7% of US citizens presenting with this disorder (American Psychiatric Association (APA), 2013). Importantly, there is a three-fold increased risk of major depressive disorder for those 18-29 years of age (APA, 2013). The onset of this disorder may occur at any age, but the likelihood of onset increases markedly during the puberty (APA, 2013). Similarly, according to Merikangas

and colleagues (2010) half of adult mental disorders emerge by the age of 14, resulting in adolescence being the riskiest time period for developing mental health difficulties (Jones, 2013).

The mental health difficulties in Canadians, due to the large population that experience adverse child experiences or life stressors, must also be emphasized (Afifi et al., 2014, 2016). Both resilience and adverse childhood experiences independently predicted symptoms of depression (Poole et al., 2017). Furthermore, resilience has been found to moderate the relationship between adverse childhood experiences and depression, emphasizing the importance of bolstering resilience in the individuals that experience adverse events (Poole et al., 2017). Importantly, the association between adversity and depression was stronger in those with low resilience relative to those with high resilience (Poole et al., 2017). In a meta-analysis, resilience was found to be moderately associated with fewer depressive symptoms in older adults, based on seven cross-sectional studies (Ávila et al., 2016). Studies have shown promise that resilience enhancement interventions can promote mental health and lower levels of depressive symptoms (Luthar & Cicchetti, 2000). Specifically, resilience-training programs with goals of promoting positive emotions, cognitive flexibility, active problem solving, and coping skills are shown to improve rates of depressive symptoms (Brunwasser et al., 2009).

In terms of the relationships between mental health, adverse childhood experiences, and resilience, stress is another important factor to consider. Stress, or the physiological and behavioural response to a stimulus, is adaptive and crucial in the adjustment to external demands (Oken et al., 2015). Chronic stress, however, may have detrimental effects causing negative effects to well-being or health (Oken et al., 2015). As a result, due to the high number of Americans that report high stress (26%), and the 49% that identified a major stressful event during the previous year (National Public Radio et al., 2014), it's essential to support individuals

to cope with stress. Fostering resilience is one way to aid these individuals as it is related to different subjective manifestations of stress in adults (García-León et al., 2019). Resilience is also associated with lower levels of perceived stress (Beasley et al., 2003; Kwok et al., 2014), and fewer stress symptoms (e.g., chronic pain (Bauer et al., 2016), headaches (Stonnington et al., 2016; Kalapurakkel et al., 2015), poor sleep quality (Shatte et al., 2017)). With stress being a part of daily life, which can influence mental health outcomes (Oken et al., 2015), resilience-training programs that promote coping behaviours and optimism will likely aid individuals in bouncing back from a variety of stressors. Ultimately, with the large percentage of Canadians that experience an early traumatic event or stress/stressful events, there is risk of negative outcomes associated with this exposure (Afifi et al., 2014; Oken et al., 2015). Because no individual exists on their own but instead they exist within larges systems, these negative outcomes may also extend beyond the individual to their friends, family, and/or community systems (Ungar, 2021).

Family Resilience

Researchers have looked beyond the individual influence, emphasizing a systemic approach within the functional unit of the family (Walsh, 1996, 2003). Similarly, based on systems theory, the capacity of an individual to adapt to challenges depends on their connections with the people around them, as well as connection to the systems external to them facilitated by those close relationships (Masten & Barns, 2018). A systemic perspective includes the influence of individual family members or parents/caregivers, and also considers risk and resilience at the level of the family unit (Walsh, 1996; 2003). Therefore, by developing and targeting intervention to strengthen the key processes associated with resilience, families are likely to become more resourceful in meeting challenges (Walsh, 2016). These type of interventions, or resilience-oriented services, are able to empower families as they bring forth a shared hope, develop

competencies together, and strengthen bonds within the family system (Walsh, 2016). The key concept of family resilience refers to the capacity of a family, as a functional system, to withstand and bounce back from adversity (Walsh, 1996, 2003, 2021).

The key processes highlighted by Walsh (2016, 2021) relate to the synergistic influence of transactions within families and with their social environment. The Walsh Family Resilience Framework identifies nine key transactional processes that facilitate family resilience which are broken down into three domains of family functioning: belief systems, organizational processes, and communication/problem solving processes (Walsh 2003, 2021; see Table 1). These nine processes within the three domains serve as a conceptual map to identify and target the key family processes that can reduce stress and family vulnerability, and foster healing and growth to overcome prolonged adversity (Walsh, 2003). These transactional processes are interactive both within and across domains (Walsh, 2021). For example, encouragement fosters hope, which fosters connectedness and open emotional sharing. Belief systems, organizational processes and communication/problem solving processes enable families to rally during highly stressful times, take proactive steps, buffer disruptions, reduce the risk of dysfunction, and support positive adaptation/resourcefulness (Walsh, 2021). Due to cultural differences and differing family experiences, each key process may be more (or less) relevant to families based on the adversity being faced or the evolution of the challenges over time (Walsh, 2021). Families forge through varying pathways of resilience depending on the resources available, the challenges being faced, their values, and their aims (Walsh, 2021). This flexible and tailored approach to each family's identity and the challenges being faced highlights that no single model of functioning fits for all families or all situations (Walsh, 2016).

Table 1

Walsh's Key Processes: Family Resilience Framework (Walsh, 2021, pp. 261-262)

Domains of Family Functioning	Key Transactional Processes to Facilitate Family Resilience
Belief Systems	1. Making meaning of adversity - Relational view of resilience - Normalize, contextualize distress - Sense of coherence: meaningful, comprehensible, manageable challenge - Facilitative appraisal: Explanatory attributions; future expectations 2. Positive outlook - Hope, optimistic bias; confidence in overcoming challenges - Encouragement; affirm strengths, focus on potential - Active initiative and perseverance (can-do spirit) - Master the possible; accept what can't be changes; tolerate uncertainty 3. Transcendence and spirituality - Larger values, purpose - Spirituality: faith, contemplative practices, community; connection with nature - Inspiration: Envision possibilities, aspirations; creative expression; social action - Transformation: learning, change, and positive growth from adversity
Organizational Processes	4. Flexibility - Rebound, adaptive change to meet new challenges - Reorganize, restabilize: continuity, dependability, predictability

	- Strong authoritative leadership: Nurture, guide, protect - Varied family forms: cooperative parenting/caregiving teams - Couple/co-parent relationship: mutual respect; equal partners 5. Connectedness - Mutual support, team work, and commitment - Respect individual needs, differences - Seek reconnection and repair grievances 6. Mobilize social and economic resources - Recruit extended kin, social, and community supports; models and mentors - Build financial security; navigate stressful work/family challenges - Transactions with larger systems: Access institutional, structural supports
Communication/Problem-Solving Processes	7. Clarity - Clear, consistent messages, information - Clarify ambiguous situations; truth seeking 8. Open emotional sharing - Painful feelings: sadness, suffering, anger, fear, disappointment, remorse - Positive interactions: love, appreciation, gratitude, humor, fun, respite 9. Collaborative problem-solving - Creative brainstorming; resourcefulness - Share decision making; negotiation and conflict repair - Focus on goals; concrete steps; build on success; learn from setbacks

- Proactive stance: preparedness, planning, prevention

Of all the potential processes connecting child and family resilience, parent-child relationships have received the greatest theoretical and empirical attention (Masten, 2018). More specifically, close attachment bonds with a caregiver, as well as effective parenting are known protective factors for young children (Fergus & Zimmerman, 2005; Kumpfer & Alvarado, 2003; Masten & Barns, 2018). For example, parenting prevention programs provide promising evidence that by promoting positive parenting behaviours, and increasing confidence and belief in one's own parenting abilities will result in positive coping abilities and resources to promote resilience (Doty et al., 2017). This theoretical cascade presented by Doty and colleagues (2017) highlights that the resources developed by the parent are likely to spill over and benefit family and community systems surrounding the parent. Conversely, according to Kumpfer and Alvarado (2003), youth are also at an increased risk of acquiring developmental problems due to a variety of family-based risk factors (i.e., family conflict, lack of parent-child relationship, disorganization in the household, stressors in the family, parental depression, and ineffective parenting), which increase or decrease in relation to protective and resilience factors. This emphasizes that family protective mechanisms and individual resiliency processes must be addressed in addition to addressing family risk factors (Kumpfer & Alvarado, 2003).

Resilience Building Programs, Stress and Depression

Family-Based Resiliency Programs

In family-based prevention research, an array of pathway analyses have linked parent and child functioning as modes for intervention (Masten, 2018). Exposure to nurturing and supportive social environments, as well as effective parenting and strong caregiver-child relationships have been found to promote health and well-being across development (Boden et

al., 2016; Fox et al., 2010). Similarly, a well-known and well-researched resilience promotive factor that help youth overcome difficulties is parental support (Fergus & Zimmerman, 2005). Therefore, there is an opportunity to enhance this factor through parenting skills programs or tailored interventions as these utilize key supportive relationships in fostering child functioning (Kumpfer & Alvarado, 2003). For example, Patterson and colleagues (2010) have shown that parent management training not only alters the parents behaviour, but also has predictive effects on child functioning, highlighting that fostering supportive relationships with parents can influence functioning and behaviour of others. Parent management training is a mode of intervention utilized with parents to facilitate changes in families and their children by teaching effective parenting practices (Patterson et al., 2010). Effective parenting practices taught to parentings include teaching skills such as providing positive attention to their children while they play, learning to increase good behaviour by paying more attention to it and offering specific praise, and learning to withdraw attention for inappropriate behaviours (Cartwright-Hatton et al., 2005). Another example of a successful program that focuses on building the relationship between parents and adolescents, and building relationship skills through practice, is the Multidimensional Family Prevention Program (MDFP; Liddle & Hogue, 2000). Liddle and Hogue (2000) employ a resilience approach by focusing on building positive relationships to prevent negative outcomes (Fergus & Zimmerman, 2005). This targeted program is based on a prevention counseling model that utilizes a family-based approach for working with at-risk adolescents (Hogue et al., 2002). Family-based prevention seeks to promote healthy functioning in children and adolescents primarily through addressing the risk and protective factors that characterize their parents and families (Hogue et al., 2002). Prevention models based on customized intervention planning employ a flexible intervention format (Hogue et al., 2002). The

format includes features such as, sessions hosted in one-to-one settings, assessments to determine the unique profile of each client to determine intervention goals, and collaboration with the family when developing the intervention plan (Hogue et al., 2002). By utilizing this approach, Hogue and associates (2002) were able to assess the short-term efficacy of family-based prevention counselling for at-risk youth. In comparison to controls, the families and adolescents that received family prevention counselling showed improvement in a number of constructs related to adolescent well-being (e.g., increases in self-concept and school bonding, and enhanced family cohesion; Hogue et al., 2002).

Other interventions targeting the importance of the parent-child relationship and the effects of parenting well-being in promoting children's resilience include Positive Parenting Program (Sanders, 1999), Strengthening Families Program (Kumpfer et al., 2002), and Incredible Years (Webster-Stratton, 2001). Similar to MDFP (Hogue et al., 2002; Liddle & Hogue, 2000), these programs have been found to improve parent-child connections and the child's academic success, as well as reduce substance-use risk through improving parenting skills and child-parent interactions (Twum-Antwi et al., 2019). With the support of the literature that family well-being and child resilience can be supported through parent training, Kummabutr and colleagues (2017) examined a family-based intervention which involved child life skills training and parent training to foster resilience in their children. This program was provided to three randomly selected elementary schools in Thailand, where grade four students and their parents were randomly assigned to the experimental group or control group (Kummabutr et al., 2017). Baseline data was obtained, as well as follow-up self-report of resilience (i.e., the Proactive Coping Inventory to determine change in coping) at one week and two months post-intervention (Kummabutr et al., 2017). The program included skills training for resilience development for the children in five

key areas: self-esteem, critical thinking, decision-making and problem-solving, coping with stress, and self-regulation (Kummabutr et al., 2017). The second portion focused on promoting and providing information on parenting skills and resilience development for supporting their children at home (Kummabutr et al., 2017). In combination, this program was found to be effective in enhancing child resiliency (Kummabutr et al., 2017), which they believe is a result of the parenting training and coaching that parent's utilized at home, as well as providing the parents and their children the opportunity to practice their skills. The evidence of these programs provides further support that a parent/family-based approach for fostering resilience in children can be effective.

Penn Resiliency Program

In terms of specific resilience building programs, a gold-standard program in this field is the Penn Resilience Program (PRP; Gillham et al., 2008). The PRP is one of the most widely researched prevention programs. Based on Cognitive Behavioural Therapy (CBT), this program is designed as a group intervention for youth (ages 10-14 years), offered in schools and other settings (e.g., primary care clinics, juvenile detention centers; Gillham et al., 2008). The PRP has three goals: to identify cognitive and behavioural risk factors, to promote resilience, and to prevent symptoms of depression in early adolescence (Gillham et al., 2008). By targeting the early adolescent developmental period, the intent is to mitigate the heightened risk of developing depression during adolescence (Gillham et al., 2008). Furthermore, adolescent individuals are targeted through this program, and not younger individuals, because developmentally they (1) experience important cognitive gains which can enable them to learn cognitive and problem-solving skills to increase resilience, (2) their abilities in abstract reasoning and perspective-taking increase which can aid them in practicing these skills, and (3) they are better able to reflect on

their beliefs and engage in hypothesis testing by weighing evidence and evaluating alternatives (Gillham et al., 2008).

There have been three meta-analyses that have examined the PRP which find inconsistent or small effects on symptoms of depression. First, when examining the effect sizes of the intervention effects across studies, the average effect size was 0.09 at post-intervention and 0.32 at 6-months follow-up (Gillham et al., 2008). When these results were weighted based on sample size, these effect sizes are 0.12 and 0.22, respectively (Gillham et al., 2008). Second, when Brunwasser and colleagues (2009) examined the magnitude of PRP's effects in both targeted and universal studies, they found that mean effect size comparing PRP and to a no-intervention control group was significant at postintervention (d = 0.11, 95% confidence interval (CI) [.01, .20], at 6- to 8-months follow-up (d = 0.21, 95% CI [.11, .31]), and at 12-months follow-up (d = 0.20, 95% CI [.09, .32]). PRP groups also had fewer depressive symptoms than controls in 15 of 17 studies (Brunwasser et al., 2009). However, the mean effect size for PRP versus other resilience building programs (i.e., active control conditions) was not significant at post-intervention (d = -0.02, 95% CI [-.19, .14]), and at 6- to 8-month follow-up (d = 0.00, 95% CI [-.18, .19]). However, PRP groups had fewer depressive symptoms than control groups in nine of 10 studies (Brunwasser et al., 2009). When examining the difference between targeted samples versus universally delivered programs, the PRP effects tended to be large for all three assessments that were delivered to a targeted sample, although the difference between targeted sample programs versus universally delivered programs was non-significant (Brunwasser et al., 2009). Finally, Bastounis and associates (2016) conducted a systematic review of universal applications of school-based PRP and its derivatives to examine whether they are effective at reducing depression or anxiety in students aged 8-17 years. Their findings indicate that there is

no evidence that universal school-based PRP or its derivatives are statistically effective on these outcomes post-intervention (Bastounis et al., 2016). Brunwasser and associates (2009) hypothesized that it's plausible that these inconsistences are due to within- and between-study differences, and, consistent with other findings, that prevention programs that target at-risk youth rather than targeting all youth (universal programs) are more effective (Horowitz & Garber, 2006; Merry et al., 2004; Stice et al., 2009). Therefore, while the evidence is somewhat inconsistent, the PRP has some support indicating that it can help vulnerable youth develop resiliency skills and reduce symptoms of depression.

Universal Versus Targeted Programs

As found by Brunwasser and colleagues (2009), there was a difference, albeit not statistically significant, between targeted versus universal population approaches by PRP. With this in mind, it is essential to dive deeper into this distinction as it may impact program design, as well as program effectiveness. Many training programs claim to improve resilience universally, regardless of innate vulnerability or exposure to adverse events; however, this goes against the very definition that is resilience, which emphasizes that risk, adversity and vulnerability are key to resilience (Forbes & Fikretoglu, 2018; Schoon, 2021). Thus, researchers have questioned whether resilience can be trained or fostered during non-traumatic times (Luthar et al., 2000; Davydov et al., 2010), which highlights that formally intervening with healthy populations may be questionable in terms of potential benefits. Vulnerable individuals may benefit disproportionately from interventions improving resiliency (Belsky & Pluess, 2013), as a supported but challenging environment is required in order for resilience to be fostered (Fletcher & Sarkar, 2016). Requiring a challenging environment in order to foster resilience adds

complexity to the requirements for resilience training programs and leads to researchers to question what these programs are truly measuring (Forbes & Fikretoglu, 2018).

Prevention researchers often employ a targeted approach to identify and recruit youth at an increased risk of developing depression because they are most in need of early intervention (Brunwasser et al., 2009). In contrast, universal studies recruit all members of a specific population, regardless of risk (Brunwasser et al., 2009), similar to the approach of the PRP (Gillham et al., 2008). Depression prevention programs that have utilized the targeted approach have garnered more support than those delivered universally (Horowitz & Garber, 2006; Merry et al., 2004; Stice et al., 2009). Therefore, resilience training may be suitable in some, but not all individuals, and thus resilience interventions/training programs may not show population-size effects (Belsky & Pluess, 2013). In sum, the aforementioned studies highlight that targeting healthy populations or utilizing a universal approach may be questionable in terms of benefits (Forbes & Fikretoglu, 2018), and perhaps this explains the ineffective and mixed results when examining the effectiveness of the PRP.

Bounce Back & Thrive!

BBT, was developed in Ontario by Pearson and Kordich Hall (BBT, 2012). To help facilitate the development and dissemination of the BBT Program, they established a non-profit organization, RIRO. The name of the organization was meant to convey that resilience relied on both internal processes (i.e., Reaching In) as well as social processes and contexts (i.e., Reaching Out; D. Kordich Hall, personal communication, May 30, 2020). BBT conceptualizes resilience as the ability to navigate life's challenges, and thrive (RIRO, 2010). The program involves resiliency skills training for parents with children under 8 years of age that are currently experiencing significant life challenges (i.e., a targeted sample). While BBT was designed to be

widely applicable, the developers offered it to predominately vulnerable populations (i.e., parents experiencing poverty, low literacy, family violence, teen parenting, parenting children with special needs, or currently living in communities experiencing high levels of domestic violence). The theoretical orientation of BBT involves the core principles of PRP, as well as the principles of social learning theory which highlights that children learn by observing how the adults in their life navigate challenges and opportunities, and their outlook on life (Pearson & Kordich Hall, 2017). The developers of BBT intended to maintain the cognitive-behavioural base of the PRP, while making foundational changes in terms of audience (i.e., parents) and delivery (i.e., manual-based parent training). In addition to the program being used in Ontario and across Canada, it has also been translated into in French and piloted with Canadian Military Families (Mikolas et al., 2021), as well as used post-earthquake in New Zealand.

BBT involves 10 weekly 90-120 minute sessions delivered in a small group format to parents with the intent that they can learn and practice skills in session, and then utilize these skills with their children in hopes that they will mimic their new skills and philosophies (Pearson & Kordich Hall, 2017). The 10 sessions are then broken down into two parts. The first six sessions (i.e., Part 1) are designed to help parents handle life's hardships, including the challenges of parenting, and the last four sessions (i.e., Part 2) are designed to help parents help their children as they experience life's challenges, disappointments and frustrations (see Table 2 for session information and program objectives; Pearson & Kordich Hall, 2016).

Table 2

BBT Sessions and Objectives (BBT, 2012; Mikolas et al., 2021, p. 4)

Overall Training Objectives	Session Topics
Part 1: Adult Skills:	1. Exploring how:

Building caring relationships and becoming a role model of resilience skills	- caring relationships, positive role models, and a strengths-based approach to help build resilience in young children 2. Building self-regulation skills to: - enhance emotion regulation and impulse control - reflect on reactions to stressful circumstances 3. Learning key thinking skills including: - understanding how thoughts cause reactions that either help or hinder resilience responses - techniques to identify non-resilient thinking habits and rooted beliefs that cause relationships difficulties and block effective responses to opportunities - techniques to develop flexible thinking and to discover alternative ways to respond to problems, stress, and conflict
Part 2: Child Application Skills: Helps parents apply behaviour guidance and resiliency-building strategies directly with their children	1. Using empathy to: - Build close relationships and help children develop emotional literacy skills 2. Helping children develop a "Can Do" view through: - Mastery opportunities, encouragement, and confidence-building approaches 3. Building an environment of positivity to: - Enhance children's capacity to maintain hope and optimism

More specifically, Part 1 of the program focuses on enhancing each parent's capacity to provide their child(ren) with a caring relationship, and to become a role model of resilience skills during life's daily challenges (Pearson & Kordich Hall, 2016). The content of Part 1 includes: (1) exploring caring relationships, presenting as a positive role model, utilizing a strengths based approach to help build resilience skills in themselves and their child(ren); (2) building and practicing self-regulation skills to enhance emotion regulation skills, impulse control, and to reflect on their reactions to stressful circumstances; and (3) learning thinking skills, such as

understanding how thoughts cause reactions that help or hinder resilient responses, learning techniques to identify non-resilient thinking and deeply rooted unhelpful thoughts, and learning techniques to develop flexible thinking and alternative response to conflict, problems, and stress (Pearson & Kordich Hall, 2016).

Part 2 focuses on helping parents to apply behaviour guidance and resiliency-building strategies directly with their child(ren) (Pearson & Kordich Hall, 2016). The content included in Part 2 includes: (1) using empathy to build relationships and help their child(ren) to develop and practice emotional literacy skills; (2) learning skills to practice at home to allow their children realize success on their own and developing a "can do" attitude; and (3) developing skills to build an environment of positivity to enhance their child(ren)'s capacity to maintain hope and optimism (Pearson & Kordich Hall, 2016).

BBT was evaluated using a pre-post methodology utilizing a number of measures to monitor success and growth: A resiliency scale (Bounce Back Subscale (BBS); Morrison & Kordich Hall, 2012), and a measure of depressive symptoms and stress (Depression Anxiety Stress Scale (DASS-21); Lovibond & Lovibond, 1995). Participants were asked to complete the same questionnaires before and after the program in order to assess changes in resilience and changes in core mental health outcomes associated with resilience. Finally, participants were asked to complete a post-training survey that examined pre-post change by having parents respond retrospectively to what their thoughts, feelings, resilience, and parenting skills were before group, and what they were after group on a five-point scale (e.g., "How much did you know about building your resilience before and after this parent group?"). For the purpose of this project and due to the methodological issues of participant retrospective ratings of change (Schwarz, 2007), data from the post-training survey will not be examined.

Development of Bounce Back Subscale

The developers of BBT noted a gap in the literature and determined that a new resiliency scale was needed for the purpose of their resilience building program (RIRO, 2010). Similarly, two methodological reviews (Chmitorz et al., 2018; Windle et al., 2011) examined resilience scales and discovered that publication of these scales were missing important information in terms psychometric properties. Both reviews also declared there was no current 'gold-standard' in terms of resiliency measures (Chmitorz et al., 2018; Windle et al., 2011). Therefore, although RIRO (2010) began their own comprehensive review of resilience scales in 2010, these limitations are still noted years later by Chmitorz and colleagues (2018).

RIRO (2010) identified a number of limitations that they felt needed to be addressed, and could be addressed through developing their own scale. First, many resilience scales operate from a "risk" framework, as opposed to taking a strengths-based approach (i.e., they examine dysfunction). Second, when they were developing this scale, measures that examined multiple levels of resilience (internal and external factors) were in the early stages of development which left RIRO (2010) uncertain about the reliability and validity of these measures. RIRO (2010) also noted that measures of resilience may not truly measure resilience, but that they may measure a set of developmental and external resources associated with resilience that are available to the individual. Third, because all measures are designed for specific purposes (e.g., to serve the needs and population they serve, provide a snap shot for large screening purposes), only a few scales contained the depth required to assist with planning and assessing interventions (RIRO, 2010). Fourth, the developers of BBT were interested in measuring inividuals' resilience over time, and therefore, needed a survey sensitive to relevant change to accurately measure significant changes (RIRO, 2010). Similarly, and more recently, Chmitorz and colleagues (2018)

highlighted that most existing scales measure stable personality traits, or assess the availability of protective factors to maintain mental health despite facing adversities; and therefore, resilience, as an outcome, is not being assessed and/or these scales have not been systematically analyzed. In Smith and colleagues (2018) study of resilience and stress, they utilized a MeQuilibrium Resilience Measure created by Shatte and colleagues (2017) to measure resilience over time. Consistent with Chmitorz and associates (2018) statement, both studies (Shatte et al., 2017; Smith et al., 2018) reported limited information on the MeQuilibrium Resilience Measure, it's psychometric properties, and its ability to detect change over time. Further contributing to the difficulty of creating a scale that can detect clinically significant change is that there are many internal characteristics involved in resilience (e.g., attitude towards life, world views, optimism) that are typically stable (RIRO, 2010). Therefore, the goal with developing a resilience scale was to create a measure that is highly sensitive to change (RIRO, 2010). Fifth, culturally-sensitive measures of resilience used in cross-cultural research were in the early to middle stages of development and were available for research purposes, but not yet evaluated for the purposes of clinical and educational assessment or monitoring (RIRO, 2010). Finally, although there were some well-researched resilience and strength-based measures for adults, RIRO (2010) was unable to locate any that were designed specifically to assess resilience in parents, and this was a priority since families play an essential role in supporting resilience in their children.

In sum, the present self-report resilience scale – the Bounce Back Subscale (BBS; Morrison & Kordich Hall, 2012) – was developed as a scale that would be sensitive to change over a 10-week period of intervention (RIRO, 2010). The scale designers developed and tested the scale at multiple time points (Morrison & Kordich Hall, 2012). First, 81-items were either created or taken from a variety of openly public sources that relate to resilience, and then piloted

on 30 volunteers. Based on responses and feedback, a 36-item scale was chosen for more testing. This 36-item scale was then administered twice to participants in the first six pilot groups of another project – Resilient Parents, Resilient Kids – both pre-training and post-training (10-weeks later). Based on these results, they chose 14-items that showed the most sensitivity to change from pre- to post-assessment (Morrison & Kordich Hall, 2012). Once the 14-items were decided, preliminary analyses were explored with 106 participants that completed pre- and post-scales. The developers completed a t-test to determine the sensitivity of the questionnaire to change, and found that overall there was a statistically significant change in participants perceptions of their own resilience. The Cronbach's alpha was examined, and adequate ($\alpha = .75$), as well the factor structure of the scale was explored, which resulted in a four-factor solution: (1) optimism/pessimism, (2) parental attributions about child and parenting, (3) self-regulation/self-efficacy, and (4) beliefs about set-backs/challenges. Although they describe a four-factor solution, little information was provided regarding the extraction methods used for the exploratory factor analysis (EFA), and no explanation was provided for how the four-factor solution was determined. Consequently, the developers of the BBS concluded that their scale measures several essential components related to resilience in parents that were consistent with the areas of intervention targeted by BBT (e.g., life orientation (optimism/pessimism), attitudes about self-regulation and self-efficacy, attitudes toward challenges, attitudes toward parenting and children (negative attributes); Morrison & Kordich Hall, 2012).

In order to validate and standardize the BBS, a further sample of subjects was obtained. 170 respondents completed the 14-item scale, as well as two additional scales: The DASS-21 (Lovibond & Lovibond, 1995), and the Flourishing Scale from the 2009 European Social Survey (Huppert & Timothy, 2009). To examine concurrent validity, inter-correlations between

measures were examined and resulted in a negative relationship between the BBS and DASS-21 (r = -.64), and a positive correlation between the BBS and the Flourishing Scale (r = .54).

Morrison and Kordich Hall (2012) aimed to build on previous scales and capture a wide, sensitive to change, concept of resilience (RIRO, 2010). Also, because the BBT program developers were anticipating some participants in the project to have lower literacy or poor English language skills, the scale developers sought to include reasonably short, concise, and easily comprehensible items (Morrison & Kordich Hall, 2012). BBS was designed to measure several concepts related to resilience in parents, and concepts that were specifically targeted by the program (e.g., attitudes towards parenting and children; Morrison & Kordich Hall, 2012).

BBT Effectiveness

Based on Kordich Hall and Pearson's (2016) evaluation of the program (data collected 2012-2016) and utilizing the pre- and post-scales (BBS and DASS-21), parents showed an overall significant positive change in attitudes associated with greater resilience and more positive attitudes about their children (mean change BBS = 4.49, $t(446) = 11.16$, $p < .001$). They also found that parents with the least 'resilient' attitudes pre-BBT (lowest BBS scores) showed the greatest positive change ($r = -.49$, $p < .001$). Parents also showed a decrease in depression scores (mean change of DASS depression items = -1.27, $t(441) = -7.05$, $p < .001$) and a decrease in stress-related signs (mean change of DASS stress items = -1.53, $t(438) = -8.79$, $p < .001$; Kordich Hall & Pearson, 2016). Based on these findings, it appears that BBT is an effective program at building resiliency skills in parents, and consequently reducing stress and depression. This program may be a Canadian resiliency training program that is effective in preparing parents for life's inevitable hardships. In order to determine whether this program is effective,

there must be an independent evaluation of their data to confirm and support Kordich Hall and Pearson's (2016) findings.

Purpose

As part of a larger investigation examining the effectiveness of the BBT program, the purpose of the current project is to conduct an independent secondary analysis of the existing BBT evaluation data. Thus, the objectives of this project are two-fold: (1) to begin an examination of construct validity by utilizing exploratory factor analysis to determine the factor loadings of the BBS independently from their original analysis of the scale; (2) to conduct an independent analysis of the evaluation data to determine the effectiveness of BBT.

Methods

Study Design

A retrospective analysis of data collected from BBT between 2012-2016 was used. All participants were considered for the analysis, as long as they attended BBT, completed pre- and post-questionnaires, and had children under the age of 8. Participants were excluded if they did not meet these criteria.

Participants

There were 440 adults with children under the age of 8 who completed the BBT program between 2012-2016 and the program pre- and post-questionnaires (see Table 3 for participant characteristics). The sample consisted predominantly of vulnerable populations across Canada, with female participants more likely to attend (88% female). Of the 440 parents, 68% were parenting their children at the time, and 32% were not (i.e., children apprehended, not parenting full-time; 4.5% missing data). In terms of session attendance, 18% attended all 10 sessions, 20% missed one session, 16% missed two sessions, and 13% missed three or greater sessions. Over

67% of participants specified how many sessions were missed, and the number of sessions missed ranged from 0 to 6 (M = 1.43). In terms of participant education, 43% were college/university graduates, 17% had some college education, 13% were high school graduates, and 24% completed some elementary or high school (5% missing data). Of the 440 participants, 34% had one child, 36% had 2 children, 16% had 3 children, and 10% had four or more children (3% missing data).

Table 3

Participant Characteristics

Demographic Variable	N (missing data)	n (%)
Gender	434 (6)	
Female		380 (88%)
Male		54 (12%)
Parenting Status	420 (20)	
Currently parenting		284 (68%)
Not currently parenting		136 (32%)
Number of Sessions Missed	296 (144)	
0		81 (27%)
1		89 (30%)
2		71 (24%)
3		36 (12%)
4		11 (4%)
5		7 (2%)
6		1 (<1%)
Education	427 (13)	
Less than high school		106 (25%)
High school graduate		57 (13%)
Some college		76 (18%)
College/university graduate		188 (44%)

Number of Children	426 (14)	
1		151 (35%)
2		160 (38%)
3		72 (17%)
4		22 (5%)
5		20 (5%)
6		1 (<1%)

Measures

Demographic information was collected from each parent participating in BBT (i.e., gender, number of children, education, parenting); however, collection was inconsistent for participant age and could not be used in the analysis. Additional variables such as parenting status (i.e., whether they are currently parenting or not), and the number of sessions missed were considered as covariates in the analysis. Parents in BBT completed two measures which examined the impact of the BBT resiliency skills training on themselves and their children. They completed the BBS and two subscales from the 21-item version of the Depression Anxiety Stress Scale (DASS-21; Lovibond & Lovibond, 1995).

Bounce Back Subscale

The BBS (Morrison & Kordich Hall, 2012) was used to assess resilience, before and after the program. It was developed to examine parents' beliefs and attitudes affecting their own resilience and parenting (Pearson & Kordich Hall, 2016). Therefore, the BBS was designed to measure several important constructs related to resilience in parents that the BBT program was directly influencing (e.g., life orientation, attitudes about self-regulation and self-efficacy, attitudes towards challenges and mistakes, and attitudes towards parenting and children). The self-report BBS is a 15-item scale, where all participants were asked to respond on a five-point scale from 1 (*Don't agree at all*) to 5 (*Agree a lot*). Items 12-15, labeled as parenting questions,

added a sixth option (*Not Applicable*). Contributing to the BBS are nine items from the RIRO program questionnaire (e.g., "I frequently blame myself when things go wrong"), one item from the European Social Survey (e.g., "when things go wrong in my life it generally takes me a long time to get back to normal"; Huppert & Timothy, 2009), three items from the Life Orientation Test-Revised (Scheier et al., 1994) to assess pessimism (e.g., "I hardly expect things to go my way") and optimism (e.g., "I am always optimistic about my future"), and two items from the Life Effectiveness Questionnaire (Neill, 2007) to assess emotional control (e.g., "I stay calm when things go wrong for me") and self-efficacy (e.g., "no matter what happens I can handle it"). Of the 15 items, five items are positively worded (e.g., I believe that I can do well on most things) and 10 negatively worded items (e.g., I hardly ever expect things to go my way). All negatively worded items were reverse scored. The total score was then summed for all 15 items with a higher score indicating more positive perceptions of their own parenting and resilience. The Cronbach's alpha for the BBS (pre $\alpha = .82$; post $\alpha = .82$) reflects acceptable internal consistency based on the current sample of parents.

Depression Anxiety Stress Scale (DASS-21)

The DASS-21 (Lovibond & Lovibond, 1995) is a short-form of the DASS-42 that includes a set of three self-report scales designed to measure the negative emotional states of depression, anxiety, and stress. Two of these self-report scales, the depression subscale (DASS-D) and stress subscale (DASS-S), were administered to participants pre- and post-BBT. Participants were asked to read each statement and select a response that applied to them over the last week as indicated by a four-point scale from 1 (*Did not apply to me at all*) to 4 (*Applied to me very much or most of the time*).

Stress (DASS-S). The DASS-S was used to measure participants symptoms of stress

such as tensions, irritability, and tendency to overreact to stressful events. This subscale is a self-report measure containing seven items (e.g., "I find it hard to 'wind down'") that are summed. A higher DASS-S score reflects higher stress. The Cronbach's alpha for the DASS-S (pre $\alpha = .79$, post $\alpha = .80$) reflects acceptable internal consistency based on the current sample of parents.

Depression (DASS-D). The DASS-D was used to measure participants symptoms associated with dysphoric mood (e.g., sadness, worthlessness). This subscale is a self-report measure containing seven items (e.g., "I couldn't seem to experience any positive feelings at all") that are summed. A higher DASS-D score corresponds to lower mood or higher symptoms of depression. The Cronbach's alpha for the DASS-D (pre $\alpha = .87$; post $\alpha = .88$) suggests strong internal consistency based on our population.

Analysis Plan

Statistical analyses were carried out using IBM SPSS Statistics for Mac, Version 26.0. Descriptive statistics were calculated to describe the characteristics of the participants. Next, an exploratory factor analysis was conducted to verify the reported subscales of the BBS and to explore construct validity of the program's self-developed BBS. Once it was determined that all questions fit within a factor-structure and did not need to be removed, the secondary analysis was conducted to determine program effectiveness.

Paired sample t-tests were used to verify the findings reported by Kordich Hall and Pearson (2016) in terms of program effectiveness. Kordich Hall and Pearson (2016) utilized a mean substitution approach to input missing data. For the following analyses, the current study utilized a multiple imputation approach to impute missing data. This is becoming the preferred method and is recommended when data is missing at random and/or missing not at random (Li et al., 2015; Van Buuren, 2018). Multiple imputation is preferred to mean imputation because mean

imputation can distort the data distribution in a number of ways (Van Buuren, 2018). For example, the distribution may be distorted such that it becomes a bimodal distribution, or the standard deviation of the data becomes significantly decreased (Van Buuren, 2018). Mean imputation also results in a number of biases: an underestimation of the variance, disturbance of the relations between variables, bias of the other estimates besides the mean, and bias of the mean when the data are not missing at random (Van Buuren, 2018). Conversely, multiple imputation solves the problem of "too small" standard errors, and it provides a mechanism for dealing with inherent uncertainty of the imputations themselves (e.g., level of confidence in the imputed value is expressed as the variation across the completed data sets; Van Buuren, 2018). As a result, multiple imputation allows for an unbiased estimation of the missing values, and allows for more precise estimation and accurate results. The aim of this study was to verify Kordich Hall and Pearson's (2016) results by utilizing this robust imputation approach to missing data. Moreover, additional analyses were conducted to explore BBT effectiveness and the demographic influences on program effectiveness. Demographic variables were examined to determine whether they influence parents self-report or change in scores over time. Any variables that were found to statistically influence change in parent self-reported resiliency, symptoms of depression, or stress were considered as covariates in an analysis of covariance (ANCOVA).

To examine whether the changes reported by participants were clinically significant, the reliable change index (RCI; Jacobson & Truax, 1991) was calculated. The RCI is a standardized difference score which establishes whether an individual's change scores are meaningful or due to random error. Post intervention scores (BBS, DASS-S, and DASS-D) were subtracted from the baseline BBS, DASS-S, and DASS-D scores. The results were divided by the standard error

of the differences (see Table 4 for formulas). The standard deviation used in the formula for SEM_1 is the standard deviation pre-intervention (i.e., pre-BBS, pre-DASS-S, pre-DASS-D), and for SEM_2 the post-intervention standard deviation was used (i.e., post-BBS, post-DASS-S, post-DASS-D). Correlations between each time point on BBS, DASS-S, and DASS-D were determined (i.e., Pearson's r) to provide the test-retest reliability. Reliable change estimates were computed using the sample of 440 BBT participants who completed the BBS, DASS-S, and DASS-D questionnaires after baseline. The cut-off score used to detect reliable change on BBS, DASS-S, and DASS-D was set at ±1.65 to represent an alpha of $p < .05$ (Jacobson & Truax, 1991). For BBS, a positive change (greater than 1.65) is indicative of higher perceptions of parenting and resilience (i.e., a clinically significant increase in perceived resilience). For DASS-S and DASS-D, a clinically significant change (less than -1.65) is indicative of less mental health challenges (i.e., a clinically significant decrease in stress and symptoms of depression).

The RCI findings were then be further explored to determine whether there are any demographic differences between groups (i.e., clinically significant change group versus non-clinical change group). Finally, demographic variables will be explored to examine the influence they have on resilience RCI scores. Subsequently, demographic variables will be controlled for in a hierarchical regression analysis to examine the influence of pre-program stress and depression scores on resilience RCI scores. This will allow for the evaluation of the unique contribution that parental pre-program depression and stress have on the effectiveness of clinical change in resilience.

Table 4

RCI analysis formulas

Variable measured	Equation
Reliable Change Index	$RCI = X_2\text{-}X_1/S_{diff}$
Standard error of the difference	$S_{diff} = \sqrt{SEM_1^2 + SEM_2^2}$
Standard error of measurement at time 1	$SEM_1 = SD_1\sqrt{1 - r_{12}}$
Standard error of measurement at time 2	$SEM_2 = SD_2\sqrt{1 - r_{12}}$

Results

Data Preparation

The original BBT data underwent rigorous cleaning through a process of combining all phases of the BBT program (Phase 1 = 18 BBT groups, N=121; Phase 2 = 27 BBT groups N=149; Phase 3 = 21 groups, N=170). Participants were screened to determine eligibility, such as ensuring that they completed the BBS questionnaire both pre and post program. Sixty-seven participants did not meet this inclusion criteria and were removed from the analysis. Furthermore, some demographic variables were not obtained consistently (e.g., parent age), and therefore, missing for large portions of the participant's information (e.g., 78% missing data) and removed from the analysis. Some participants responded that they currently had no children under the age of 8 – this was interpreted as a missing value/coding error as this was an inclusion criterion to participate in the program. For participants that completed the BBS, but did not complete the demographic questionnaire, their data was included in the analysis and their missing values imputed. All missing data was recoded similarly across all questionnaires, and imputed utilizing a multiple imputation method, as recommended by Van Buuren (2018) and Li and colleagues (2015). This method was utilized because, for the most part, data was missing at

random; however, for phase 1 there was a printing error for DASS-S item 3, which led to missing data pre- and post-BBT (32% and 32% missing data, respectively). Accordingly, Van Buuren (2018), and Li and associates (2015), indicate that multiple imputation is sufficient when data is also missing not at random. The imputation procedure estimates missing values through an iterative process. Then, maximum likelihood estimates were derived through an expectation-maximization algorithm. These estimates were then used as a starting point for a Markov chain Monte Carlo method to create five imputed datasets. These datasets were collapsed into a single dataset for analyses by taking the mean of each estimated value. Analyses were run using imputed dataset and the original dataset. The magnitudes of effect sizes were comparable. Results from the imputed and original dataset are reported and specified below.

Exploratory Factor Analysis of the BBS

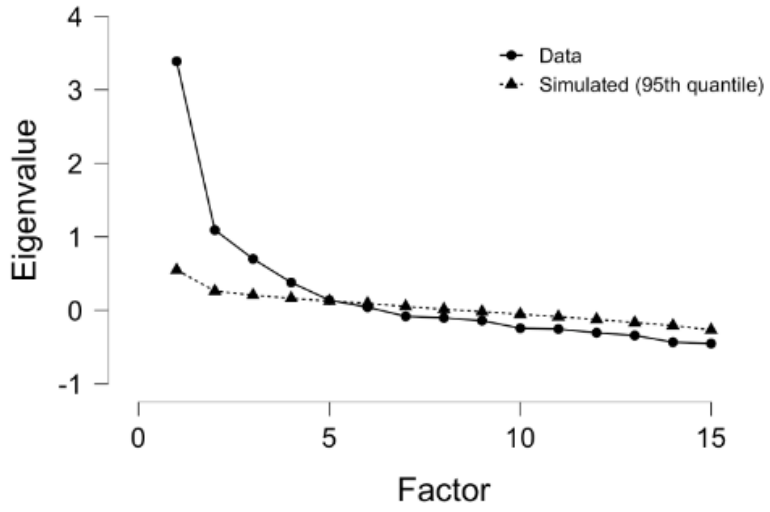
First, the factorability of the 15 BBS items were examined. Several criteria were initially examined to assess whether the data was suitable for EFA: (1) 15 of 15 items correlated at least .3 with at least one other item reflecting reasonable factorability; (2) the Kaiser-Meyer-Olkin (KMO) test was above the recommended value of 0.6 (KMO overall Measure of Sampling Adequacy = 0.81); (3) Bartlett's test of sphericity was significant, $x^2(105) = 1724.97$, $p < .001$; and (4) the communalities were all above .3, further confirming that each item shared some common variance with other items (Kyriazos, 2018; Neill, 2008). Given these overall indicators, EFA was deemed to be suitable with 15 items.

Principal axis factoring was used because the assumption of multivariate normality was not met due to the independent items being correlated (Costello & Osborne, 2005). A two-factor solution, which explained 32% of the variance, was preferred because of: (1) its theoretical support of resilience questions versus parenting questions, (2) the 'leveling off' of eigen values

on the Scree Plot after 2 factors (for the Scree Plot see Figure 1), (3) the insufficient primary loadings and difficulty interpreting the third and subsequent factors, and (4) the two-factor solution was confirmed by a separate parallel analysis (Costello & Osborne, 2005). Oblique rotation procedures were used for the final solution since it was hypothesized that the factors would correlate. No items were eliminated because they all contributed to a simple factor structure and were in the low to moderate range of communalities (i.e., 0.40 to 0.70; Costello & Osborne, 2005).

Figure 1

Scree Plot



The first factor comprised items 1-11 and was labelled as *resilience* due to these questions being specific to parent's perceptions of their own resilience, and related to their own resilient behaviours and choices. The second factor, comprised of items 12-15, was labelled *parenting* due to the parenting specific questions they were asked to respond to. These questions are specific to their own parenting abilities and behaviours, and to their child(ren)'s actions or reactions to stressors. The internal consistency of the factor scales (items 1-11 = resilience; items 12-15 = parenting) were examined using Cronbach's alpha. The alphas were moderate: pre-BBS-

resilience $\alpha = .78$, post-BBS-resilience $\alpha = .79$; and pre-BBS-parenting $\alpha = .78$, post-BBS-parenting $\alpha = .74$. Overall, these analyses indicated two distinct factors underlying participant responses to the BBS items and that these factors are moderately internally consistent. For the following analyses, the total BBS score will be used.

Pre-Post Simple Changes in Scores

Similar to Kordich Hall and Pearson's (2016) evaluation, the effectiveness of the program in terms of mean change for pre-BBT scores and post-BBT scores was examined using a paired samples t-test (see Table 5). Uniquely from Kordich Hall and Pearson's (2016) report, the analyses in this section were ran utilizing a multiple imputation method and the multiple imputations were pooled to allow for greater precision in the analyses. All effect size calculations and evaluations of the percentages that showed improvement, stayed the same, or worsened, were calculated using the original non-imputed data. The mean change pre-BBS and post-BBS scores were found to be statistically significant, $t(15330002) = -11.497$, $p < .001$, $d = .56$. Of the 440 parents that participated in BBT, the total pre- and post-BBS scores were calculated for 404 participants (36 missing data). Of the 404, 129 (32%) reported a decrease in resilience skills, 24 (6%) reported no change in resilience/parenting skills, and 251 (62%) showed an increase in resilience and parenting skills.

The effectiveness of the program in terms of mean change for pre-stress to post-stress were found to be statistically significant, $t(2762) = 6.562$, $p < .001$, $d = 0.26$. Due to the aforementioned printing error with the DASS-S, there were 170 missing data points, resulting in 270 participants having valid total pre- and post-DASS-S scores. Of the 270 participants, 83 (31%) reported worsening symptoms of stress, 33 (12%) reported no change, and 154 (57%) reported improved symptoms of stress pre- to post-BBT. The effectiveness of the program in

terms of pre- to post-DASS-D change were found to be statistically significant, $t(123391) = 6.171$, $p < .001$, $d = 0.28$. Of the 440 participants that completed BBT, 402 had valid pre- and post-DASS-D total scores (38 missing data). Of these 402 participants, 109 (27%) experienced worsening symptoms of depression, 85 (21%) reported no change, and 208 (52%) experienced improved symptoms of depression pre- to post-BBT. These findings are consistent with those reported by RIRO's (2016) evaluation.

Table 5

Mean, SD, Skewness, Kurtosis, and Mean Change

	Mean	SD	Skewness	Kurtosis	Mean Change
Pre-BBS total	47.3	9.2	-0.01	-0.38	4.6*
Post-BBS total	51.9	8.8	-0.08	-0.39	
Pre-DASS-S	8.1	3.9	0.58	0.28	-1.1*
Post-DASS-S	7.0	3.9	1.36	4.01	
Pre-DASS-D	4.9	4.3	1.13	1.09	-1.1*
Post-DASS-D	3.7	4.0	1.76	4.27	

*p < .001

Associations Between Demographics and Simple Change Scores

A regression analysis was used to determine whether demographic variables were predictive of changes in scores from pre-program to post program. To assess simple change in scores, post-program scores were subtracted from pre-program scores. All three measures were included in the analysis: resiliency (BBS), stress (DASS-S), and depression (DASS-D), and the imputed data utilized. The assumptions of regression were evaluated, as well as the bivariate correlation of the study variables (Table 6).

Table 6

Bivariate Correlations of the Study Variables

	Pre-BBS total	Pre-DASS-S total	Pre-DASS-D total	Post-BSS total	Post-DASS-S total	Post-DASS-D total	BBS Change Score	DASS-S Change Score	DASS-D Change Score
Pre-BBS total	-	-.57**	-.52**	.59**	-.31**	-.32**	-.50**	.24**	.22**
Pre-DASS-S total		-	.63**	-.38**	.44**	.31**	.21**	-.54**	-.30**
Pre-DASS-D total			-	-.42**	.32**	.53**	.12*	-.30**	-.52**
Post-BBS total				-	-.42**	-.54**	.41**	-.07	-.12*
Post-DASS-S total					-	.61**	-.13*	.53*	.31**
Post-DASS-D total						-	-.20**	.27**	.45**
BBS Change Score							-	-.31**	.34**
DASS-S Change Score								-	.57**
DASS-D Change Score									-

* = p < .05; ** = p < .01

When examining whether demographic variables predict BBS simple change scores, all demographic variables (i.e., gender, sessions missed, education, and parenting or not) were added into the regression model. The overall regression model was significant ($F(5, 439) = 3.38$, $p < .01$), and accounted for 7% of variance suggesting that the demographic variables predict differences in BBS simple change scores. Higher levels of education (unstandardized B = .72, 95% CI [.22, 1.42], $t = 2.02$, p = .04) and gender (i.e., being female; unstandardized B = 2.37, 95% CI [.034, 4.71], $t = 1.99$, p = .05) were unique significant predictors of the BBS difference scores. Due to the significant influence that education and gender had on change in BBS scores, both were held constant (considered a covariate) in an ANCOVA analysis. The original data set (i.e., non-imputed data) was used to run the ANCOVA analysis as SPSS was unable to pool the data for this analysis. Education significantly predicted change in resilience scores, unstandardized B = 1.79, 95% CI [.43, 1.79], $F(1, 362) = 10.23$, $p = .002$; however, gender alone did not significantly predict change in BBS scores (p = .64). When education and gender were controlled for as covariates, there was still a significant difference in simple change resilience scores, $F(46, 362) = 5.42$, $p < 0.001$, suggesting that BBT is able to build resilience skills regardless of education level and gender.

Similarly, to examine whether demographic variables predict stress simple change scores, all demographic variables (i.e., gender, sessions missed, education, and parenting status) were added into the same regression model. The overall model was significant accounting for 3% of the variance, $F(5, 439) = 2.273$, $p = .05$; however, when examining each demographic variable on its own, they did not significantly predict differences in stress simple change scores. Finally, all demographic variables were also added into a regression model to examine whether demographic variables predict depression simple change scores. The overall model was not

statistically significant (p = .49), and when all demographic variables were examined independently, they did not significantly predict depression simple change scores.

Reliable Change Index

The RCI was used to assess clinically meaningful change in perceptions of resilience, stress, and depression in participants across time from pre- to post-program (i.e., reliable change scores in resilience, stress, and depression). The formulas used to calculate the RCI can be found in Table 4, and all analyses utilizing RCI scores were completed with the original (non-imputed) data set. For BBS, the RCI analysis was conducted on all 371 participants who completed the self-report BBS questionnaire (69 missing data). Examination of the RCI showed that 53 of 371 participants (14%) showed a clinically significant increase in perceptions of resilience and parenting as measured by BBS from baseline to post-BBT (RCI BBS M = 0.57). Those that experienced a change in BBS of 14 points or greater (i.e., Post-BBS minus Pre-BBS) fell in the clinically significant change group. For example, the participants that experienced a change of 14 or greater points on their post-BBS score from their pre-BBS score achieved an RCI of 1.65 or higher (i.e., experienced clinically significant change pre- to post-BBT). Participants that experienced a clinically significant change differed from those that did not in terms of gender, $t(365)=2.038$, $p < .001$, and parenting status, $t(360) = 0.381$, $p < .001$. Therefore, those participants who were female and were parenting their children experienced greater RCI resilience scores.

In terms of DASS-S, the RCI analysis was conducted on participants who completed the self-report DASS-S questionnaire. Due to the printing error aforementioned, data was missing for 170 participants, therefore, the data of 270 participants were examined. Analysis of the RCI showed that 22 of 270 participants (8%) showed a clinically significant decrease in symptoms of

stress from baseline to post-DASS-S (DASS-S RCI M = -0.26). Those that experience a change in DASS-S (i.e., post-DASS-S minus pre-DASS-S) of -7 points or less fell in the clinically significant change group. For example, participants that experienced a change of -7 or less points on their post-DASS-S score from their pre-DASS-S score achieved an RCI of -1.65 or lower (i.e., experienced clinically significant decrease in stress pre- to post-BBT). Participants that experienced a clinically significant change differed statistically in terms parenting status from those that did not experience a clinically significant change, $t(259)= -1.682$, $p < .001$. Therefore, the participants that were currently parenting experienced greater improvements in RCI stress scores.

Finally, participants post-DASS-D score was compared to their baseline (pre-DASS-D) score. The RCI analysis was conducted on all 402 participants who completed the self-report DASS-D questionnaire (38 missing data). Examination of the RCI showed that 32 of 402 participants (8%) showed a clinically significant decrease in depressive symptoms from baseline to post-BBT (DASS-D RCI M = -0.26). Those that experienced a change in DASS-D (i.e., post-DASS-D minus pre-DASS-D) of -7 points or less fell in the clinically significant change group. Therefore, in order to experience a clinically significant change in symptoms of depression, participants would have experienced a decrease in depression symptoms of -7 points or less. There were no differences between groups (i.e., clinically significant change group versus non-clinically significant change group) on any of the demographic variables tested.

Predicting BBS RCI Scores

A hierarchical regression analysis was used to determine whether demographic variables, and/or pre-program levels of stress (i.e., pre-DASS-S) or depression (pre-DASS-D) were predictive of reliable change in resilience scores (i.e., BBS RCI). Only resilience (BBS) was

examined in this analysis with the original (non-imputed) data used, as the purpose of BBT was to increase parental resilience. The assumptions of regression were evaluated, as well as the bivariate correlation of the variables examined in this analysis (Table 7).

Table 7

Bivariate Correlations of the Demographic Variables, Pre-Stress, Pre-Depression, and BBS RCI

	Gender	Sessions Missed	Education	Parenting Status	Number of Children	Pre-DASS-S	Pre-DASS-D	BBS-RCI
Gender	-	.05	-.003	.04	.000	-.03	.01	.06
Sessions Missed		-	-.18	.11	.04	.02	.09	-.11
Education			-	-.39**	-.07	.02	-.10	.16**
Parenting Status				-	-.10*	-.01	.11*	-.18**
Number of Children					-	.08	.05	-.02
Pre-DASS-S						-	.63**	.21**
Pre-DASS-D							-	.12*
BBS-RCI								-

* = p < .05; ** = p < .01

To examine the contribution of the demographic variables, as well as pre-stress and pre-depression scores on resilience reliable change scores, a hierarchical multiple regression analysis was performed (see Table 8). In step 1, all demographic variables (i.e., gender, parenting, sessions missed, education, and number of children) were entered on the first block. In step 2, participants pre-stress score and pre-depression score (i.e., pre-DASS-S total and pre-DASS-D

total) were entered. The overall model was statistically significant and accounted for 11% of the variance, $F(7, 149) = 2.48$. $p = .02$. The block of participant demographic variables accounted for the greatest amount of variance in resilience reliable change scores (8%). Within this step, whether participants were parenting or not was statistically significant at entry. The addition of the pre-program symptoms of stress and depression block accounted for a lesser though still statistically significant proportion of the variance in BBS reliable change scores (3%). Within this step, participant's pre-stress was a significant predictor. With the addition of this block to the equation, parenting status was no longer a significant predictor.

Table 8

Hierarchical Regression Analysis

Step Variable	B	SE B	β	*r*	Tolerance	ΔR^2	*F* for ΔR^2
Step 1						.08	2.56*
Gender	.57	.35	.13	.11	.97		
Sessions Missed	-.09	.08	-.09	-.12	.99		
Education	.10	.09	.09	.17	.79		
Parenting Status	-.40	.19	-.19*	-.21	.81		
Number of Children	-.04	.10	-.04	-.02	.88		
Step 2						.03	2.18*
Gender	.59	.34	.14	.11	.97		
Sessions Missed	-.10	.08	-.10	-.12	.98		
Education	.10	.09	.10	.17	.80		
Parenting Status	-.36	.19	-.17	-.21	.78		

Number of Children	-.08	.10	-.07	-.02	.85
Pre-Stress-Total	.07	.03	.21*	.12	.61
Pre-Depression -Total	-.03	.03	-.10	-.02	.61

Note. Final $R^2 = .11$; final adjusted $R^2 = .07$; *$p < .05$.

Discussion

Resilience is a complex interplay of systems that allow individuals and families to bounce back from life's hardships (Masten & Barns, 2018; Ungar, 2021; Walsh, 2021). Potential hardships include adverse childhood experiences, which have been linked to increased risk of later psychopathology for the individuals that experience such events (Afifi et al., 2016; Kessler, 2010). Resilience, as a system, can influence this trajectory and protect these individuals from the development of later mental health difficulties (Bonanno et al., 2012; Masten, 2011). As a result, researchers have become interested in developing programs to bolster and foster resilience in individuals, with aims of building these skills to protect them from mental health difficulties (Alvarado & Kumpfer, 2000; Kazdin, 1993; Liddle & Hogue, 2002; Taylor & Biglan, 1998), stressors (Smith et al., 2018), and/or adverse experiences (Kessler et al., 2010). Such programs have been shown to be effective in reducing stress (Smith et al., 2018) and symptoms of depression (Luthar & Cicchetti, 2000; Poole et al., 2017), and effective in building resiliency skills (Kummabutr et al., 2017; Smith et al., 2018); however, programs developed and evaluated specifically for the Canadian population are sparse. There is a significant need to develop and examine a program for this population that is cost effective, and specific to Canada's unique history (Matthews, 2014) and population diversity (Statistics Canada, 2016). BBT may be such a program, and has been utilized with parents of children 8 years and younger since 2012.

As part of a larger exploration of the effectiveness of the BBT program, the primary goal of the current project was to conduct a secondary analysis of the existing BBT data independently from the program developers. The secondary analysis was meant to (1) examine the construct validity by utilizing EFA to determine the factor structure of the BBS, independent from the original analysis, and (2) to conduct an independent analysis of the evaluation data to

determine BBT program effectiveness. Therefore, throughout the following sections I will compare and verify the original analyses conducted by the BBT program developers with the current analyses, as well as expand on the description of additional analyses ran to further discuss BBT effectiveness.

Bounce Back Subscale

Objective one involved exploring the factor structure of the BBS independently from the original analysis. In their justification for the need of the BBS, RIRO (2010) had identified a number of resilience measure limitations that must be addressed. RIRO (2010) noted that: (1) resilience scales tend to focus on risks, not strengths; (2) measures that examined multiple levels of resilience (i.e., internal and external factors) were in the early stages of development; (3) measures that contained the depth required for planning and assessing interventions were lacking evidence; (4) measures sensitive to relative change and that accurately measured significant change were non-existent; (5) there was a need for culturally-sensitive measures of resilience for clinical and educational assessment or monitoring; and, (6) there were no strengths-based measures for parents. Based on these gaps identified by RIRO (2010), it appears that when Morrison and Kordich Hall (2012) developed the BBS, they were able to meet many of these goals. First, Morrison and Kordich Hall (2012) utilized strengths-based questions throughout BBS that focused on optimism, self-efficacy, emotional control, and emotional regulation, which accounted for five of 15 items. However, the remaining 10 items were deficit-based and queried pessimism, personalization, over-generalization, and perfectionism. A true strengths-based approach is guided by the notion that regardless of current functioning (or in this case, current resilience levels), each parent's inherent strengths and skills may be drawn upon to foster change (Epstein, 1999). Due to this, a potential critique of the BBS is that perhaps a strengths-based

approach could have been better incorporated by including items specific to resilience skills already being fostered, rather than a heavier focus on when skills are not being utilized. RIRO (2010) also noted that there were few resilience scales that measured both external and internal factors of resiliency that were psychometrically sound. Questions in the BBS covered both external and internal factors of resiliency, and the psychometrics of the scale appear to be adequate, therefore, achieving this goal. Next, Morrison and Kordich Hall (2012) were able to create a scale adequate for planning and assessing interventions, as well as a measure that was sensitive to change, as shown by the changes achieved pre- to post-assessment based on what their program was targeting (resilience and parenting skills). Morrison and Kordich Hall (2012) endeavored to make a scale that was culturally-sensitive, however, Pearson and Kordich Hall (2016) did not collect data about participant's ethnic or cultural background to allow for an examination of whether responses or trends differed among participants with different ethnic backgrounds. Therefore, further evaluation is needed to determine whether BBS is a culturally-sensitive measure of resilience for clinical assessment and monitoring. Finally, Morrison and Kordich Hall (2012) were able to meet the goal of making a psychometrically sound parent-specific resiliency scale. Overall, it appears that Morrison and Kordich Hall (2012) were able to address a majority of the limitations brought forth by RIRO (2010), although more evaluation is needed to determine the cultural-sensitivity of the measure and whether the measure is truly a strengths-based resiliency measure.

This secondary analysis found differences in the factor structure of the BBS compared to Morrison and Kordich Hall's (2012) original evaluation. The current study found a two-factor solution for the BBS, which differed from the four-factor solution originally reported (Morrison & Kordich Hall, 2012). Unfortunately, and as previously discussed, Morrison and Kordich Hall

(2012) did not provide sufficient information as to how they arrived at their four-factor solution, or explain the extraction methods used for the EFA. Based on the current evaluation, utilizing current best practice methods, the two-factor solution appeared adequate and theoretically sound based on the two constructs BBT were hoping to target: perceptions of resiliency skills (factor one), and perceptions of parenting (factor two). The internal consistency of each factor was adequate both pre and post (α ranging from .74 to .79), providing evidence in support of the two-factor solution. Further examination of the BBS's overall construct validity is needed, including an evaluation of convergent, discriminant, and predictive validity. Overall, however, the BBS measure appears to hold structural validity and sufficiently measure parents' perceptions of resiliency and parenting.

Program Effectiveness

Objective two involved an independent analysis of the BBT evaluation data to determine program effectiveness. Results indicated, similarly to Kordich Hall and Pearson's (2016) evaluation, that BBT is effective in terms of increasing parent perceptions of resilience and parenting, as well as decreasing parent symptoms of depression and stress. Specifically, a majority of parents (62%) experienced positive change in perceptions of resilience, as well as decreased stress (57%) and symptoms of depression (52%). These results were consistent with Kordich Hall and Pearson's (2016) analysis even with a preferred missing data imputation process used. Not only are these results consistent with those reported by Kordich Hall and Pearson (2016), but they are comparable to other resilience building programs.

Another way program effectiveness was evaluated was in terms of clinically significant change – or RCI scores. The RCI score is a better indicator of program success as it allows for an evaluation of the magnitude of change and to determine whether the difference in scores were

meaningful and not a result of measurement error (Jacobson & Truax, 1991). As a result, 14% of participants experienced a clinically significant change in perceptions of resilience and parenting, 8% a clinically significant decrease in stress, and 8% a clinically significant decrease in symptoms of depression.

When evaluating BBT in comparison to other resilience building programs, findings appear to be consistent with the current literature. Although the current resilience literature has found some promising results, researchers rarely actually measure resilience and instead measure constructs of mental health (e.g., depression and anxiety symptoms reduction; e.g., see Brunwasser et al., 2009). The present study expands on the resilience literature by directly investigating changes in resilience. In doing so, we also discovered promising changes in resilience, with a moderate magnitude of effects. In terms of mental health aspects that have been investigated, meta-analyses evaluating program aimed at reducing depression and increasing resilience have found small effects post-program (e.g., d = .09; Gillham et al., 2008), small effects compared to controls (d = .11; Brunswasser et al., 2009) or no effects post-program (e.g., Bastounis et al., 2016). Our findings regarding depressive symptoms are comparable (d = .28), suggesting that although participants reported less symptoms of depression, the overall magnitude of change was small. Furthermore, our findings of moderate effects for changes in resilience (i.e., d = .56) exceed the other program's findings in terms of program effectiveness (Bastounis et al., 2016; Brunwasser et al., 2009; Gillham et al., 2008). The present study's review of the literature found that another resilience program that measured changes in stress found statistically significant changes pre- to post-program (Smith et al., 2018); however, no effect size for reducing stress symptoms was reported. The results of the present study are consistent with previous findings (i.e., Smith et al., 2018) such that participants experienced a

reduction of stress symptoms, however, our findings revealed that the effects of BBT were small (i.e., $d = .26$; stress symptoms decreased minimally pre to post). As a result, the current study confirmed Kordich Hall and Pearson's (2016) previous evaluation, but also expanded on both their evaluation and the current literature.

Demographic Variables Influence on Change Scores

Due to the potential influence that participant variables can have on the success of intervention (Spek et al., 2008), the current study evaluated the influence of participants' demographic characteristics on simple change and reliable change scores for resilience, stress, and symptoms of depression.

Gender

Gender differences were highlighted such that female participants experienced higher simple change in resilience scores. Similarly, when examining group differences in terms of resilience reliable change scores (i.e., whether the non-clinical change group differed from the clinical change group), participants also differed in terms of gender. This finding of gender differences in program effectiveness are consistent with past literature that found women participants improved more after treatment (Spek et al., 2008). Similar to Spek and associates (2008), the current sample was not representative and had few male participants (i.e., 12% male participants), which may have resulted in biased results. This under-representation of male participants is consistent across parent training, CBT interventions, and resilience programs (Bögels et al., 2013; McCusker et al., 2016; Watson & Nathan, 2008; Wong et al., 2018). The underrepresentation of fathers may be due to several factors including how and where the program was offered, as well as the materials used. The program was typically offered during the day for consecutive weeks, which introduces a number of barriers for potential male attendance

as males are still more likely to be working full time compared to women (Statistics Canada, 2018). It is also likely due to the fact, as highlighted by Statistics Canada, that women are still more likely to provide childcare and to be the main caregiver at home (Houle et al., 2017) and as such, may be more likely to participate in parenting interventions. The program materials were also created by women, were more feminine and not specifically tailored to fathers (e.g., participants were asked to develop a feelings flower), which may have influenced attendance. Finally, mental health stigma may also play a role where males may be less likely to attend BBT due to the gender differences that exist in terms of help seeking for psychological disorders (World Health Organization (WHO), 2021). For example, men are less likely to seek help and disclose mental health problems (WHO, 2021), therefore, this may have influenced father's willingness to participate in a parenting intervention program.

When gender was further examined as a unique predictor and examined as a potential covariate of simple resilience change scores, there was no significant effect found for predicting resilience pre- to post-program. This is consistent with earlier intervention studies that found no significant gender difference in the effectiveness of CBT (Thase et al., 1994; Watson & Nathan, 2008). While there are some mixed results in the literature regarding gender and CBT outcomes (Watson & Nathan, 2008), it appears to be more common for both male and female participants to experience similar gains (Joshi & Yadav, 2016; Thase et al., 1994; Watson & Nathan, 2008). Therefore, the initial finding that gender (i.e., being female) was related to higher change in resilience scores may reflect the high percentage of women that participated in the program, and the fact that we were unable to gather sufficient evidence due to the small percentage of males that participated in BBT. Because there was still a significant change in resilience when gender was controlled for, this highlights that although some demographic variables influence change in

resilience scores, male participants still experience positive benefits of BBT. Specifically, female participants appear to make greater gains than males during BBT participation, but male participants still experience statistically significant gains even though they are of a smaller magnitude.

Education Level

Participant education was also examined and found to be related to resilience simple change scores, and to be a unique predictor of resilience simple change scores. This finding of education as a predictor of program success is consistent to the finding of an internet-based CBT program which found that participants with higher education improved more after treatment (Spek et al., 2008). Spek and associates (2008) hypothesized that education played a role in program success due to their highly educated sample, which is common in CBT research – participants tend to be white, middle class, female, and highly educated individuals (Wong et al., 2018). An overrepresentation of educated participants may have also impacted these results (i.e., 62% achieved some college/university or higher). Another possible explanation is that educated individuals are more likely to have effective learning techniques that are utilized during BBT (Morrison & Kordich Hall, 2012), which resulted in higher levels of change. Morrison and Kordich Hall (2012) suggested that participants with a higher degree of education may be more likely to absorb and use the resilience skills being taught afterwards due to their practice of these skills while in the education system. Similarly, Warmerdam and colleagues (2013) found that education level predicted improvement in all groups (internet-based CBT and guided internet-based problem-solving therapy) with higher education predicting the likelihood of improvement. Because BBT uses a predominantly didactic teaching style, with some practice of skills among participants, this delivery is likely more familiar to those that have had formal education;

therefore, expanding on BBT delivery to include experiential learning during sessions may appeal to a broader population including those with lower education.

When education was controlled for there was still a significant change in resilience scores highlighting that regardless of education, participants still experienced a significant positive change in resilience. This is consistent with other CBT program evaluations where education did not play a role in program effectiveness for veterans (Brown et al., 2016), for adults suffering from insomnia (Cheng et al., 2018), and for adults with depression (Donker et al., 2013). The result that education plays a role in program effectiveness emphasizes that those with higher education made greater gains in treatment, but when education level is controlled for, participants still experience significant change. This finding suggests that regardless of education level, individuals still benefit from BBT.

Parenting Status

Participants that experienced reliable change in stress differed from those who did not in terms of whether they were currently parenting their children or not. Similarly, parenting status was also a predictor of reliable change scores for resilience; therefore, those that were currently parenting were more likely to experience clinically significant change than those that were not currently parenting. These results may suggest that those who are not parenting their children are likely involved in the child welfare system and may have had higher levels of overall stress (Rodriguez-JenKins & Marcenko, 2014). This finding may also suggest that parents that are able to utilize the learned skills at home, practice, and discuss with their children, experience more success and significant changes in resiliency by attending BBT. As noted by Pearson and Kordich Hall (2017), a goal of the program is to have parents teach these skills to and practice these skills with their children in order to have their child(ren) mimic these skills in everyday

life. Therefore, parents that participated in the program that were currently parenting their child(ren) were likely more able to practice these skills, which may result in larger changes experienced.

Research suggests that parents who receive parent training and complete higher rates of homework experience more positive parenting outcomes (i.e., increased positive parenting skills and decreased levels of parenting stress) and child outcomes (i.e., decreased levels of externalizing behavioural problems; Ros et al., 2016). Although Ros and colleagues (2016) were evaluating behavioural parent training for children with or at risk for developmental delays, their finding of the effects of parent's at-home practice of skills influencing parenting outcomes may explain the effects found in BBT for parents that are currently parenting versus those that are not. Another potential factor that may influence the difference in success for parents based on parenting status is parent engagement (Maltais et al., 2019). Perhaps parents that have their children at home to practice with are more engaged during the session as they know they will be practicing these skills almost immediately. For the participants that are not currently parenting, they may be less engaged as they cannot practice the skills with their children afterwards. Engagement is a predictor of parental success in reunification programs (Maltais et al., 2019), and likely played a role in clinically significant change in resilience scores. In sum, parents that were currently parenting were more likely to experience simple changes in stress and clinically significant change in resilience scores, perhaps due to the higher levels of homework practiced at home (Ros et al., 2016), and/or higher engagement because they were planning to practice at home (Maltais et al., 2019).

The Role of Pre-Existing Stress in Predicting Reliable Change of BBS Scores

Stress, and specifically chronic stress, can have detrimental effects on parents such as increased risk of depression, anxiety, and drug and alcohol use, as well as parental anger, and negative impacts to physical health (Deater-Deckard, 2004). In turn, each of these risk factors then pose a greater risk on parents' ability to parent effectively and care for their children, which can result in the children experiencing a number of difficulties, such as externalizing and/or internalizing problems (Deater-Deckard, 2004). Parental stress is perhaps most salient for families navigating a number of significant stressors (e.g., children with mental and physical disabilities, family violence, poverty; Bögels et al., 2013; Deater-Deckard, 2004). In addition to these stressors, parenting in general is an all-encompassing challenging, rewarding, pleasant, and stressful experience (Bögels et al., 2013). Therefore, because parenting is already a challenging task, it can be further complicated by additional parent or child difficulties (Bögels et al., 2013; Deater-Deckard, 2004). This highlights the importance of programs like BBT in potentially mitigating parental stress.

Evaluation of BBT revealed that parental stress pre-program was the only unique predictor of clinically significant change in resilience. In other words, parents who were experiencing higher levels of stress pre-BBT were more likely to experience clinically significant change in resilience scores. This finding is important to the support of the BBT program suggesting that not only is it able to build resilience, but it's able to result in clinically significant change in resilience for those that were already experiencing high levels of stress.

This finding, which indicates that parents with higher levels of stress pre-program experienced greater resilience change, is consistent with the aforementioned literature suggesting that resilience is only fostered during stressful times (Davydov et al., 2010; Forbes & Fikretoglu,

2018; Schoon, 2021). Fostering resilience during stressful times is consistent with the targeted approach of resilience building programs (Belsky & Pluess, 2013; Forbes, & Fikretoglu, 2018; Schoon, 2021). At the core of the targeted approach is the assumption that programs should be provided to at-risk individuals – or in BBT's case, parents experiencing high levels of stress. The current investigation supports a number of studies (e.g., Brunwasser et al., 2009; Horowitz & Garber, 2006; Merry et al., 2004; Stice et al., 2009) that have found that targeted approaches a more effective, and should be the preferred model to helping individuals.

Implications

The current study found evidence, consistent with the current literature, that male participants (Spek et al., 2008) and individuals with lower education (Spek et al., 2008; Warmerdam et al., 2013) experienced less change in resilience scores. Notably, however, when the change in resilience was examined independently, these individuals still experienced a statistically significant change in resilience. This provides support that regardless of gender and education, participants will still benefit from BBT. Nevertheless, these findings highlight a number of key considerations for program development and adaptations: (1) the times and locations the program is offered needs to be flexible, (2) the program must be father friendly and appealing to male participants, and (3) the program needs to be appealing and accessible to all regardless of educational background.

A predictor of success in the program is participant's parenting status (i.e., whether they were currently parenting or not). This may be a result of the program's approach to building resilience: teaching the parents skills to teach their children and model for their children. Perhaps without seeing their children, it created less engagement, and resulted in less practice at home, both of which are predictors of effectiveness of other programs (Maltais et al., 2019; Ros et al.,

2016). As a result, individuals that participated in BBT that were currently parenting achieved more significant levels of change than those that are not parenting, and should perhaps be a consideration when creating parenting programs for reunification purposes. As parent training/education is often a required part of family reunification, the results of this study highlight that parents working toward reunification must be provided with not only access to their children, but also be actively supported to practice what they have learned with their children.

Finally, consistent with the resilience literature, the present study revealed support for resilience being fostered and developed during stressful times (Davydov et al., 2010; Forbes & Fikretoglu. 2018; Schoon, 2021). This relationship was supported as participants with the highest levels of stress were most likely to experience clinically significant change in resilience. The current study supports the views of those scholars who assert that it is futile to utilize a universal approach, as resilience may not be fostered without a stressor (Davydov et al., 2010; Forbes & Fikretoglu. 2018). Therefore, the "inoculation" or "vaccination" approach to mental health concerns was not supported in this research, instead the current project found support for the targeted approach of resilience building.

Limitations

Although there are notable strengths of the current secondary analysis, there are a number of limitations that must be noted. First, the reliance on self-report data may have resulted in recall bias or halo effects, where respondents may have been answering more positively post-intervention due to the fact that they knew they were trained on specific skills. Self-report of resilience change is also problematic as resilience may not be the construct being measured, but instead it may be measuring protective factors, in which it is unknown exactly how an increase in

protective factors translates to greater resilience (Bonanno et al., 2011; Robertson et al., 2014). Bonanno and colleagues (2011) also noted a limitation of utilizing a self-report resilience scale such that it may reflect how confident the participant is in their resilience, and not their actual resilience. Next, there was no follow-up data obtained from the participants (i.e., 1-month, 6-month follow-up) to determine the long-term effects of BBT. Another larger limitation is that the program's evaluation was not completed utilizing a randomized control trial (RCT) methodology, increasing risk of these aforementioned limitations and not allowing for further evaluation (Hariton & Locascio, 2018). Because BBT was not evaluated utilizing RCT protocols, the current study is limited in its ability to discuss the efficacy of the program, determine whether it is an evidence-based program, and to examine cause-and-effect between intervention and outcome (Hariton & Locascio, 2018). Finally, and as mentioned previously, the sample was not representative in terms of gender. A majority of the participants were female, therefore, our ability to discuss resilience change or program effectiveness for male participants is limited.

Areas for Future Research

The present study demonstrated promise for the use of a parenting specific resilience scale, although the BBS still needs further evaluation to determine construct, discriminant and concurrent validity, as well as an evaluation to determine whether it's a culturally-sensitive measure. Importantly, the BBT program was also found to be more effective for participants that are currently parenting, and therefore, introduces the need to further evaluate program delivery for parents that do not have custody of their child(ren). In terms of representativeness of the sample, an aim of future BBT programs should be to actively recruit fathers to ensure that they experience similar benefits of the program. Future BBT programs should also aim at flexible delivery of the program, making the materials appealing to fathers, and ensuring that it is

accessible to all education levels. The current study also found mixed results in terms of benefits of BBT for stress and depression. Overall, BBT appears to lead to overall significant mean changes in stress and depression in participants, however, when the effect sizes were evaluated, both were small suggesting that BBT minimally decreased symptoms of depression and stress. Conversely, this evaluation was strong in terms of examining the real-world application of a resiliency program. However, an RCT evaluation is needed to determine the efficacy of this program in increasing program attendee's resiliency compared to controls. An RCT with follow up measurement will also allow for further evaluation of BBT's influence on changes in symptoms of stress and depression, and to determine long-term effects of BBT.

Another consideration brought forth by the current study and literature review is whether program development should include the emerging concept of a process/systems approach to resilience (Ungar, 2021; Walsh 2013; 2021). BBT utilized a CBT/skills approach to resilience building, which is a more individualized approach. BBT, however, may be building on process/systems resilience theory due to the family system and systems within the family that the program is targeting (e.g., the program is designed for parents to learn resilience skills and to also learn and teach resilience skills to their children). Current researchers (Twum-Antwi et al., 2020) call for evaluations of multisystemic approaches to promote child and youth resilience by strengthening both the home and the school environments. Although the BBT program was effective in terms of enhancing parental resilience, an evaluation of the programs cascading effects on the children must be examined to truly determine the effectiveness of BBT on the family system. Current findings suggest that parents are able to teach CBT skills to their own children suffering from anxiety, and that this format is just as effective as children with anxiety directly receiving solution focused brief therapy (Creswell et al., 2017). Creswell and colleagues

(2017) findings provide support that the BBT framework will likely be effective, however, BBT must be evaluated independently to ensure that children are benefitting of this program.

Strengths and Significance of Study

Despite the aforementioned limitations, this study has notable strengths. First, the present study is an important first step to verifying a promising Canadian resilience building program. In doing so, this current evaluation fills an important gap in the literature providing evidence of a promising cost-effective resiliency program for Canadian families. This study also included a variety of methodological strengths. For example, the large sample size allowed enough power to detect effects, and examine program effectives. The original data comprised multiple years of data collection (2012-2016) which included multiple program offerings at different sites and by different facilitators, and included data collected at two time points for each participant to allow for evaluation of change over time. For missing data, the preferred and well-supported multiple imputation method was used to allow for more precise estimations of missing data and to eliminate potential data biases (Van Buuren, 2018). In addition, the present study utilized empirically validated scales that demonstrated high levels of reliability across research and with the present sample (i.e., the DASS-21), as well as provided support for a new resilience scale for parents that is in the early stages of development but has promising reliability and validity. These scales allowed for meaningful and reliable evaluation of changes over time for the participants pre-intervention to post-intervention. Finally, because BBT has been implemented across Canada, with a variety of participants, and across multiple years, we have strong support for the ecological validity of program effectiveness.

Taken together, the present study took an important step towards investigating whether BBT is an evidence-based resiliency program. In doing so, this study completed an independent

analysis of the BBT data, and expanded on the previous analyses of the data. This study also provided evidence that although some demographic variables influence success of program in terms of change in resilience, these factors do not influence overall effectiveness, highlighting that regardless of gender or education participants still experienced significant change. Most importantly, this evaluation also expanded the literature in terms of utilizing targeted approaches as it found that resilience can be built in parenting programs and is especially effective for parents that are already under a high level of stress. Combined, the effectiveness of BBT appears to be effective in increasing resiliency skills, and decreasing stress and symptoms of depression. The findings of this study provide a foundation of future research and support the use of BBT in fostering resilience in Canadian parents, with the aim of bolstering family resilience.

References

Afifi, T. O., MacMillan, H. L., Boyle, M., Cheung, K., Taillieu, T., Turner, S., & Sareen, S. (2014). Child abuse and mental disorders in Canada. *Canadian Medical Association Journal, 186*(9), E324-E325. https://doi.org/10.1503/cmaj.131792

Afifi, T. O., MacMillan, H. L., Boyle, M., Cheung, K., Taillieu, T., Turner, S., & Sareen, S. (2016). *Health Reports: Child abuse and physical health in adulthood*. https://www150.statcan.gc.ca/n1/pub/82-003-x/2016003/article/14339-eng.htm

Alvarado, R., & Kumpfer, K. L. (2000). Strengthening America's families. *Juvenile Justice, 7*(2), 8–18. https://doi.org/10.1037/e321342004-002

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Author

Ávila, M. P. W., Lucchetti, A. L. G., & Lucchetti, G. (2016). Association between depression and resilience in older adults: A systematic review and meta-analysis. *International Journal of Geriatric Psychiatry, 32,* 237-246. https://doi.org/10.1002/gps.4619

Bastounis, A., Callaghan, P., Banerjee, A., & Michail, M. (2016). The effectiveness of the Penn Resiliency Programme (PRP) and its adapted versions in reducing depression and anxiety and improving explanatory style: A systematic review and meta-analysis. *Journal of Adolescence, 52,* 37-48. http://dx.doi.org/10.1016/j.adolescence.2016.07.004

Bauer, H., Emeny, R. T., Baumert, J., Ladwig, K. H. (2016). Resilience moderates the association between chronic pain and depressive symptoms in the elderly. *European Journal of Pain, 20,* 1253–1265. https://doi.org/10.1002/ejp.850

Beasley, M., Thompson, T., & Davidson, J. (2003). Resilience in response to life stress: The effects of coping style and cognitive hardiness. *Personality and Individual Differences, 34*(1)*,* 77–95. https://doi.org/10.1016/S0191-8869(02)00027-2

Belsky, J., & Pluess, M. (2013). Beyond risk, resilience, and dysregulation: Phenotypic plasticity and human development. *Development and Psychopathology, 25,* 1243–1261. http://dx.doi.org/10.1017/S095457941300059X

Boden, J. M., Sanders, J., Munford, R., Liebenberg, L., & McLeod, G. F. H. (2016). Paths to positive development: A model of outcomes in the New Zealand youth transitions study. *Child Indicators Research, 9*(4), 889–911. https://doi.org/10.1007/s12187-015-9341-3

Bögels, S. M., Hellemans, J., van Deursen, S., Römer, M., & van der Meulen, R. (2013). Mindful parenting in mental health care: Effects on parental and child psychopathology, parental stress, parenting, coparenting, and marital functioning. *Mindfulness, 5,* 536-551. https://doi.org/10.1007/s12671-013-0209-7

Bonanno, G. A., & Diminich, E. D. (2013). Annual research review: Positive adjustment to adversity–trajectories of minimal-impact resilience and emergent resilience. *Journal of Child Psychology and Psychiatry, 54,* 378–401. https://doi.org/10.1111/jcpp.12021

Bonanno, G. A., Mancini, A. D., Horton, J. L., Powell, T. M., Leard Mann, C. A., Boyko, E. J., Wells, T. S., Hooper, T. I., Gackstetter, G. D., Smith, T. C., & For the Millennium Cohort Study Team. (2012). Trajectories of trauma symptoms and resilience in deployed US military service members: Prospective cohort study. *British Journal of Psychiatry, 200*, 317–23. https://doi.org/10.1192/bjp.bp.111.096552

Bonanno, G. A., Westphal, M., & Mancini, A. D. (2011). Resilience to loss and potential trauma. *Annual Review of Clinical Psychology, 7,* 511–535. http://dx.doi.org/10.1146/annurev-clinpsy-032210-104526

Bounce Back and Thrive. (2012). *Bounce Back & Thrive! (BBT): Parent resiliency skills training.* https://www.reachinginreachingout.com/documents/Website-BBT-programdescription-May2016_000.pdf

Brown, G. K., Karlin, B. E., Trockel, M., Gordienko, M., Yesavage, J., & Taylor, C. B. (2016). Effectiveness of cognitive behavioral therapy for veterans with depression and suicidal ideation. *Archives of Suicide Research, 4,* 677-682. https://doi.org/10.1080/13811118.2016.1162238

Brunwasser, S. M., Gillham, J. E., & Kim, E. S. (2009). A meta-analytic review of the Penn Resiliency Program's effect on depressive symptoms. *Journal of Consulting and Clinical Psychology, 77*(6), 1042. https://doi.org/10.1037/a0017671

Cartwright, S., McNally, D., White, C., & Verduyn, C. (2005). Parenting skills training: An effective intervention for internalizing symptoms in younger children? *Journal of Child and Adolescent Psychiatric Nursing, 18*(2), 45-52. https://doi.org/10.1111/j.1744-6171.2005.00014.x

Cheng, P., Luik, A. I., Fellman-Couture, C., Peterson, E., Joseph, C. L. M., Tallent, G., Tran, K. M., Ahmedani, B. K., Roehrs, T., Roth, T., & Drake, C. L. (2018). Efficacy of digital CBT for insomnia to reduce depression across demographic groups: A randomized trial. *Psychological Medicine, 49*(3), 491-500. https://doi.org/10.1017/S0033291718001113

Chmitorz, A., Kunzler, A., Helmriech, I., Tüscher, O., Kalisch, R., Kubiak, T., Wessa, M., & Lieb, K. (2018). Intervention studies to foster resilience: A systematic review and

proposal for a resilience framework in future intervention studies. *Clinical Psychology Review, 59,* 78-100. https://doi.org/10.1016/j.cpr.2017.11.002

Connor, K. M., Davidson, J. R. T., & Lee, L. C. (2003). Spirituality, resilience, and anger in survivors of violent trauma: A community survey. *Journal of Traumatic Stress, 16,* 487–494. https://doi.org/10.1023/A:1025762512279.

Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation, 10*(7), 1-9. https://doi.org/10.7275/jyj1-4868

Davydov, D. M., Stewart, R., Ritchie, K., & Chaudieu, I. (2010). Resilience and mental health. *Clinical Psychology Review, 30,* 479–495. http://dx.doi.org/10.1016/j.cpr.2010.03.003

Deater-Deckard, K. (2004). *Parenting Stress*. Yale University Press.

Donker, T., Betterham, P. J., Warmerdam, L., Bennett, K., Bennett, A., Griffiths, K. M., & Christensen, H. (2013). Predictors and moderators of response to internet-delivered Interpersonal Psychotherapy and Cognitive Behavioural Therapy for depression. *Journal of Affective Disorders, 151*(1), 343-351. https://doi.org/10.1016/j.jad.2013.06.020

Epstein, M. H. (1999). The development and validation of a scale to assess the emotional and behavioural strengths of children and adolescents'. *Remedial and Special Education, 20*(5), 158-262. https://doi.org/10.1177/074193259902000501

Fergus, S., & Zimmerman, M. A. (2005). Adolescent resilience: A framework for understanding healthy development in the face of risk. *Annual Review of Public Health, 26,* 399-419. https://doi.org/10.1146/annurev.publhealth.26.021304.144357

Fletcher, D., & Sarkar, M. (2016). Mental fortitude training: An evidence-based approach to developing psychological resilience for sustained success. *Journal of Sport Psychology in Action, 7,* 135–157. http://dx.doi.org/10.1080/21520704.2016.1255496

Forbes, S., & Fikretoglu, D. (2018). Building resilience: The conceptual basis and research evidence for resilience training programs. *Review of General Psychology, 22*(4), 452-468. http://dx.doi.org/10.1037/gpr0000152

Fox, S. E., Levitt, P., & Nelson, C. A. (2010). How the timing and quality of early experiences influence the development of brain architecture. *Child Development, 81*(1), 28–40. https://doi.org/10.1111/j.1467-8624.2009.01380.x

Gillham, J. E., Brunwasser, S. M., & Freres, D. R. (2008). Preventing depression in early adolescence: The Penn Resiliency Program. In J. R. Z. Abela & B. L. Hankin (Eds.), *Handbook of depression in children and adolescents*. (pp. 309–322). Guilford Press.

Hariton, E., & Locascio, J. J. (2018). Randomised controlled trials: The gold standard for effectiveness research. *International Journal of Obstetrics & Gynaecology, 125*(130), 1716. https://doi.org/10.1111/1471-0528.15199

Hilliard, M. E., McQuaid, E. L., Nabors, L., & Hood, K. K. (2015). Resilience in youth and families living with pediatric health and developmental conditions: Introduction to the special issue on resilience. *Journal of Pediatric Psychology, 40*, 835–839. https://doi.org/10.1093/jpepsy/jsv072

Hogue, A., Liddle, H. A., Becker, D., & Johnson-Leckrone, J. (2002). Family-based prevention counseling for high-risk young adolescents: Immediate outcomes. *Journal of Community Psychology, 30,* 1-22. https://doi.org/10.1002/jcop.1047.

Horowitz, J. L., & Garber, J. (2006). The prevention of depressive symptoms in children and adolescents: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 74*, 401–415. https://doi.org/10.1037/0022-006X.74.3.401

Houle, P., Turcotte, M., & Wendt, M. (2017). *Spotlight on Canadians: Results from the General Social Survey: Changes in parents' participation in domestic tasks and care for children from 1986 to 2015*. Statistics Canada. https://www150.statcan.gc.ca/n1/pub/89-652-x/89-652-x2017001-eng.htm

Huppert, F. A., & Timothy, T. C. (2009). *What percentage of people in Europe are flourishing and what characterises them?* https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.550.8290&rep=rep1&type=pdf

Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59*(1), 12-19. https://doi.org/10.1037/0022-006X.59.1.12

Jones, P. B. (2013). Adult mental health disorders and their age at onset. *The British Journal of Psychiatry, 202*(s54), s5-s10. http://dx.doi.org/10.1192/bjp.bp.112.119164.

Joshi, R., & Yadav, K. (2016). Gender difference on emotional competence in reference to CBT intervention among depressed subjects. *Indian Journal of Positive Psychology, 7*(1), 93-96. https://doi.org/10.15614/IJPP/2016/V7I1/123697

Kalapurakkel, S., Carpino, E. A., Lebel, A., & Simons, L. E. (2015). ‘‘Pain can't stop me’’: examining pain self-efficacy and acceptance as resilience processes among youth with chronic headache. *Journal of Pediatric Psychology, 40,* 926–933. https://doi.org/10.1093/jpepsy/jsu091

Kazdin, A. E. (1993). Adolescent mental health: Prevention and treatment programs. *American Psychologist, 48*(2)*,* 127–140. https://doi.org/10.1037//0003-066x.48.2.127.

Kessler, R. C., McLaughlin, K. A., Greif Green, J., Gruber, M. J., Sampson, N. A., Zaslavsky, A. M., Aguilar-Gaxiola, S., Alhamzawi, A. O., Alonso, J., Angermeyer, M., Benjet, C., Bromet, E., Chatterji, S., de Girolamo, G., Demyttenaere, K., Fayyad, J., Florescu, S., Gal, G., Gureje, O., … Williams, D. R. (2010). Childhood adversities and adult psychopathology in the WHO World Mental Health Surveys. *The British Journal of Psychiatry, 197,* 378–85. https://doi.org/10.1192/bjp.bp.110.080499

Kordich Hall, D., & Pearson, J. (2016). *Bounce Back & Thrive! Summary 5 year evaluation results 2010-2016.* http://www.reachinginreachingout.com/documents/BBT-Evaluation-5years-4pgsummary-OCT13-16-FINAL.pdf

Kummabutr, J., Buaboon, N., & Sinsiri, C. (2017). Developing resiliency in children through family-based life skills training intervention: A randomized control trial. *Pacific Rim International Journal of Nursing Research, 21*(1), 59-74. https://doi.org/10.1111/j.1447-0349.2011.00754.x.

Kumpfer, K. L., & Alvarado, R. (2003). Family-strengthening approaches for the prevention of youth problem behaviours. *American Psychologist, 58*(6/7), 457-465. https://doi.org/10.1037/0003-066X.58.6-7.457

Kumpfer, K. L., Alvarado, R., Tait, C., & Turner, C. (2002). Effectiveness of school-based family and children's skills training for substance abuse prevention among 6-8-year old rural children. *Psychology of Addictive Behaviors, 16*(4), s65–s71. https://doi.org/10.1037/0893-164X.16.4S.S65

Kwok, S. T., Wong, W. N., & Lee, T. Y. (2014). Effect of resilience on self-perceived stress and experiences on stress symptoms: A surveillance report. *Universal Journal of Public Health, 2*, 64–72. https://doi.org/10.13189/ujph.2014.020205

Kyriazos, T. A. (2018). Applied psychometrics: Writing-up a factor analysis construct validation study with examples. *Psychology, 9*(11), 2503-2530. https://doi.org/10.4236/psych.2018.911144

Li, T., Hutfless, S., Scharfstein, D., Daniels, M., Hogan, J., Little, R., Roy, J., Law, A. H., & Dickersin, K. (2015). Standards in the prevention of handling of missing data for patient centered outcomes research: A systematic review and expert consensus. *Journal of Clinical Epidemiology, 67*(1), 15-32. https://doi.org/10.1016/j.jclinepi.2013.08.013.

Liddle, H. A., & Hogue, A. (2000). A family-based, developmental-ecological preventive intervention for high-risk adolescents. *Journal of Marital and Family Therapy, 26*, 265–279. https://doi.org/10.1111/j.1752-0606.2000.tb00297.x.

Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression Anxiety Stress Scales* (2nd ed.). Psychology Foundation of Australia.

Luthar, S. S., & Cicchetti, D. (2000). The construct of resilience: Implications for interventions and social policies. *Developmental Psychopathology, 12*, 857–885.

Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development, 71*(3), 543–562. https://doi.org/10.1111/1467-8624.00164

Maltais, C., Cyr, C., Parent, G., & Pascuzzo, K. (2019). Identifying effective interventions for promoting parent engagement and family reunification for children in out-of-home care:

A series of meta-analyses. *Child Abuse & Neglect, 88,* 362-375. https://doi.org/10.1016/j.chiabu.2018.12.009

Masten, A. S. (2011). Resilience in children threatened by extreme adversity: Frameworks for research, practice, and translational synergy. *Developmental Psychopathology, 23,* 493–506. https://doi.org/10.1017/S0954579411000198

Masten, A. S. (2018). Resilience theory and research on children and families: Past, present, and promise. *Journal of Family Theory & Review, 10,* 12-31. https://doi.org/10.1111/jftr.12255

Masten, A. S., & Barns, A. J. (2018). Resilience in children: Developmental perspectives. *Children, 5*(7), 98. https://doi.org/10.3390/children5070098

Masten, A., & Cicchetti, D. (2016). Resilience in development: Progress and transformation. In D. Cicchetti (Ed.), *Developmental psychopathology* (3rd ed., Vol. IV, pp. 271–333). New York, NY: Wiley.

Matthews, R. (2014). Committing Canadian Sociology: Developing a Canadian Sociology and a Sociology of Canada. *Canadian Psychological Association, 51*(2), 107-127.

McCusker, J., Cole, M. G., Yaffe, M., Strumpf, E., Sewitch, M., Sussman, T., CIampi, A., Lavoie, K., & Belzile, E. (2016). Adherence to a depression self-care intervention among primary care patients with chronic pain conditions: A randomized control trial. *Health Education Journal, 75*(7), 767-779. https://doi.org/10.1177/0017896915622515

Merikangas, K. R., He, J-P., Burstein, M., Swanson, S. A., Avenevoli, S., Cui, L., Benjet, C., Georgiades, K., & Swendsen, J. (2010). Lifetime prevalence of mental disorders in U.S. adolescents: Results from the National Comorbidity Survey Replication-Adolescent

Supplement (NCS-A). *Journal of the American Academy of Child and Adolescent Psychiatry, 49*(10), 980-989. http://dx.doi.org/10.1016/j.jaac.2010.05.017.

Merry, S., McDowell, H., Hetrick, S., Bir, J., & Muller, N. (2004). Psychological and/or educational interventions for the prevention of depression in children and adolescents. *Cochrane Database of Systematic Reviews, 2*(CD003380). https://doi.org/10.1002/14651858.CD003380.pub2

Mikolas, C, Winfield, H, Smith-MacDonald, L, Pike, A., Jones, C., Lee, M., Griffiths, J., Perry, R., Olson, DM, Heber, A, Olson, J, Sevigny, P., Brémault-Phillips, S. (2021). Enhancing resilience-building capacity to support Canadian Military Families and communities: A qualitative analysis of the Reaching in... Reaching Out (RIRO) and Bounce Back and Thrive! (BBT) resiliency skills training programs. *Frontiers in Public Health, 9*(662313), 1-9. https://doi.org/10.3389/fpubh.2021.662313

Morrison, R., & Kordich Hall, D. (2012). *Development and psychometrics of the Bounce Back Subscale (BBSS)* [unpublished report].

Neill, J. T. (2007). *Life Effectiveness Questionnaire: A research tool for measuring personal change* [Unpublished manuscript]. University of Western Sydney.

Neill, J. (2008). *Writing up a factor analysis.* Creative Commons Attribution 2.5 Australia. http://www.bwgriffin.com/gsu/courses/edur9131/content/Neill2008_WritingUpAFactorAnalysis.pdf

National Public Radio, Robert Wood Johnson Foundation, & Harvard School of Public Health. (2014). *The Burden of Stress in America*. http://www.rwjf.org/content/dam/farm/reports/surveys_and_polls/2014/rwjf414295

Oken, B. S., Chamine, I., & Wakeland, W. (2015). A systems approach to stress, stressors and resilience in humans. *Behavioural Brain Research, 0,* 144-154. https://doi.org/10.1016/j.bbr.2014.12.047

Ong, A. D., Bergeman, C. S., Bisconti, T. L., & Wallace, K. A. (2006). Psychological resilience, positive emotions, and successful adaptation to stress in later life. *Journal of Personality and Social Psychology, 91*, 730–749. https://doi.org/10.1037/0022-3514.91.4.730.

Patterson, G. R., Forgatch, M. S., & DeGarmo, D. S. (2010). Cascading effects following intervention. *Development and Psychopathology, 22,* 949–970. https://doi.org/10.1017/S0954579410000568

Pearson, J., & Kordich Hall, D. (2016). *BBT resiliency skills training: Program materials and resources.* The Child & Family Partnership.

Pearson, J., & Kordich Hall, D. (2017). *Reaching IN ... Reaching OUT Resiliency Guidebook "Bounce back" skills for adults & young children*. Toronto, ON. http://www.reachinginreachingout.com/resources-guidebook.htm

Poole, J. C., Dobson, K. S., Pusch, D. (2017). Childhood adversity and adult depression: The protective role of psychological resilience. *Child Abuse and Neglect, 64,* 89-100. http://dx.doi.org/10.1016/j.chiabu.2016.12.012

Reaching IN…Reaching OUT. (2010). *Resilience: Successful navigation through significant threat.* Report prepared for the Ontario Ministry of Children and Youth Services. The Child & Family Partnership.

Robertson, I. T., Cooper, C. L., Sarkar, M., & Curran, T. (2014). Resilience training in the workplace from 2003–2014: A systematic review. *Journal of Occupational and Organizational Psychology, 88,* 533–562.

Ros, R., Hernandez, J., Graziano, P. A., & Bagner, D. M. (2016). Parent training for children with or at risk for developmental delay: The role of parental homework completion. *Behavior Therapy, 47*(1), 1-13. https://doi.org/10.1016/j.beth.2015.08.004

Rutter, M. (1985). Resilience in the face of adversity: Protective factors and resistance to psychiatric disorder. *Britain Journal of Psychiatry, 147,* 598–611. https://doi.org/10.1192/bjp.147.6.598

Rutter, M. (2006). Implications of resilience concepts for scientific understanding. *Annals of the New York Academy of Sciences, 1094*, 1–12. https://doi.org/10.1196/annals.1376.002.

Sameroff, A. (2000). Developmental systems and psychopathology. *Development and Psychopathology, 12*, 297–312. https://doi.org/10.1017/S0954579400003035

Sanders, M. R. (1999). Triple P-Positive Parenting Program: Towards an empirically validated multilevel parenting and family support strategy for the prevention of behavior and emotional problems in children. *Clinical Child and Family Psychology Review, 2*(2), 71–90. https://doi.org/10.1023/A:1021843613840

Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, *67*(6), 1063-1078.

Schwarz, N. (2007). Retrospective and concurrent self-reports: The rationale for real-time data capture. In A. S. Stone, A. Shiffman, A. A. Atienza & L. Nebeling (Eds.), *The science of real-time data capture* (pp. 11–26). Oxford University Press.

Schoon, I. (2021). A socioecological developmental systems approach for the study of human resilience. In M. Ungar (Ed.). *Multisystemic resilience: Adaptation and transformation in contexts of change* (pp. 335 - 358). Oxford.

Shatté, A., Perlman, A., Smith, B., & Lynch, W. D. (2017). The positive effect of resilience on stress and business outcomes in difficult work environments. *Journal of Occupational and Environmental Medicine, 59,* 135–140. https://doi.org/10.1097/JOM.0000000000000914

Smith, B., Shatté, A., Perlman, A., Siers, M., & Lynch, W. D. (2018). Improvements in resilience, stress, and somatic symptoms following online resilience training: A dose-response effect. *Journal of Occupational and Environmental Medicine, 60*(1), 1-5. https://doi.org/10.1097/JOM.0000000000001142.

Spek, V., Nyklicek, I., Cuijpers, P., & Pop, V. (2008). Predictors of outcome of group and internet-based cognitive behavior therapy. *Journal of Affective Disorders, 105*, 137-145. https://doi.org/10.1016/j.jad.2007.05.001

Statistics Canada. (2016). *Immigration and ethnocultural diversity statistics*. https://www.statcan.gc.ca/eng/subjects-start/immigration_and_ethnocultural_diversity

Statistics Canada. (2018). *The surge of women in the workforce.* https://www150.statcan.gc.ca/n1/pub/11-630-x/11-630-x2015009-eng.htm

Stice, E., Shaw, H., Bohon, C., Marti, C. N., & Rohde, P. (2009). A meta-analytic review of depression prevention programs for children and adolescents: Factors that predict magnitude of intervention effects. *Journal of Consulting and Clinical Psychology, 77*, 486–503. https://doi.org/10.1037/a0015168

Stonnington, C. M., Kothari, D. J., & Davis, M. C. (2016). Understanding and promoting resiliency in patients with chronic headache. *Current Neurology and Neuroscience Reports, 16*(1), 6. https://doi.org/10.1007/s11910-015-0609-2

Taylor, T. K., & Biglan, A. (1998). Behavioral family interventions for improving child-rearing: A review for clinicians and policy makers. *Clinical Child and Family Psychological Review, 1*, 41–60. https://doi.org/10.1023/a:1021848315541

Thase, M. E., Reynolds, C. F., Frank, E., Simons, A. D., McGeary, J., Fasiczka, A. L., Garamoni, G. G., Jennings, J. R., & Kupfer, D. J. (1994). Do depressed men and women respond similarly to cognitive behavior therapy? *American Journal of Psychiatry, 151,* 500–505. https://doi.org/10.1176/ajp.151.4.500.

Twum-Antwi, A., Jefferies, P., & Ungar, M. (2019). Promoting child and youth resilience by strengthening home and school environments: A literature review. *International Journal of School & Educational Psychology, 8*(2), 78-89. https://doi.org/10.1080/21683603.2019.1660284

Ungar, M. (2021). Modeling mutisystemic resilience: Connecting biological, psychological, social, and ecological adaptation in contexts of adversity. In M. Ungar (Ed.). *Multisystemic resilience: Adaptation and transformation in contexts of change* (pp. 6 – 31). Oxford.

Van Buuren, S. (2018). *Flexible imputation of missing data.* Taylor Francis Group.

Walsh, F. (1996). The concept of family resilience: Crisis and challenge. *Family Process, 35,* 261–281. https://doi.org/10.1111/j.1545-5300.1996.00261.x

Walsh, F. (2003). Family resilience: A framework for clinical practice. *Family Process, 42*, 1–18. https://doi.org/10.1111/j.1545-5300.2003.00001.x

Walsh, F. (2016). Family resilience: A developmental systems framework. *European Journal of Developmental Psychology, 13*(3), 313-324. http://dx.doi.org/10.1080/17405629.2016.1154035

Walsh, F. (2021). Family resilience: A dynamic systemic framework. In M. Ungar (Ed.). *Multisystemic resilience: Adaptation and transformation in contexts of change* (pp. 255). Oxford.

Warmerdam, L., Van Straten, A., Twisk, J., & Cuijpers, P. (2013). Predicting outcome of Internet-based treatment for depressive symptoms. *Psychotherapy Research, 23*(5), 559-567. https://doi.org/10.1080/10503307.2013.807377

Watson, H. J., & Nathan, P. R. (2008). Role of gender in depressive disorder outcome for individual and group cognitive-behavioral treatment. *Journal of Clinical Psychology, 64*(12), 1323-1337. https://doi.org/10.1002/jclp.20524.

Webster-Stratton, C. (2001). The incredible years: Parents, teachers, and children training series. *Residential Treatment for Children & Youth, 18*(3), 31–45. https://doi.org/10.1300/J007v18n03_04

Windle, G., Bennett, K. M., & Noyes, J. (2011). A methodological review of resilience measurement scales. *Health and Quality of Life Outcomes, 9,* 8. https://doi.org/10.1186/1477-7525-9-8.

Winwood, P. C., Colon, R., & McEwen, K. (2013). A practical measure of workplace resilience: Developing the resilience work scale. *Journal of Occupational and Environmental Medicine, 55*(10), 1205-1212. https://doi.org/10.1097/JOM.0b013e3182a2a60a

Wong, D. F. K., Ng, T. K., Ip, P. S. Y., Chung, M. L., & Choi, J. (2018). Evaluating the effectiveness of group CBT for parents of ADHD children. *Journal of Child and Family Studies, 27,* 227-239. https://doi.org/10.1007/s10826-017-0868-4

World Health Organization. (2021). *Gender disparities and mental health: The facts.* https://www.who.int/teams/mental-health-and-substance-use/gender-and-women-s-mental-health

Appendix A: Bounce Back Subscale

Please tell us how much you agree with each statement on a scale of "1" to "5"	Don't agree at all	Somewhat disagree	Don't disagree or agree	Somewh at agree	Agree a lot
1. I hardly ever expect things to go my way	1	2	3	4	5
2. I frequently blame myself when things go wrong	1	2	3	4	5
3. I think if something can go wrong for me, it will	1	2	3	4	5
4. I believe that I can do well on most things	1	2	3	4	5
5. I am always optimistic about my future	1	2	3	4	5
6. When one thing goes wrong, it usually ruins my whole day	1	2	3	4	5
7. It really bothers me when I make mistakes	1	2	3	4	5
8. I stay calm when things go wrong	1	2	3	4	5
9. No matter what happens I can handle it	1	2	3	4	5
10. It is easy for me to control my anger	1	2	3	4	5
11. When things go wrong in my life it generally takes me a long time to get back to normal	1	2	3	4	5

These next four questions are for parents about your child. If you have more than one child, please answer about the child that concerns you most. If you are NOT a child, please select the "N/A" option	Don't agree at all	Some-what disagree	Don't agree or disagree	Some-what agree	Agree a lot	N/A
12. I find parenting very stressful	1	2	3	4	5	6
13. My child frequently acts up to get my attention	1	2	3	4	5	6
14. My child's behaviours is frequency hard for me to understand	1	2	3	4	5	6
15. My child frequently does things just to upset me	1	2	3	4	5	6

Appendix B: DASS-21 Depression Items

Please read the statement and select a number (1, 2, 3, or 4) which indicates how much the statement applied to you OVER THE PAST WEEK. There are no right or wrong answers. Do not spend too much time on any one statement.	Did not apply to me at all	Applied to me to some degree OR some of the time	Applied to me a considerable degree OR good part of the time	Applied to me very much or most of the time
17. I couldn't seem to experience any positive feelings at all.	1	2	3	4
18. I found it difficult to work up the initiative to do things.	1	2	3	4
21.I felt that I had nothing to look forward to.	1	2	3	4
24. I felt down-hearted and blue.	1	2	3	4
26. I was unable to become enthusiastic about anything.	1	2	3	4
27. I felt I wasn't worth much as a person.	1	2	3	4
29. I felt life was meaningless	1	2	3	4

Appendix C: DASS-21 Stress Items

Please read the statement and select a number (1, 2, 3, or 4) which indicates how much the statement applied to you OVER THE PAST WEEK. There are no right or wrong answers. Do not spend too much time on any one statement.	Did not apply to me at all	Applied to me to some degree OR some of the time	Applied to me a considerable degree OR good part of the time	Applied to me very much or most of the time
16. I found it hard to 'wind down'	1	2	3	4
19. I tended to over-react to situations	1	2	3	4
20. I felt that I was using a lot of nervous energy.	1	2	3	4
22. I found myself getting distracted.	1	2	3	4
23. I found it difficult to relax.	1	2	3	4
25. I was intolerant of anything that kept me from getting on with what I was doing.	1	2	3	4
28. I felt that I was rather touchy.	1	2	3	4