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Cover Illustration: © Alexandra Masino, 2014, Kintsukuroi, Encaustique et feuille d'or sur panneau 11" x 12" / 28 x 30.5 cm, http://www.alexandremasino.ca/enc_fr/Expos/2015Ottawa/12.html. Kintsukuroi is the Japanese art of mending broken porcelain with gold lacquer. While repairing the broken pieces, it enhances and magnifies the fractures, rather than hiding them. For some, kintsukuroi or Kintsugi are metaphors of resilience because it teaches us that accidents and being broken are not necessarily an end. They may even be the beginning of something beautiful. Practicing these techniques as also been used as a creative way of healing emotional wounds.

Kintsukuroi est l'art japonais de raccommoder de la porcelaine brisée avec de la laque en or. Lors de la réparation des pièces brisées, le processus améliore et amplifie les fractures plutôt que de les cacher. Pour certains, kintsukuroi ou Kintsugi sont des métaphores de la résilience, car ils nous enseignent que les accidents et les bris ne sont pas forcément une fin en soi. Ils peuvent même être le début de quelque chose de beau. La pratique de ces techniques a également été utilisée comme intervention créative pour guérir des blessures émotionnelles.

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International Journal of Child and Adolescent Resilience

Introduction: IJCAR / RIREA Regular Issue of 2019

Isabelle Daigneault, Editor-in-Chief

Dear readers, I am pleased to introduce this 6th issue of the International Journal of Child and Adolescent Resilience (IJCAR), or as we now call it in its bilingual version, la Revue Internationale de la résilience des enfants et adolescents (RIREA).

With pleasure, I took on the role of Acting Editor-in-chief of IJCAR / RIREA over the last year to replace Tara Black who was on maternity leave. I took advantage of this interim to initiate several changes to the Journal, including making it officially bilingual and transfer hosting to the Public Knowledge Project (PKP) in collaboration with ÉRUDIT and Coalition Publi.ca, which will ensure its dissemination. The Open Journal System submission platform will remain the same, allowing us to maintain open access publishing without cost to authors. These changes are underway and you will see them come to fruition over the next few months as the Journal officially changes sites and editors. Indeed, it is with great pleasure that IJCAR / RIREA welcomes its new Editor-in-chief, Martine Hébert, Professor in the Department of Sexology at the Université du Québec à Montréal and Canada Research Chair in Interpersonal Trauma and resilience, which will oversee activities for the next four years. With her expertise in research on the resilience of children and adolescents, her international recognition and influence and her scientific rigor, Dr. Hébert is well suited as Editor-in-chief and will promote IJCAR / RIREA internationally and especially within the Francophonie.

I will continue to be involved in the Journal as co-editor and would like to see it grow and develop into new horizons and new themes. Another novelty started this year will see IJCAR / RIREA focus on annual thematic issues. The first of these issues, arising from the 3rd Annual Complex Trauma Symposium, will focus on resilience in the context of complex trauma (see the call for submissions below).

Finally, for this regular 2019 issue, six articles on different aspects of resilience are published and demonstrate the wealth of work in this area. Liebenberg and Joubert (pp. 4-14) will discuss resilience indicators and, in particular, how the meaning assigned to them affects resources interactively. Moisan, Hébert, Fernet, Blais, and Amédée (pp 15-31) will present the results of a study using the resilience portfolios and the concept of polystrenghts, stressing the importance of taking these forces into account in the evaluation of young people exposed to traumatic experiences. Fallon, Kartusch, Filippelli, Trocme, Black, Chan, Sawh, and Carnella (pp. 32-40) will provide a brief report of the answers to the 10 questions any protection center should be aware of in order to serve its population well. Cash (pp.

41-47) will discuss how technologies can facilitate research and intervention in the area of abuse to promote resilience. Strickland, Wekerle, Kehayes, Thompson, Dobson, and Stewart (pp. 48-65) will address the issue of self-compassion as promoting resilience in sexually assaulted youth when alcohol is involved. And finally, Alaggia, Morton and Vine (pp. 66-82) will present the guiding principles for the transfer and use of knowledge from the Make Resilience Matter project according to the conceptual model of the Research Contribution Framework.

I take this opportunity to thank Christine Wekerle, Tara Black and Martine Hébert for their essential support during this interim, Marlyn Bennett and Ihssane Fethi for the manuscripts' copyediting and Author guidelines' update, Alexandre Masino for the image of one of his paintings on the cover that illustrates so evocatively what resilience may be, the editorial team that contributed to the revision of manuscripts and the authors for their patience with the publication deadlines of this issue. On that, enjoy your reading!

Call for Submissions - Special Issue on Resilience and Complex Trauma

Deadline to submit your manuscript - January 15, 2020

Submit your manuscripts in French or English, the journal is now bilingual! Do not hesitate to send the information to your colleagues and students that it might interest. We would really like to increase the number of articles published in French over the next few years.

Prepare your manuscripts for the next thematic issue on Resilience and Aboriginal populations to be published in 2021 – Upcoming Call for Submissions

International Journal of Child and Adolescent Resilience

Introduction: IJCAR / RIREA numéro régulier de 2019

Isabelle Daigneault, rédactrice en chef

Chers lecteurs et chères lectrices, il me fait plaisir d'introduire ce 6e numéro de l'International Journal of Child and Adolescent Resilience (IJCAR), ou comme nous la nommons maintenant dans sa version bilingue, la Revue Internationale de la résilience des enfants et adolescents (RIREA).

C'est avec plaisir que j'ai assumé le rôle d'éditrice en chef intérimaire d'IJCAR/RIREA au cours de la dernière année en remplacement de Tara Black qui était en congé de maternité. J'ai profité de cet intérim pour amorcer plusieurs changements à la revue, notamment de la rendre officiellement bilingue et en transférer l'hébergement vers le Public Knowledge Project (PKP) en collaboration avec ÉRUDIT et Coalition Publi.ca, qui en assureront la diffusion. La plateforme de soumission Open Journal System demeurera la même, ce qui nous permet de maintenir la publication en libre accès sans frais de publication pour les auteurs.trices. Ces changements sont amorcés et vous les verrez se réaliser au cours des prochains moins alors que la revue changera officiellement de site et de rédactrice en chef. En effet, c'est avec grand plaisir qu'IJCAR/RIREA accueille sa nouvelle rédactrice en chef, Martine Hébert, professeure au département de sexologie de l'Université du Québec à Montréal et titulaire de la Chaire de recherche du Canada sur les traumas interpersonnels et la résilience, qui en chapeautera les activités pour les quatre prochaines années. Forte de son expertise en recherche sur la résilience des enfants et des adolescents, de son rayonnement international et de sa rigueur scientifique, Dr. Hébert est tout indiquée comme rédactrice en chef et saura promouvoir IJCAR/RIREA internationalement et notamment au sein de la francophonie.

Je continuerai mon implication au sein de cette revue comme corédactrice en chef et j'aimerais la voir grandir et s'épanouir vers de nouveaux horizons et de nouvelles thématiques. Une autre nouveauté amorcée cette année verra en effet IJCAR/RIREA mettre l'accent sur un numéro thématique annuel. Le premier de ces numéros, découlant du 3e Symposium annuel sur le trauma complexe, portera sur la résilience en contexte de traumatismes complexes (voir l'appel de soumission ci-dessous).

Enfin, pour ce numéro régulier de 2019, six articles portant sur différents aspects de la résilience sont publiés et démontrent la richesse des travaux dans ce domaine. Liebenberg et Joubert (p. 4-14) aborderont les indicateurs de résilience et, en particulier, comment le sens qui lui est attribué affecte les ressources de manière interactive. Moisan, Hébert, Fernet,

Blais, et Amédée (p. 15-31) présenteront les résultats d'une étude utilisant les portfolios de résiliences et le concept de polyforces, soulignant l'importance de prendre ces forces en considération lors de l'évaluation des jeunes exposés à des expériences traumatiques. Fallon, Kartusch, Filippelli, Trocmé, Black, Chan, Sawh et Carnella (p. 32-40) présenteront un rapport bref des réponses au 10 questions que tout centre de protection devrait connaître afin de bien desservir sa population. Cash (p. 41-47) abordera la manière dont les technologies peuvent faciliter la recherche et l'intervention dans le domaine de la maltraitance afin de promouvoir la résilience. Strickland, Wekerle, Kehayes, Thompson, Dobson et Stewart (p. 48-65) aborderont la question de l'auto compassion comme favorisant la résilience chez des jeunes agressés sexuellement lorsque l'alcool était impliqué. Et finalement, Alaggia, Morton et Vine (p. 66-82) présenteront les principes directeurs favorisant le transfert et l'utilisation des connaissances découlant du projet Make Resilience Matter selon le modèle conceptuel du Research Contribution Framework.

J'en profite pour remercier Christine Wekerle, Tara Black et Martine Hébert pour leur soutien essentiel durant cet intérim, Marlyn Bennett et Ihssane Fethi pour la préparation des textes pour leur publication et la mise à jour des instructions pour les auteurs, Alexandre Masino pour l'image d'une de ses œuvres en page couverture qui illustre de manière si évocatrice ce que peut être la résilience, l'équipe éditoriale qui a contribué à la révision des manuscrits et les auteurs et autrices pour leur patience face aux délais de publication de ce numéro. Sur ce, bonne lecture!

Appel de soumissions – numéro spécial sur la résilience et le trauma complexe

Date limite pour soumettre votre manuscrit – 15 janvier 2020

Soumettez-nous vos manuscrits en français ou en anglais, la revue est maintenant bilingue! N'hésitez pas à transmettre l'information à vos collègues et étudiants ou étudiantes que cela pourrait intéresser. Nous aimerions vraiment augmenter le nombre des articles publiés en français au cours des prochaines années.

Préparez vos manuscrits pour le prochain numéro thématique sur la résilience et les autochtones à paraître en 2021 – Appel de soumission à venir

International Journal of Child and Adolescent Resilience

A Comprehensive Review of Core Resilience Elements and Indicators: Findings of Relevance to Children and Youth

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and Natacha Joubert[2]

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2 PhD, Practitioner and Researcher, Mental Health Promotion

Abstract:

Resilience is core to improving Canadians' mental health. It is therefore important to expand our understanding of key resilience elements – individuals assets, relational and contextual resources - as they develop throughout the life course; as they relate to Canadian heterogeneity, including Indigenous, immigrant and refugee, African-Canadian and LGBTQ2 communities; and, in the context of chronic/daily stress as well as extreme stress, trauma, violence and marginalised socioeconomic settings. Meaning-making frameworks and processes appear as essential mechanisms in the enactment of personal agency, guiding the use of resilience assets and resources to achieve and maintain positive mental health. This brief report shares findings of a comprehensive literature review, discussing their relevance to children and youth, concluding with implications for related programs and policy.

Funding:

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Conflicts of Interest:

We have no conflicts of interest to declare.

Keywords:

Resilience processes; resilience elements; population mental health; development.

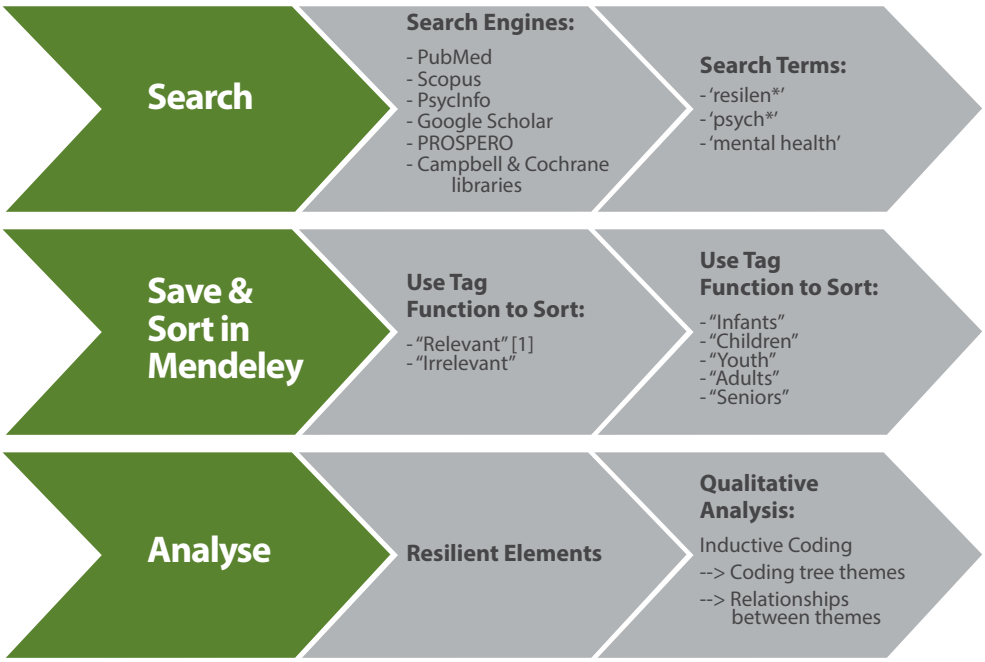
Introduction

Fostering mental health through the development of resilience resources is central to population mental health promotion (Joubert, 2009). Resilience is relevant to both the management of extreme stresses (such as violence) and developmental processes that strengthen capacity to manage chronic, daily stressors (Supkoff, Puig, & Sroufe, 2012). Consequently, we sought to refine understandings of key resilience elements promotive of mental health across the life span, accounting for Canadian heterogeneity and social disparity (see Liebenberg, Joubert & Foucault, 2017 for more detail on the review process and overall findings). This brief report shares findings of our literature review as they pertain to children and youth, concluding with implications for programs and policy (see Figure 1 and Table 1).

Table 1. Summary of document retrieval

	Resilient Elements		
Source	**Identified**	**Selected**	**Included**
Google Scholar	529	47	34
Scopus	3402	240	146
PsycInfo	787	94	50
PubMed	732	75	46
Prospero	29	0	0
Campbell	0	0	0
Cochrane	6	4	0
Other	0	67	50
TOTAL	5485	527	326

Figure 1: Review Methods and Process



Criteria:

1. Published between January 2005 and January 2017;
2. Focus on resilience as proponent of mental health (rather than school engagement for example);
3. Elucidates resilience elements rather than for example framng a study and its findings within existing understandings of resilience.

Key Resilience Elements

Research demonstrates resilience as an interactive process; dependent on individual "assets" together with relational and contextual "resources"; occurring in contexts of acute and/or chronic stressors (Garmezy, Masten, & Tellegen, 1984; Luthar, Cicchetti, & Becker, 2000; Masten, 2014; Rutter, 2013; Vanderbilt-Adriance & Shaw, 2008; Werner & Smith, 1992). Individual assets include for example meaning-making processes, executive function, problem solving skills, self-efficacy and positive outlook or emotions. Relational resources include stable, trusting and nurturing relationships with family, peer groups, and significant others such as teachers, and can provide opportunities for key turning points within life trajectories, especially during adolescence (Graber et al., 2016; Helgeson & Lopez, 2010; Kumsta et al., 2010; Rutter, 2013). The importance of contextual resources in supporting both individual assets and relational resources is increasingly apparent (Tol, Jordans, Kohrt, Betancourt, & Komproe, 2013; VanderPlaat, 2016). These resources include health and educational systems, recreational resources, safe housing and community cohesion. For children and adolescents, educational environments in particular are critical resources (Masten, 2014; Sanders & Munford, 2016; Sanders, Munford, & Liebenberg, 2016), offering opportunities for personal (Greenberg, 2006; Herbers et al., 2012; Pieloch et al., 2016; Toland & Carrigan, 2011) and neurocognitive development (Baker, Salinas, & Eslinger, 2012; Blair, 2002).

Community resources provided within a cohesive community are also linked to positive outcomes (Betancourt & Khan, 2008; Barbarin et al., 2006; Li, Nussbaum, & Richards, 2007; Masten & Obradovic, 2008; Pine, Costello, & Masten, 2005; Tol, Song, & Jordans, 2013; Vanderbilt-Adriance & Shaw, 2008). Community resources include opportunities for cultural and civic engagement that support a sense of belonging, personal identification and cultural heritage (Evans et al., 2012; Hughes et al., 2006; Jones & Galliher, 2007; LaFromboise, Hoyt, Oliver, & Whitbeck, 2006; Serafica & Vargas, 2006; Stumblingbear-Riddle & Romans, 2012). These resources are especially important in multi-cultural contexts (Dupree, Spencer, & Spencer, 2015; Fleming & Ledogar, 2008; Hackett et al., 2016; Kirmayer, Dandeneau, Marshall, Phillips, & Williamson, 2011; Sleijpen, Boeije, Kleber, & Mooren, 2015).

Finally, service provision and related policy (Harder et al., 2015; Sanders & Munford, 2014; Ungar, Liebenberg, Dudding, Armstrong, & van de Vijver, 2013) are implicated in supporting access to resilience resources.

Importantly, these three groupings of assets and resources cannot be developed nor function in isolation of one another, underscoring the interactive characteristic of resilience processes. Research shows for example, that individual assets are fostered through available and accessible relational and contextual resources (Bayer & Rozkiewicz, 2015; Belsky & De Haan, 2011; Masten, 2014; Masten & Cicchetti, 2010; Masten & O'Dougherty-Wright, 2010; Rutter & Sonuga-Barke, 2010). Additionally, relational resources and the social capital they hold, function as a bridge between the development of personal assets (Graber, Turner, & Madill, 2016; Helgeson & Lopez, 2010), and interaction with contextual resources (Henderson, 2012; Sanders & Munford, 2016; Ungar et al., 2007).

Similarly, contextual resources can facilitate access to important relational resources. Interpersonal relationships within educational spaces for example can expand support networks for children and adolescents (Masten, Burt, & Coatsworth, 2006; Masten & Obradović, 2006; Toland & Carrigan, 2011). Teachers can be key supports, providing mentorship, role-models, and access to social capital (Doll, 2013; Henderson, 2012; Sanders & Munford, 2016; Theron, Liebenberg, & Malindi, 2014; Toland & Carrigan, 2011).

Resilience Processes

As our understanding of resilience as a process develops, greater attention is being given to the relative nature of resources and outcomes. What experiences are seen as traumatic or stressful (Bonanno, 2012; Fergus & Zimmerman, 2005; Southwick, Bonanno, Masten, Panter-Brick, & Yehuda, 2014), how "resources" are understood and what counts as "good outcomes", are all culturally and contextually dependent (Clauss-Ehlers, 2008; Eggerman & Panter-Brick, 2010; Luthar, 2006; Masten, 2014; Walls, Whitbeck, & Armenta, 2016). These variations are also relevant in terms of gender (Author(s), 2012; Bonanno, Galea, Bucciarelli, & Vlahov, 2007; Graber et al., 2016; Jones & Galliher, 2007; Liebenberg, Ungar & Van de Vijver, 2012).

Additionally, resilience elements feed into a cycle where internal transformations are supported. As stated in the previous section, contextual resources facilitate the development of individual assets, which in turn facilitate access to contextual resources (see Figure 2; Geschwind et al., 2010; Heckman, 2006; Masten et al., 2006; Masten & Cicchetti, 2010; Sroufe, 2009; Supkoff et al., 2012). Research findings highlight the importance of foundational experiences, where risks and resources faced earlier in life impact people not only at that point in time, but also their later capacity to understand, negotiate and manage stressors (Bowes & Jaffee, 2013; Masten & Cicchetti, 2010; Rutter, 2006; Sameroff & Rosenblum, 2006; Sarapas et al., 2011; Supkoff et al., 2012; Werner & Smith, 2001). These findings emphasize the importance of understanding how previous exposure to adversity and resilience resources, have shaped the ways in which individuals currently make sense of their experiences, and how they draw on available resources at particular moments in time as part of a continuous resilience process (Bottrell, 2009; Johnson, 2010; Masten & O'Dougherty-Wright, 2010; Theron & Theron, 2014).

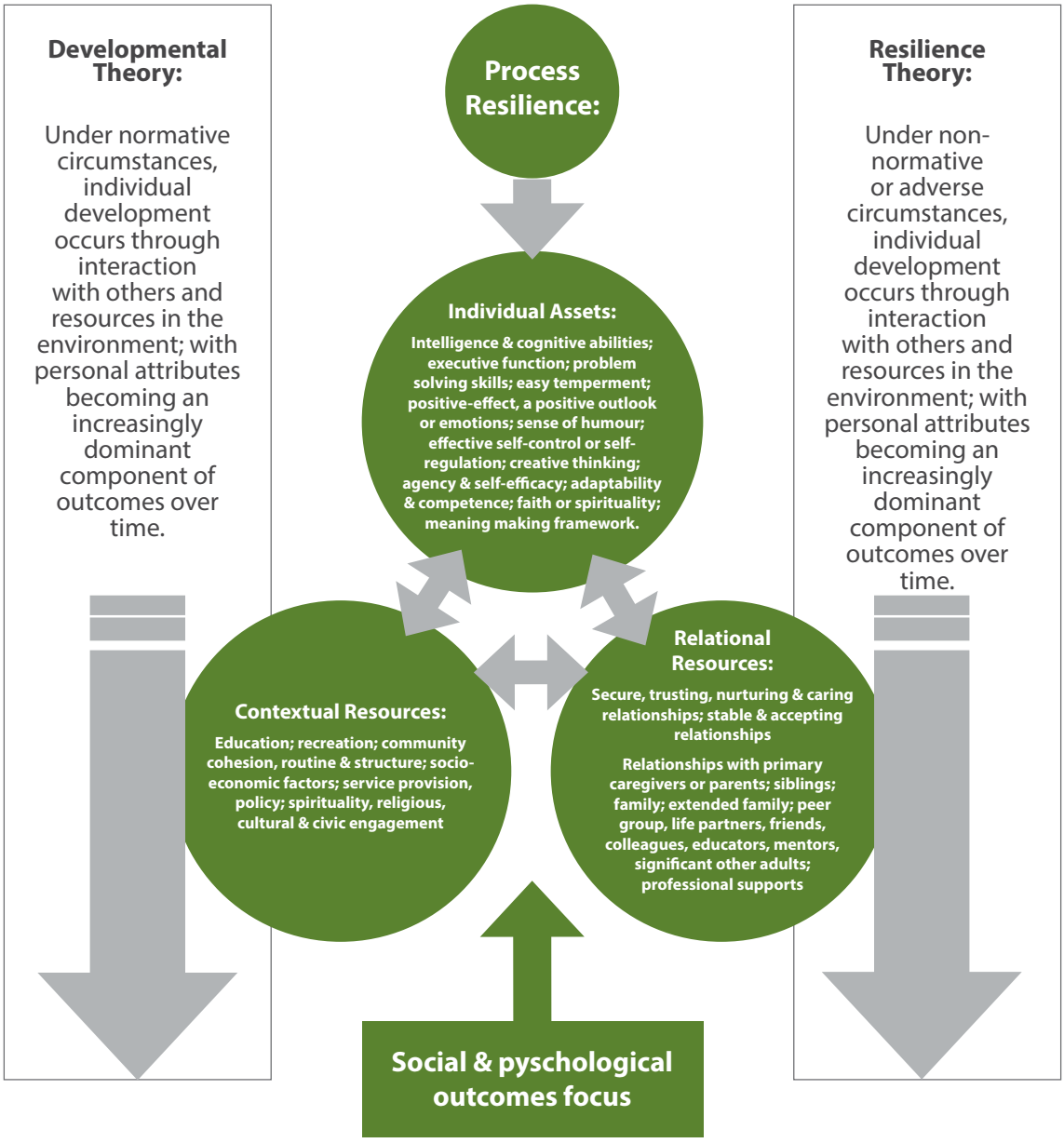
Expanding Current Thinking on Resilience

Review findings suggest that at the center of this interactive resilience process is personal agency. Our understanding of "agency" extends beyond traditional definitions as the capacity to act, and includes processes of meaning- and decision-making that shape capacity to act in a given environment (Barber, 2008; Betancourt & Khan, 2008; Dupree, Spencer, & Spencer, 2015; Gone, 2013; Kirmayer, 2015; Kirmayer et al., 2011).

Meaning-making frameworks and processes shape the ways in which individuals make sense of daily experiences and choose to manage the adversities they encounter. These processes form essential mechanisms in the enactment of agency. They guide an individual's choice of which resilience assets and resources to draw on in order to manage challenges and move towards improved outcomes. These frameworks are shaped by social interactions

across the lifetime. Negative experiences can establish maladaptive frameworks and coping strategies, while positive experiences can facilitate constructive frameworks and strategies. Importantly, these frameworks and processes are flexible and can be changed (see for example, Sanders & Munford, 2014, 2016; Sanders et al., 2016, 2015).

Figure 2: Alighnment of Life Span Resilience Elements, Resilience Theory and Developmental Theory



Implications

Our findings highlight the need for flexible policy and interventions that account for personal, contextual and cultural variation in meaning-making and related resilience resources. Additionally, findings emphasize the need for policies that promote relational practice to facilitate the development of positive meaning-making frameworks. Consideration needs to be given to the relational and contextual resources that individuals will require to develop the individual assets necessary to achieve positive psychosocial outcomes.

Accounting for individuals, meaning-making processes can ensure that crucial alignments are made between people and the resources they require. These systemic responses can powerfully impact individual meaning-making processes and the development of individual assets. Consequently, opportunities should be created for service providers to engage with young people in ways that generate relationships in which individual understanding of events and resources can be collaboratively explored. Without accounting for these subjectivities, crucial barriers to positive outcomes could be missed, along with valuable and existing resources (Carter, Bradley, Richardson, Sanders, & Sutton, 2006; Sanders & Munford, 2014). Additionally, careful attention needs to be given to contextual barriers and resources as understood by young clients in intervention strategies (Brittain & Blackstock, 2015; Guerin, 2011; Kirmayer, Simpson, & Cargo, 2003).

Finally, an expanded view of the individual within relational and physical contexts requires that resilience-based interventions target families and communities. Here, formal and informal community interventions that strengthen community social networks are particularly important.

Conclusion

Drawing on our previous work and review findings (AJoubert & Raeburn, 1998; Joubert, 2009; Lahtinen, Joubert, Raeburn, & Jenkins, 2005; Liebenberg et al., 2012; Sanders, Munford, & Liebenberg, 2017), we define resilience as "an interactive developmental process involving the agency, or inner capability of individuals, to call on their personal assets, engage with others and look for external resources to successfully transform adversity into opportunities to learn and thrive."

Understanding how individuals and communities interpret events, and what they believe they need to attain and sustain mental health, facilitates alignment of resources with both the meaning brought to events and existing assets and resources. Accordingly, a platform is created from which children and youth can more successfully manage challenges. Recognizing individuals as full participants in their life experiences and the centrality of individual assets such as personal agency within larger interactive resilience process, establishes an opportunity for those engaged in mental health promotion efforts to capitalize on an immense resource.

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Resilience Portfolios and Poly-Strengths: Identifying Strengths Associated with Wellbeing after Adversity

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Abstract:

Objectives: This study aimed to describe the prevalence of traumas and strengths in a representative sample of Quebec youth and to test whether poly-strengths were associated with low psychological distress, after controlling for poly-traumas.

Method: Using data from the Quebec Youths' Romantic Relationships survey (QYRRS), hierarchical logistic regressions were conducted to examine the relationship between poly-strengths and low levels of psychological distress, and to identify which strengths were associated with outcomes, after accounting for demographic variables and individuals' experiences of traumas.

Results: More than a third of the sample experienced 4 traumas or more (37.0%). The average number of experienced traumas was 3.04 out of 10 measured traumas. More than half of the sample had at least 5 strengths, the average number of strengths being 3.95 (out of 8). Two third (67.6%) of the sample did not suffer from psychological distress. Among poly-victims, half of the participants (49.6%) showed clinical symptoms of distress.

Poly-strengths were uniquely associated with low of clinical distress. After accounting for demographics and poly-traumas, poly-strengths explained 24.2% of the variance of low levels of psychological distress. Self-esteem, optimism, parental support and attachment, number of sources of support, social support (seeking secure base), and capacity to adapt (resiliency) were uniquely associated with low levels of distress.

Conclusion and Implications: The combination of strengths decreases the likelihood of experiencing clinical levels of psychological distress, which can contribute to healthy functioning in context of adversities. Findings highlight the importance of promoting multiple and diverse strengths among youth.

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Conflict of Interest:

Authors declare no conflict of interest.

Keywords:

trauma, adolescence, strengths, resilience, youth

Introduction

Childhood trauma is an endemic problem experienced by youth around the world. Childhood trauma has been associated with devastating long-term consequences affecting both the physical and psychological well-being of victims (Felitti et al., 1998; Kalmakis & Chandler, 2015; Trotta, Murray, & Fisher, 2015). Studies have reported higher levels of post-traumatic stress symptoms and psychological distress among young victims relative to non-victims (Kalmakis & Chandler, 2015; Turner, Shattuck, Finkelhor, & Hamby, 2017). Most studies have examined childhood trauma by focussing on specific, individual forms of victimization and related adverse childhood events (Finkelhor, Orrarod, & Turner, 2007; Paolucci, Genuis, & Violato, 2001). However, studies have shown that most individuals experience more than one form of victimization, which is referred to as poly-victimization (Finkelhor et al., 2007; Senn & Carey, 2010). The consideration of poly-victimization in past empirical studies suggest that it is the total burden, rather than one form of victimization, that is the crucial factor related to negative psychological outcomes (Felitti et al., 1998; Finkelhor et al., 2007). Inspired from the poly-victimization conceptualization, Grych, Hamby, and Banyard (2015) proposed a strengths-based framework to capture resilience in children and adults exposed to trauma and adverse childhood events by considering the total number of strengths of individuals. The current study aims to extend research on multiple strengths by documenting the relationship between individual strengths and poly-strengths, and low psychological distress in a representative sample of youth.

Violence Exposure and Adversities

The research field on cumulative violence exposure and adversities was initiated with the Centers for Disease Control and Prevention (CDC) - Kaiser Permanente Adverse Childhood Experiences (ACEs) Study by Felitti and colleagues (1998). ACEs include childhood maltreatment and other traumatic events. It also includes other adverse life events (e.g., divorce) that can disrupt healthy developmental trajectories and generate long-lasting consequences for health and well-being (Felitti et al., 1998). The original study aimed to assess the cumulative exposure to childhood emotional, physical, or sexual abuse, and household dysfunction on health and well-being development among 9,508 adults. The ACE score, derived from the sum of the different types of ACEs, reflected cumulative childhood stress. Two waves of data collection showed that more than half of participants (52%) reported at least one ACE (Felitti et al., 1998), close to half (40%) experienced at least two ACEs (Kessler et al., 2010) and 6% reported four or more ACEs (Felitti et al., 1998). Participants reporting four or more ACEs had higher risks for a variety of negative outcomes including alcoholism, drug abuse, depression, suicide attempt, smoking, poor self-rated health and physical inactivity, compared to participants who reported only one ACE (Felitti et al., 1998). Studies also identified associations between ACEs, intimate partner violence (Dube, Anda, Felitti, Edwards, & Williamson, 2002; Whitfield, Anda, Dube, & Felitti, 2003) and sexual victimization in adulthood (Ports, Ford, & Merrick, 2016). These results highlight the potential cumulative role of childhood adversities on later health and well-being and underscore the importance of considering adverse life events in childhood in studies on trauma.

Parallel to the ACE studies, childhood traumas were assessed in an emergent field of study on victimization. Finkelhor et al. (2007) coined the term "poly-victimization" to describe the experience of individuals who suffer multiple forms of victimization. Victimization includes physical and emotional abuse by caregivers, assaults and harassment by peers, sexual victimization by acquaintances and strangers, as well as exposure to crime and violence in communities and neighbourhoods. Two studies from a 3-wave longitudinal project involving a nationally representative sample of 2,030 children ages 2–17, documented the role of multiple victimization. The first study assessed victimization in the past year and its associated trauma symptoms. From the sample, 24% suffered from five or more forms of victimization at either Wave 2 or 3. Among poly-victims, 30% suffered from sexual victimization, 41% had a victimization-related injury, 59% had victimization from both family and non-family members and 50% had victimization from unrelated adults or peers (Finkelhor, Ormrod, Turner, & Holt, 2009). Using the same sample, another study reported that 22% experienced four or more different kinds of victimization (considered as poly-victimization). Poly-victims showed more trauma symptoms, namely psychological distress, anxiety, depression and anger/aggression, and were more symptomatic than participants experiencing one form of victimization (Finkelhor et al., 2007). This last study stressed the importance of considering not only the amount of times a person has been victimized but also the diversity of traumatic events experienced. These cumulative events may signal broader victimization vulnerability and the need to assess different forms of victimization exposure to better assist victims of violence and adversities.

Conceptual Framework: Poly-Strengths

Inspired by previous work on poly-victimization, Grych, Hamby and Banyard (2015) proposed to assess resilience in children and adults exposed to violence with the Resilience Portfolio Model. This framework suggests that the total number of one's strengths is a more potent predictor of resilience than the nature of those strengths, as suggested for poly-victimization (Finkelhor et al., 2007). The term "poly-strengths" refers to the total number of protective factors that an individual possesses. It is thus an indicator of the number and variety of strengths included in an individual's "resilience portfolio". This portfolio includes resources and assets. Resources are external sources of support, and assets refer to individual internal characteristics that promote healthy functioning. Therefore, having different types of assets and resources (variety), and a high number within each category (number) is proposed to increase one's portfolio of strengths (Grych, Hamby, & Banyard, 2015; Hamby, Finkelhor, & Turner, 2014; Hamby, Grych, & Banyard, 2018).

The portfolio encompasses three functional categories of strengths: regulatory, interpersonal, and meaning-making strengths. Regulatory strengths refer to emotional, cognitive, behavioral, and physiological components such as executive functioning and planfulness, problem-solving, and self-esteem. Interpersonal strengths encompass the ability to build and sustain supportive relationships. This category includes gratitude, compassion, generosity, and forgiveness, as well as indicators of support such as parental and peer attachment and social support. Meaning-making strengths correspond to the capacity to find meaning in difficult and traumatic life events. Being optimistic, having a clear set of beliefs and goals, and a sense that life has meaning should facilitate one's experience of adverse life events (Grych et al., 2015; Hamby et al., 2014; Hamby et al., 2018). This holistic approach expands the range of protective factors that have been studied in resilience research by incorporating cumulative resilience mechanisms.

Using this conceptual framework, a recent study including 2,565 adolescents and adults aged 12 and over (Mean age = 30) from rural, low-income communities in southern Appalachia assessed protective factors and poly-strengths after controlling for exposure to violence and other adversities. Violence and adversities included interpersonal victimization, other adverse life events, and financial strain. Authors defined poly-strengths as the total number of strengths (n = 23) that each individual reported at above average levels (> .5 SD). Results indicated that nearly all participants (98.5%) were victims of at least one type of adversity and 58.6% experienced three or more adverse life events. In this context, poly-strengths was associated with increased well-being while taking into account individual strengths (Hamby et al., 2018). To our knowledge, this is the first study to demonstrate that the number and variety of strengths is important to consider in improving mental health. To obtain a more complete portrait of traumas, authors considered both interpersonal victimization experiences, as assessed in studies on poly-victimization, and other adverse life events, as assessed in ACE studies. Since their sample included a broad range of ages, it would be valuable to focus on a more homogeneous sample of adolescents to ascertain whether the same patterns of results is found. As adolescence is a key developmental period where youth are confronted with a number of challenges, such as revictimization, capturing

the contribution of protective factors to their well-being is most relevant (Finkelhor et al., 2007; Grych et al., 2015; Horn & Feder, 2018). Yet, to our knowledge, no study has examined the association between poly-victimization, poly-strengths and psychological well-being in a sample of adolescent youth.

In Quebec, Canada, multiple victimization and related forms of traumatic stressors and adversities are also an important public health issue among youth. Data from the 2012 Survey on Family violence among Quebec Children showed that 29% of children had experienced two forms of violence (psychological abuse and minor physical violence) in the same year (ISQ, 2013). This high rate stresses the urgency to assess the role of multiple strengths on psychological well-being among victimized youth. Combining the theoretical framework of the ACE study, poly-victimization, and poly-strengths, we aim to extend research on resilience by documenting different forms of victimization and adversities, as well as different types of strengths in a sample of adolescent youth. Thus, the current study aims to describe the prevalence of traumas and strengths in a representative sample of Quebec youth and to test whether poly-strengths is associated to low psychological distress, after considering poly-traumas. Given the complexity of victimization and related forms of traumatic stressors and adversity, a better understanding of the particular role of poly-strengths on well-being will contribute to orienting interventions towards youth exposed to violence and adversities.

Methods

Procedure

Data for the current study were drawn from the Quebec Youths' Romantic Relationships survey (QYRRS). This survey is a school-based probability sample that is representative of youth demographic in the Québec province with regard to the metropolitan geographical area, status of schools (public or private schools), teaching language (French or English), and socioeconomic deprivation index. Participants were given a correction weight in all analyses to correct biases in the non-proportionality of the schools sample. The weight was calculated as the inverse of the probability of selecting the given grade in the respondent's stratum in the sample multiplied by the probability of selecting the same grade in the same stratum in the population (refer to Hebert, Blais, & Lavoie (2017) for more details). Participants completed the survey in class. Written informed consent was obtained from each participant. The research ethic boards of the Université du Québec à Montréal approved this project.

Participants

The initial sample included 8,194 participants and the weighted sample resulted 6,531 youths aged 14-18 years. The weighted sample included more girls (57.9%) than boys (42.1%). The majority lived with both parents in the same household (63.1%), were born in Quebec (78.0%), and were Catholics (54.1%). Most of their mothers (60.9%) and fathers (51.5%) had a schooling level above high school. The majority of parents (85.5% of fathers and 82.2% of mothers) were reported to be currently employed. Socio-demographic characteristics of the sample are summarized in Table 1.

Table 1. Socio-demographic Characteristics of Participants

	%	Mean	Min	Max	SE
Age		15.85	13.67	17.98	0.11
Gender					
Girls	57.9%				
Boys	42.1%				
Family Structure					
Living with both parents in the same household	63.1%				
Living with both parents in different households (shared custody)	12.8%				
Living with one parent	21.9%				
Other family structure arrangements	2.1%				
Cultural or ethnic origin					
Quebecers or Canadians	78.0%				
Other cultural or ethnic groups	21.6%				
Education					
Mother					
High school or less	25.2%				
More than high school	60.9%				
Father					
High school or less	29.6%				
More than high school	51.5%				
Occupational status					
Mother					
Work	82.2%				
Does not work	15.6%				
Father					
Work	85.5%				
Does not work	8.9%				
Religion					
None	29.7%				
Catholic	54.1%				
Other religions	15.4%				

Measures

Questionnaires were mainly administered in French (96.9%). Two categories of traumas were assessed (victimization and stressful life events) along with eight strengths. Among regulatory strengths, four were surveyed: coping strategies, self-esteem, resilience and academic achievement. Optimism was the only meaning-making strengths that

was documented and three interpersonal strengths were surveyed: parental support and attachment, social support (seeking secure base) and the number of sources of support.

Adversities and traumas.

Adverse life events. Adverse life events were assessed with an adapted version of Early Trauma Inventory-Short Form (ETISF-SR; Bremner, Bolus, & Mayer, 2007). Items documented, for instance, being involved in a serious accident with major injuries, having experienced divorce, and having experienced death or serious illness of a close family member (see Table 2).

Sugarman, 1996; Hébert & Parent, 2000). Participants were asked to describe the frequency (from never (0) to 11 times or more (3)) of having witnessed their father or mother being physically assaulted by the other parent (e.g. being pushed, grabbed, slapped by a partner) with eight items. A dichotomized score was created based on having witnessed interparental violence.

Poly-traumas. In agreement with prior work (Felitti et al., 1998; Finkelhor et al., 2009; Finkelhor et al., 2007; Hamby et al., 2018), a poly-traumas score was calculated with the sum of all experienced traumas, including adverse life events. The possible number of exposures to traumas ranged from 0 (none reported) to 9 (reported all measured traumas).

Strengths.

Problem-focused coping. Problem-solving strategies were documented by using an adapted version of the Coping Across Situations Questionnaire (CASQ; Seiffge-Krenke, 1995). Four items of the subscale problem-focused coping were used (e.g. I try to analyze the problem and find different solutions), which were completed on a four-point Likert scale ranging from never (0) to many times (4). In our sample, the subscale showed marginal level of internal consistency (Cronbach α = .62), which is lower than the original study (Cronbach α =.79-.82; Seiffge-Krenke, 1995). The problem-focused score ranged from 0 to 12.

Self-esteem. Four items of the short version of the Self-Description Questionnaire (SDQ; Marsh & O'Neill, 1984) were used to assess self-esteem (e.g. I am good looking). Items of this scale ranged from 0 (false) to 4 (true) on a 5-point scale resulting in a score varying from 0 to 16 (Cronbach α = .88 in our sample). Higher scores indicated higher levels of self-esteem.

Resilience. Resilience was measured with the two-item version of the Connor-Davidson Resilience Scale (CD-RISC-2; Vaishnavi, Connor, & Davidson, 2007). Items ("able to adapt to change" and "tend to bounce back after illness or hardship") were rated on a 5-point scale ranging from 0 (false) to 4 (true) with a total score between 0 and 8. In our sample, Cronbach alpha was acceptable (Cronbach α = .69) as found in other studies (Cronbach α = .79; Vaishnavi et al. 2007; Ni et al. 2016).

Academic achievement. Perception of school success was measured with one item ("overall, how well do you think you are doing in your school work?"), adapted in French, from the National Longitudinal Survey of Children and Youth (NLSCY; Statistics Canada, 2007). The item ranged from 0 (very good) to 4 (very poorly).

Optimism. Optimism was evaluated via three indicators from an adapted version of the Beck Hopelessness Scale (BHS; Beck & Steer, 1988). Participants were asked to indicate to what extent each of the three statements ("I look forward to the future with hope and enthusiasm; When I look ahead to the future, I expect that I will be happier than now; My future seems dark to me") applied to them, on a 5-point scale (false, quite false, sometimes false/sometimes true, quite true, true). Scores of each indicators were reversed to obtain scores of optimism.

Parental support and attachment. Adapted from the Inventory of Parent and Peer Attachment (IPPA) questionnaire (Banyard & Cross, 2008), we used six items to assess the participant's relationship with their mother and father (three items in reference to mothers and three in reference to fathers). The questions (e.g., My mother/father cares about me) were on a five-point Likert scale ranging from never (0) to very often (4). The questionnaire showed good reliability (Cronbach $\alpha = .85$). The parental support score ranged from 0 to 12.

Social support. Social support was measured in two different ways. First, we documented the number of sources of support by asking Do you think the following persons [a parent/ a significant adult/ a sibling/ a friend] could listen and encourage you, if you needed to? Choices were No, A little, A lot. This item is from the Social and Health Survey among children and youth Quebecers 1999 (Aubin et al. 2002). Second, social support was assessed with an adapted version of the Network of Relationships Inventory (Furman & Buhrmester, 2009) which includes a new subscale: Seeks Secure Base. The three items referring to either close friends or partner (e.g. How much does this person show support for your activities?) were on a five-point Likert scale ranging from little or none (1) to the most (5). This subscale showed good reliability (Cronbach $\alpha = .82$).

Poly-strengths. Consistent with previous work (Hamby et al., 2018), we defined poly-strengths as the total number of resources and assets that each individual reported at above average levels (>.5 SD). In this sample, the range was from 0 to 8 (total number of strengths surveyed), with a mean of 3.95.

Psychological Distress. The 10-item Kessler Psychological Distress Scale Kessler Psychological Distress Scale (Kessler et al., 2002) assessed psychological distress over the past week. Items were on a five-point scale from 0 (never) to 4 (always), with a total score ranging from 0 to 40 (Cronbach $\alpha = .88$). A score of 12 and higher was used to identify a clinical level of psychological distress (Caron & Liu, 2010). A dichotomized score was created based on scores not reaching clinical psychological distress (0 = clinical psychological distress; 1 = non-clinical levels of psychological distress). In the present analysis, we focused on low levels of distress. We consider low levels of distress as part of the process to achieve psychological well-being.

Socio-demographic variables. Gender (0 = male, 1 = female), age (continuous variable), family structure (living with both parents in the same household, living with both parents in different households—shared custody, living with one parent, other family structure arrangements), education and working status of each parent, ethnicity and religion were documented.

Analysis

A complex sample was taken into account in the analyses using Mplus 8.1 software (Muthén & Muthén, 1998–2012). A logistic regression with dichotomized variables was conducted to examine whether there was a significant difference between those who experienced one trauma and those with four traumas or more. Based on Hamby et al. (2018), we conducted hierarchical logistic regression analyses to identify which strengths were associated with low levels of psychological distress, after accounting for demographic variables and individuals' traumas. Given issues of multicolinearity (VIF= 53.51), poly-strengths and individual strengths had to be examined in separate regressions. Age and gender were entered in the first block, poly-traumas in the second, and poly-strengths in the third block (see Table 4 for details) for the first regression and the individual resilience portfolio of strengths in the third block (see Table 4 for details) for the second regression. Missing data varied from 0 to 19% and were addressed using the approach of maximum likelihood to estimate the model parameters when considering all the raw data available.

Results

Table 2 shows the prevalence of traumas and adverse life events experienced by teenagers in our sample. Two traumas were experienced by more than 60% of the sample (witnessing interparental violence and experienced death or serious illness of a close one). A total of 10.3% were victims of sexual abuse. Being taken in charge by child protection services was the least frequent adverse life event (4.0%). More than a third of the sample experienced 4 traumas or more (37.0%). The average number of trauma experienced is 3.04.

Table 3 indicates the prevalence of strengths. Parental support was the most frequent strength in the sample (63.4%). Among other interpersonal strengths, social support (number of sources of support) was the least frequent (47.1%). Among all strengths, optimism was the

Table 2. Prevalence of Traumas and Adverse Childhood Events of Youth in Québec, Canada

Traumas and adverse life events	Prevalence Rate
Have been taken in charge by child protection services	4.0%
Have been sexually abused	10.3%
Experienced an intense fear, horror or helplessness	16.3%
Involved in a serious accident and got seriously injured	17.9%
Have been physically assaulted by a family member	25.4%
Witnessed violence towards others, including family members	30.2%
Experienced divorce or separation of parents	32.0%
Exposure to parental psychological violence	42.3%
Exposure to interparental violence	60.4%
Experienced death or serious illness of a close one	66.9%
Experienced 4 traumas or more	37.0%
Poly-trauma (sum) score	(*M*= 3.04, Range = 0–10, SE= 0.070)

Table 3. Prevalence of Strenths of Youth in Québec, Canada

Traumas and adverse life events	Prevalence Rate
Regulatory strenths	
Problem-focused coping	52.0%
Academic achievement	55.5%
Self-esteem	55.9%
Resiliency	58.2%
Meaning-making strength	
Optimist	43.4%
Interpersonal strengths	
Social support (seeks secure base)	45.1%
Social support (number of sources of support)	47.7%
Parental support and attachment	63.4%
Poly-strengths (sum) score	(*M* = 3.95, Range = 0–8, SE=0.084)
Low levels of psychological distress	67.6%

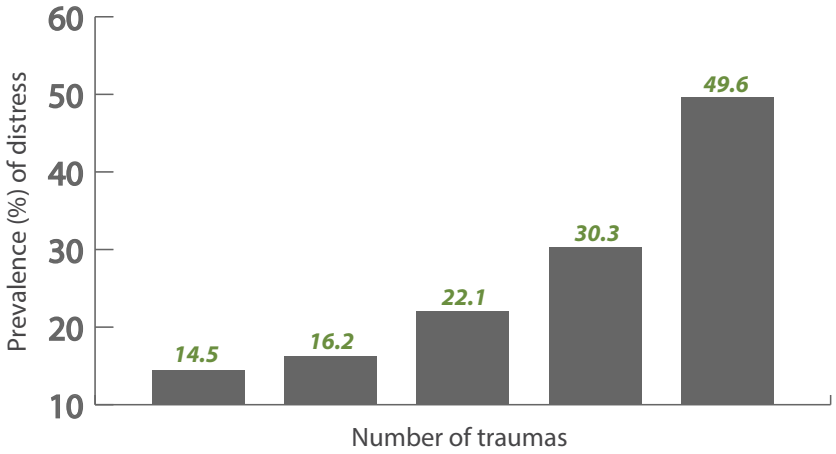
less frequent strength (43.4%) of the sample. Among regulatory strengths, resiliency skills were most frequent (58.2%). More than half of the sample had at least five strengths; the average number of strengths was 3.95. Among participants, 67.6% of the sample did not show clinical levels of psychological distress.

Figure 1 shows the prevalence of clinical psychological distress among victims of zero to four traumas and more. This rate increased with the number of experienced traumas. Among poly-victims, half (49.6%) of the participants showed clinical levels of psychological distress. This rate is more than three times the rate found for teenagers reporting no traumas.

Results from logistic regression indicated significant group differences ($\beta = 13.64$; $p < .001$; not shown) between participants who experienced one trauma and those reporting four traumas or more. Table 4 shows the results from hierarchical logistic regressions predicting low levels of psychological distress. Demographic characteristics and traumas together explained 18% of the variance of low distress. Youth who experienced poly-traumas were less likely ($\beta = -1.159$; $p < .001$) to show non-clinical levels of psychological distress. The full model 1 showed that poly-strengths were uniquely associated with low levels of psychological distress. Poly-strengths increased the odds of not being clinically distressed by 1.310 ($\beta = 0.270$; $p < .001$). After accounting for demographics and poly-traumas, poly-strengths explained 24.2% of the variance of low distress.

The full model 2, which includes all individual strengths, accounted for 37.7% of the variance in low levels of psychological distress, which 13.3% resulted from individual strengths (model 2). After accounting for demographic variables and poly-traumas, many individual strengths accounted for unique variance. Among regulatory strengths, high self-

Figure 1. Prevalence of Strenths of Youth in Québec, Canada



esteem (β = 0.789; p < .001), having resiliency skills (β = 0.593; p < .001), and perception of school success (β = 0.123; p < .05) were positively associated with low psychological distress. As for the three optimism indicators, anticipating the future with enthusiasm/hope (β = 0.300; p < .001) and not seeing the future as vague and uncertain (β = 0.283; p < .001) were positively associated with low distress, while seeing oneself happier in the future was negatively associated with the outcome. Using problem-focused strategies was negatively associated with low distress (β = -0.340; p < .001). All interpersonal strengths, which are related to social support, were associated with low levels of psychological distress, and were statistically significant, except for the number of sources of support.

Discussion

The purpose of this study was to describe the prevalence of traumas and strengths in an adolescent sample. It also examined the relationship between poly-strengths and non-clinical levels of psychological distress, and explored which strengths were associated with the outcome, after accounting for demographic variables and individuals' traumas. To our knowledge, this is the first study that used the poly-strengths framework in a representative sample of youth. Results show that many youths, aged 15 years on average, experienced multiple traumas over their lifetime. Pertaining to the strengths, more than half of the sample possessed at least five strengths. Findings also indicated that poly-strengths was associated with low clinical distress after accounting for poly-victimization. The combination of strengths appears to decrease the likelihood of experiencing clinical levels of psychological distress, which can contribute to a healthy functioning in context of adversities. While some strengths were individually associated with lower levels of psychological distress, having multiple strengths also played an important role. Results thus corroborate prior work with samples of youth in the USA (Hamby et al., 2018).

Table 4. Logistic Regressions of Low Psychological Distress from Strengths and Traumas of Youth in Québec, Canada

	Low Psychological Distress		
	Odds ratio	**95% CI**	**β (S.E.)**
	Demographics		
Gender	3.329***	3.049–3.636	1.203***(0.054)
Age	0.848***	0.810–0.888	-0.164***(0.028)
R^2 demographics only	0.103***		
	Traumas		
Poly-traumas	0.314***	0.285–0.345	-1.159***(0.059)
R^2 poly-traumas added	0.181***		
	Resilience portfolio strengths		
Poly-strenths	1.310***	1.267–1.355	0.270***(0.20)
R^2 poly-traumas added	0.242***		
	Regulatory strengths		
Problem-focused coping	0.712***	0.634–0.800	-0.340***(0.071)
Self-esteem	2.200***	1.943–2.491	0.789***(0.076)
Resiliency	1.809***	1.664–1.967	0.593***(0.051)
Academic achievement	1.131*	1.029–1.243	0.123*(0.057)
	Meaning-making strengths		
Optimism indicators			
I anticipate my future with enthusiasm/hope	1.351***	1.269–1.438	0.300***(0.038)
I see myself being happier in the future	0.725***	0.688–0.763	-0.322***(0.031)
My future seems vague and uncertain	1.328***	1.255–1.404	0.283***(0.034)
	Interpersonal strengths		
Parental support and attachment	1.247***	1.099–1.414	0.220***(0.077)
Social support (number of sources of support)	1.163	1.034–1.307	0.151*(0.071)
Social support (seeks secure base)	0.694***	0.630–0.765	-0.365***(0.059)
R^2 resilience portfolio strengths added (model 2)	0.377***		

*p < .05, ** < .01, *** p< .001.

More specifically, the first objective of the study was to examine the prevalence of traumas and strengths in a representative sample of Quebecer youths. The rates of traumas and adverse life events were mainly high compared to known rates in Canada (Afifi et al. 2014; McDonald, Kingston, Bayrampour, & Tough, 2015; Children's Mental Health Research Quarterly, 2011), although not many youths had experienced being removed from their home by social services. More than half of the sample experienced two traumas in their lifetime. One youth out of ten was a victim of sexual abuse and more than a quarter witnessed violence or were physically assaulted by a family member. More than one youth

out of three experienced at least four traumas and adverse life events. Results also showed that psychological distress was more prevalent among poly-victims. Youth victims of four or more forms of trauma experienced more psychological distress compared to non-victims, or to teenagers who experienced one form of trauma. These rates indicate an important number of broad victimization vulnerability among youth. The rates are in line with results from past studies among youth that reported that the cumulative effect of trauma was a more potent predictor of psychological distress than a specific form of trauma (Finkelhor et al., 2007; Furman & Buhrmester, 2009). Interventions and research focus need to extend to include diverse forms of victimization exposure. In parallel, policy makers should encourage a trauma-informed approach in schools so that teachers and other staff could be prepared to recognize and respond to those who have been impacted by traumatic stress (Lai et al., 2018).

Although rates of traumas were high, the level of strengths reported were high as well. More than half of participants possessed strengths such as problem-focused coping, self-esteem, resiliency, academic achievement and parental support, the latter being the most prevalent. Optimism was the least frequent strength, while almost half of the sample possessed it. These encouraging findings suggest that many youths have multiple strengths in their resilience portfolio. These strengths are promising protective factors for one's exposure to violence and other adversities. As findings showed that youth possess many strengths that can help them hold a healthy functioning despite adversities, using a strengths-based approach in developing programs is relevant. Interventions targeting victimized and non-victimized youth should focus on assisting them in identifying strengths, improving these strengths and developing their resilience portfolios. Strength-based programs could focus on developing multiple and diverse strengths such as supportive relationships, efficient coping strategies and regulatory strengths such as self-esteem and meaning-making strengths, namely optimism. Regardless of the issue experienced by youth, intervention programs, including prevention initiatives, should adopt a balanced and holistic approach that promotes strengths. Developing further and diverse assets and resources will contribute to increasing resilience as well as mental and sexual health among youth and poly-victims.

The second objective of the study was to assess the relationship between individual strengths and poly-strengths, and low clinical psychological distress after considering one's traumas. Results show that the construct of poly-strengths was associated with low levels of psychological distress and thus, having multiple strengths might be part of the process to achieve psychological well-being. These findings suggest that the factor of poly-strengths is strongly associated with resilience. Having multiple and heterogeneous strengths succeeds in promoting healthy functioning and overcome psychological distress even among those who are the most at risk for mental health issues, namely poly-victims. Knowing that experiencing multiple forms of victimization is a stronger predictor of psychological distress than one particular form of victimization (Finkelhor et al., 2007), and that multiple strengths can interfere with mental health consequences such as psychological distress, documenting more about the potential role of poly-strengths on mental health outcomes is of outmost importance. Implications can also apply to less victimized youth. In a preventive approach, youth in general should be more prepared to face adversities to help decrease potential mental health consequences.

Results also showed that individual strengths (model 2) accounted for 13% of the variance in low clinical distress. Many strengths represent promising individual protective factors in decreasing distress, especially self-esteem. Surprisingly, problem-focus strategy was negatively associated with low psychological distress. Teenagers who rely on this strategy might be too focused on problems, making them more salient and stressful. Thus, being too focused on the problem might increase psychological distress. Also, the fact that social support was not associated with well-being might be explained by the perception of peer pressure instead of support. Having close friends or a partner that encourage you to achieve something could generate stress and thus could be confused with pressure (Camara, Bacigalupe, & Padilla, 2017; Kimberlin & Winterstein, 2008). The dual role of interpersonal relationships, as stressors and as sources of social support, could then explain higher levels of psychological distress.

These findings should be considered in light of potential limitations. The timeframe within which traumas were measured was over a lifetime period. Participants might have had difficulties in recalling all traumas experienced, which might have led to an underestimation of the number of traumas. In addition, among participants who reported nine traumas, some could have experienced more traumas than the number we documented. Therefore, the poly-trauma score might underestimate the number of traumas in our sample. Also, a longitudinal design would allow to confirm the predictive association between poly-strengths and later well-being. In addition, in this study, low psychological distress was considered as part of the process of achieving well-being and as a proxy of positive adaptation. Future studies need to include a broader range of indicators to better assess well-being. In our analysis, we accounted for gender since poly-victimization trajectories and strengths may differ according to this variable, but future studies should consider it as a potential moderator. Although this study did not assess the same strengths as in the original resilience portfolio (Hamby et al., 2018), we were able to show that individual strengths and poly-strengths can act as protective factors against psychological distress. Combining different theoretical frameworks is a strength of this study. However, the documented adverse life events may not have been traumatic for the child. There seems to be an important distinction to be made between experiencing these events as traumatic and experiencing them as adverse. Further studies should examine rather these events are perceived as traumatic from participants' view. Despite these limitations, the study offers some insights into an understudied topic. The sample is a nationally representative sample of Quebecer youths, which allows us to generalize to the youth population of Quebec.

Implications

This study contributes to the current knowledge on violence and resilience, but also to the current efforts to assist victimized youth. Our findings highlight the importance of assessing multiple forms of traumas as well as different strengths in youth. To design effective interventions and programs, both must be targeted. Future studies should include a more comprehensive array of strengths from the three categories considered in order to test a more complete resilience portfolio model. Assessing the relationships between poly-strengths and other indicators of positive adaptation, such as well-being, satisfaction with life or social competence, could be

of interest. The potential moderating role of poly-strengths (e.g. self-esteem, social support, optimism) in the relationship between a child's victimization history and positive adaptation should be analyzed to address poly-strengths from a different research angle.

In sum, the present study highlights that some adolescents have the capacity to thrive despite adversities. Analyzing factors associated with such a trajectory of resilience informs interventions. Hopefully, development in practice will allow to foster positive adaptation facing diverse adversities.

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Ten Answers Every Child Welfare Agency Should Provide

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Abstract:

A university-child welfare agency partnership between the Factor-Inwentash Faculty of Social Work at the University of Toronto and Highland Shores Children's Aid (Highland Shores), a child welfare agency in Ontario, allowed for the identification and examination of ten questions to which every child welfare organization should know the answers. Using data primarily from the Ontario Child Abuse and Neglect Data System (OCANDS), members of the partnership were able to answer these key questions about the children and families served by Highland Shores and the services provided to children and families. The Ontario child welfare sector has experienced challenges in utilizing existing data sources to inform practice and policy. The results of this partnership illustrate how administrative data can be used to answer relevant, field-driven questions. Ultimately, the

answers to these questions are valuable to the broader child welfare sector and can help to enhance agency accountability and improve services provided to vulnerable children and their families.

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Child maltreatment; child protection; child welfare; education.

As in other jurisdictions in Canada, the dual mandate of Ontario's child welfare organizations is to promote the safety and well-being of children served (Trocmé, Kyte, Sinha, & Fallon, 2014). Each day, child welfare workers assess concerns reported, provide in-home services, and in very rare cases, place children out-of-home. Despite decades of significant policy changes in Ontario, including efforts to strengthen accountability to funders, communities, and families (Commission to Promote Sustainable Child Welfare, 2012), there is minimal understanding of child welfare service trajectories and the impact of these services on children and families (Fallon, Filippelli, Black, Trocmé, & Esposito, 2017). This lack of understanding is a significant barrier to accountability, transparency, and responsive practice and policies. This brief report provides ten questions that are informative at an agency level.

The Ontario child welfare sector has experienced numerous challenges in utilizing existing data sources for daily operations management and the evaluation of practice and policies (Fallon et al., 2017). Child welfare organizations typically do not have the resources, research, and analytic capacity to analyze administrative and census data (Esposito et al., 2016; Fallon et al., 2017; Fallon, Trocmé, et al., 2015; Trocmé, Roy, & Esposito, 2016). Notwithstanding these challenges, there is great promise in utilizing existing administrative data to better understand child welfare services and their impact (Drake & Jonson-Reid, 1999; Fallon et al., 2017).

A university–child welfare agency partnership between the Factor-Inwentash Faculty of Social Work at the University of Toronto and Highland Shores Children's Aid (Highland Shores), one of 49 child welfare organizations in Ontario, afforded a unique opportunity to identify ten fundamental questions to which every child welfare organization should know the answer (see Table 1). The final ten answers/questions were established though continual discussion and feedback from the agency, the research team, and the OCANDS

programmers. These questions reflect different points along the service continuum, from the initial investigation to out-of-home placement. The answers were derived by combining existing sources of non-identifying, aggregate data from the Ontario Child Abuse and Neglect Data System (OCANDS), the Census, and the Ontario Incidence Study of Reported Child Abuse and Neglect 2013 (OIS-2013) (Fallon, Van Wert et al., 2015). OCANDS data are case-level administrative data that are extracted from different information systems, mapped and harmonized. OCANDS allows for the construction of entry and exit cohorts. This report illustrates how university-child welfare partnerships are integral to utilizing and harnessing the potential of existing data sources that can increase understanding of services and outcomes for vulnerable children and their families.

From Questions to Answers: Enhancing Understanding and Accountability

Highland Shores Answers Every Child Welfare Agency Should Provide (Table 1) emphasize how formal university-child welfare partnerships are critical to both advancing knowledge and enhancing agency accountability. These ten answers provide basic and timely information about the work of Highland Shores to child welfare professionals, policy-makers, and their community. For instance, Highland Shores posted these answers on their organization's website.

The Ontario Child Abuse and Neglect Data System (OCANDS) was primarily used to answer the ten questions. OCANDS is the first data system in Ontario to track child welfare-involved children and families (Fallon et al., 2017). OCANDS is a child-specific, event-level, longitudinal database that corresponds to the child welfare service continuum. OCANDS data can be used to respond to administrative or practice questions (Fallon et al., 2017). Each participating agency can access information about its service performance on available measures, along with a comparison to provincial norms on OCANDS' web-based reporting tool. The ten answers that originated from this partnership were replicated for other OCANDS participating agencies and can be accessed through OCANDS' dynamic reporting tool.

Each of the ten questions and answers are summarized below.

Table 1: Answers for Highland Shores Community

The Question	The Answer	The Methodology Used	Why is it Important?
1. How many children are in our community?	There are just under 38,000 children 15 years of age and under in the Highland Shores catchment area. 3% of the catchment population are Indigenous	Used census data for the catchment area of Highland Shores.	Understanding the population served by the child welfare agency provides the local context and allows for comparisons with other agencies serving similar populations.

Table 1: Answers for Highland Shores Community (continued)

The Question	The Answer	The Methodology Used	Why is it Important?
2. What proportion of children from our community do we assess each year?	Each year, about 5.2% of children come to the attention of Highland Shores for a concern about their wellbeing or safety that requires assessment.	First, the approximate number of investigated children was calculated by multiplying the number of families investigated by a correction factor of 1.6 (the average number of children investigated per family by child welfare agencies in Ontario in 2013) (Fallon, Van Wert, et al., 2015). The calculated number of investigated children was then divided by the child population and multiplied by 100 to derive the proportion of children assessed. $$Proportion = \frac{Finv \times 1.6}{Cpop} \times 100$$	This is useful to measure community need and agency practice. Comparisons between agencies can illuminate differences in these areas.
3. How many families are assessed for a concern each year?	Each year, approximately 1,228 families are assessed for a concern about their children	The total number of investigations closed was divided by the number of fiscal years used in the calculation to get an annual estimate. $$Finv = \frac{1}{n}\sum_{i=1}^{n} closei$$	Understanding the number of families investigated is helpful to measure the volume of work and calculate other measures, including recurrence.
4. How many families after assessment are provided with ongoing child welfare services each year?	About 640 families (or 2.7% of the child population of Highland Shores' catchment area) are provided with ongoing services after assessment each year.	The number of cases closed at ongoing services was divided by the number of fiscal years included in the calculation to derive an annual estimate. Multiplying this estimate by a correction factor of 1.6 (the average number of children per family investigated by child welfare agencies in Ontario in 2013) (Fallon, Van Wert, et al., 2015), dividing by the child population, and multiplying by 100 gave the proportion of the population provided with ongoing child welfare services. $$Fong = \frac{1}{n}\sum_{i=1}^{n} closei$$ $$Proportion = \frac{Fong \times 1.6}{Cpop} \times 100$$	This shows the volume of families who move beyond investigation to service provision. The agency can make both historical comparisons and comparisons with other agencies. This measure also provides the basis for the calculation of the OCANDS-generated provincial and publically reported service performance indicator related to recurrence within 12 months following the closure of a case at ongoing child welfare services.

Table 1: Answers for Highland Shores Community (continued)

The Question	The Answer	The Methodology Used	Why is it Important?
5. Why do families return to our agency after their investigation file has been closed?	Families who come back to Highland Shores after receiving investigations return for an urgent need in only 3.9% of cases and for a more chronic need in 14.2% of cases.	Trocmé and colleagues (2014) created a taxonomy to classify child welfare investigations as either urgent protection or chronic need. Using this taxonomy, the reason for a case being reopened for investigation at Highland Shores was classified as either urgent or chronic. The total number of investigations reopened as urgent and the total number of investigations reopened as chronic in a fiscal year were divided by the total number of families assessed in the same fiscal year and multiplied by 100 to derive the proportion of recurrences that were urgent and chronic. $Pchronic = \frac{Furgent}{Finv} \times 100$ $Purgent = \frac{Fchronic}{Finv} \times 100$	Understanding clinical drivers of recurrence can help estimate future volume of work and detect changes to the baseline level of work. Although cases reopen for a variety of reasons outside of the agency's control, there is potential to look at patterns in or causes for cases reopening urgently after being closed.
6. How many families return to our agency after receiving ongoing child welfare services?	After receiving ongoing services from Highland Shores, 23% of families return within 12 months.	The number of cases that received ongoing services and then were reopened within 12 months was divided by the total number of cases that received ongoing services in the fiscal year and multiplied by 100. $Prooportion = \frac{Freturn}{Fong} \times 100$	Knowing the number of cases that reopen after receiving ongoing services sheds light on whether cases were closed prematurely or whether the service provided was effective.

Table 1: Answers for Highland Shores Community (continued)

The Question	The Answer	The Methodology Used	Why is it Important?
7. How many children do we place in out-of-home care?	Highland Shores places approximately 103 children each year in out-of-home care. This number represents 3% of all children assessed and less than 1% of the child population of Highland Shores.	The proportion of children assessed that are placed in out-of-home care was calculated by dividing the number of children admitted into out-of-home care by the number of children investigated and multiplying by 100. The proportion of children in the catchment area population that are placed in out-of-home care was calculated by dividing the number of children admitted into out-of-home care by the child population and multiplying by 100. $Passess = \frac{Cadmit}{Cinvestigate} \times 100$ $Ppop = \frac{Cadmit}{Cpop} \times 100$	Historical comparisons and comparisons to other jurisdictions can illustrate differences and reasons behind these differences in the rate of children coming into care. This answer also helps to address the misconception about how frequently a child welfare agency brings children into care.
8. How long do these children remain in the care of our agency?	Within 36 months, 91% of children in our care have been discharged from care	The number of children discharged within 36 months of their admission date was divided by the number of children admitted into out-of-home care within a fiscal year and multiplied by 100. $Pdischarge = \frac{1}{n}\sum_{i=1}^{n}\frac{\text{discharge}}{admiti} \times 100$	Understanding the proportion of children that leave care and asking questions about those children that remain in care can help Highland Shores understand permanency in their agency.
9. What is the average number of days that children spend in out-of-home care?	The average number of days that children spend in care is 241.	The total number of days in care for children discharged within 36 months in a fiscal year was divided by the number of children discharged within 36 months in the same fiscal year. $Dincare = \frac{1}{n}\sum_{i=1}^{n}\frac{\text{dayi}}{dischargei}$	This is a permanency measure that can help Highland Shores understand how quickly children leave care.
10. Do the children in care stay in the same placement during their time in care?	About 65% of children stay in the same placement for the duration of their care. 20% of children move once, 6% of children move twice, and 9% of children move three or more times.	The number of children who moved placements once, twice, and three or more times was divided by the total number of children admitted into care and multiplied by 100. $PT = \frac{\sum_{i=1}^{n}\text{childTi}}{Finv} \times 100$	Understanding placement stability can help to answer questions about the primary reasons and factors for the moves. Highlighting the relative proportion of children that move for their third time is important because these are likely among the most vulnerable children in care.

1. How many children are in our community?

This question highlights the importance of knowing the local context for service provision and is helpful for comparing socio-demographic characteristics between Ontario child welfare organizations. Knowing the demographics of the community including ethno racial composition and income distribution, allows agencies to begin to understand issues of disparity and disproportionality.

2. What proportion of children from our community do we assess each year?

This question provides the proportion of investigations at Highland Shores and can help elicit further questions at the agency and provincial levels with respect to whether this measure is reflective of community need and/or agency practice. This approach is helpful in determining the proportion of cases receiving forensic services versus those that receive customized approaches.

3. How many families are assessed for a concern each year?

This question is family-based and is expressed as a total number or volume of work. There are wide variations in the rates of investigation across child welfare organizations in Ontario (Fallon et al., 2016). Approximately 1,228 families are investigated by Highland Shores each year.

4. How many families after assessment are provided with ongoing child welfare services each year?

The volume of families who move beyond investigation is an important measure with respect to needs of the population and agency practice. Approximately 640 families (2.7% of the Highland Shores child population) are provided with ongoing services after assessment each year. Differences between agencies in the proportion of cases that remain open beyond the investigative phase could be the result of the needs of the population, agency practice, and/or other factors.

5. Why do families return to our agency after their investigation file has been closed?

Child welfare organizations in Ontario have identified understanding recurrence (having contact with the child welfare system after file closure) as a key priority (Fallon et al., 2017). According to analyses of OCANDS-generated system metrics, rates of recurrence vary considerably between agencies (Fallon et al., 2016, 2017). Higher rates of recurrence have been associated with organizations serving a higher proportion of individuals with lower income, a greater proportion of the Indigenous population, and a greater proportion of lone parent families (Fallon et al., 2016).

In order to better understand recurrence, an urgent-chronic investigative framework was applied to cases closed after an investigation (Fallon et al., 2017). This framework categorizes investigations as urgent protection where a child's safety is the overriding concern, or chronic need, where the focus of concern is on the impact of family dysfunction on child well-being (Trocmé et al., 2014). After receiving investigations, families return to Highland Shores for an urgent need in approximately 3.9% of cases and for a chronic need in 14.2% of cases. This framework was applied to several other child welfare organizations

in Ontario through another formal university-child welfare agency partnership (Fallon et al., 2017). Similar to Highland Shores, investigations at these agencies classified as having chronic needs are more likely to return to the attention of child welfare authorities (Fallon et al., 2017).

6. How many families return to our agency after receiving ongoing child welfare services?

Approximately 23% of families receiving ongoing child welfare services from Highland Shores come back in contact with the organization within 12 months of case closure. This recurrence metric assists agencies in better understanding and determining whether reopened cases were prematurely closed and whether service was effective.

The partnership conducted a file review on a subset of cases to explore the reasons why investigations classified as urgent recurred as urgent. A key finding of the file review was that, although the urgent designation for the investigation was applicable and appropriate, these investigations occurred within the context of chronic family dysfunction and challenges that can threaten child well-being without adequate intervention (Filippelli, Kartusch, Fallon, Trocmé, & Cascone, 2018).

7. How many children do we place in out-of-home care?

Highland Shores places approximately 3% of all children investigated (less than 1% of the service population). This measure permits the examination of trends over time and provides a metric for comparisons across organizations. This measure importantly underscores that 97% of the families that Highland Shores serves are not placed into out-of-home care. Just as the decision to open a case is fraught with complexity, determining whether a child should come into care is arguably the most critical decision made by a child welfare worker.

8. How long do these children remain in the care of our agency

Within 36 months, 91% of children placed into out-of-home care are discharged. Time to discharge is a proxy for permanency, and understanding the time to discharge for children is important for facilitating discussions about the reasons children remain in care

9. What is the average number of days that children spend in out-of-home care?

This measure is another proxy for permanency. Using an entry cohort to ensure valid comparisons, the average number of days in care for children discharged within 36 months at Highland Shores is 241. The construction of entry cohorts allow us to track the trajectories of children which can be difficult using administrative data.

10. Do children placed in care stay in the same placement during their time in care?

About 65% of children stay in the same placement while in care. Approximately 20% of children move once, 6% of children move twice, and 9% of children move three times or more. This measure of placement stability is important as it identifies the proportions of move frequencies, which can assist in identifying factors that influence placement stability.

Implications: Data as the Cornerstone of University-Child Welfare Partnerships and Accountability

The work of this university-child welfare agency partnership presented in this paper illustrates how field-driven, administrative and practice questions can act as catalysts to harness the potential of existing administrative data. The Ten Answers Every Child Welfare Agency Should Provide are an example of how data are critical to aligning child welfare services with identified needs and to facilitating agency accountability, transparency, and responsive practices and policies. Analyses such as the Ten Answers represent an important step in combining and further developing collaborations to strengthen the knowledge mobilization components of University-Child Welfare sector initiatives in order to develop capacity towards sustainability of research expertise in the child welfare sector in Ontario. It also provides opportunities for greater integration of research in child welfare practice and policy.

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#ChildMaltreatment and Technology

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Abstract:

Technology may seem like a friend one day, a foe another depending on how and why it is being used. In today's world, we are inundated with social media, smart phones, tvs, and cars. Our ability to harness technology to make our lives a better place is a noble goal, however our ability to harness technology to enhance our research skills is absolutely necessary. The current paper explores the ways in which technology has been used and can be used to better understand child maltreatment and domestic violence. Overall, the message is clear, integrating technology-based research methods and practical approaches to helping vulnerable populations is one of this generations' paradigm shifts. Technology coupled with sound research methodologies can help move us forward in our exploration and understanding of social problems and interventions.

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child maltreatment, social media, technology

> Krazenberg's First Law: "Technology is neither good nor bad; nor is it neutral…technology's interaction with the social ecology is such that technical developments frequently have environmental, social, and human consequences that go far beyond the immediate purposes of the technical devices and practices themselves, and the same technology can have quite different results when introduced into different contexts or under different circumstances" (Kranzberg, 1986)

In 2018, the number of Internet users in the world surpassed four billion people, which indicates that more than half (53%) of the world are online. Sixty-eight percent of the world (5.135 billion people) use a mobile device (e.g., smartphone, mobile phone) (wearesocial.com, 2018) and 42% percent (3.196 billion people) of the world actively use some form of social media. The term "social media" is used ubiquitously in cultures throughout the world, however there are very few agreed upon or theoretical definitions of social media . Based on Ouirdi and colleagues (2014) study, they developed the following theoretical definition of social media: "a set of mobile and web-based platforms built on Web 2.0 technologies, and allowing users at the micro-, meso- and macro- levels to share and geo-tag user-generated content (images, text, audio, video and games), to collaborate, and to build networks and communities, with the possibility of reaching and involving large audiences" (p.123). Based on their working definition of social media, the following platforms meet their criteria of what is considered social media: Facebook, Twitter, YouTube, Wikipedia, LinkedIn, Tumbler, ResearchGate, Academia. Each social media platform has unique opportunities and challenges for networking and research, however given the data on the number of users of social media and the potential benefits, social media can provide a communication space with great breadth where the public, government organizations, and social service agencies can come together to disseminate information and promote positive change at many levels.

Social media and social networking have taught us the importance of how content can be used to shape how we interact with environments of public and networked information (boyd, 2008). These "Networked publics are publics that are restructured networked technologies…they are simultaneously (1) the space constructed through networked technologies and (2) the imagined community that emerges as a result of the intersection of people, technology, and practice" (p.15).The established network publics have not only opened new opportunities for individuals, organizations, communities to find and disseminate information, but also for researchers who can maximize these platforms for data collection, recruitment, and dissemination.

boyd (2008) argues that data from social networking sites has the following aspects, which are key to the definition of networked publics: "Persistence: online expressions are automatically recorded and archived; Replicability: content made out of bits can be duplicated; Scalability: the potential visibility of content in networked publics is great; and Searchability: content in networked publics can be accessed through search (p.27). These key aspects are what create the opportunities for social networking to be a data source that can be used by researchers to answer a multitude of research questions. While social networking was not originally designed to serve as a source of data, as Kranzenburg's (1986) First Law

states, "technology can have quite different results when introduced into different contexts or under different circumstances." His argument also holds true that social networking data provide us with the opportunity to examine the "environmental, social, and human consequences" (p.2).

The ability to harness these massive communication platforms presents both challenges and opportunities for conducting research and translating research into meaningful findings for key stakeholders. Collecting accurate and dynamic data in child maltreatment is dependent upon a multitude of factors at different levels of the system (e.g., child, perpetrator, mandated reports, child welfare system, and technology capabilities). Some of the factors that can impede data collection include the varying definitions of child maltreatment across jurisdictions, ability to access accurate reports of all instances of child maltreatment occurrences/recurrences, access to individuals who reported the data or who have first-hand knowledge of the situation, willingness and ability of victims and perpetrators to accurately report the event(s), social desirability, technology infrastructure to capture all of the dynamics of the maltreatment, and sharing of data across jurisdictions (Schwab-Reese, Hovdestad, Tonmyr, & Fluke, 2018). Given the multi-systemic challenges of collecting child welfare data combined with the exciting advances in technology and mining large datasets, child welfare researchers are looking at the role technology and social media can play in advancing our knowledge of and work with child maltreatment.

As noted above, Schwab-Reese et al., (2018) scoping review identifies the challenges associated with collecting child maltreatment surveillance data; however, they extend the discussion to demonstrate how social media and technology can be used to support our understanding of child maltreatment. Their review found that most of the research methods have been used in medicine and health related fields, but most can be adapted to increase our ability to understand child maltreatment from an epidemiological approach. These ideas include crowdsourcing, online recruiting, Internet search query, and media reports. Social media platforms, such as Twitter and Facebook, may also be possible to include. Ideally, they suggest that a combination of approaches should be used and can facilitate triangulation of methods to best understand.

The review by Schwab-Reese et al., (2018) prompted me to conduct two analyses to understand how Facebook, Google Trends ("Google Trends," 2018) and Twitter data can be used to understand child maltreatment. Facebook has recently been in the news with the data breach with Cambridge Analytica, which has generated significant negative attention on its platform and services (Griffiths, 2018; Timberg, Romm, & Dwoskin, 2018). When I accessed the Facebook development platform, it has recently changed its policies and is currently not allowing outside developers to gain access to Facebook user data (Archibong, 2018).

Google Trends uses an intuitive process to collect data on keywords and how they have trended in the past. For this analysis (see Figure 1), I entered the keywords "child abuse," "child neglect," "sexual abuse," and "child maltreatment," selected the United States, and requested data on trends for the previous 12 months (April 9, 2017 to April 1, 2018). The x-axis represents the weeks and the y-axis is the Interest Over Time, which is "Numbers

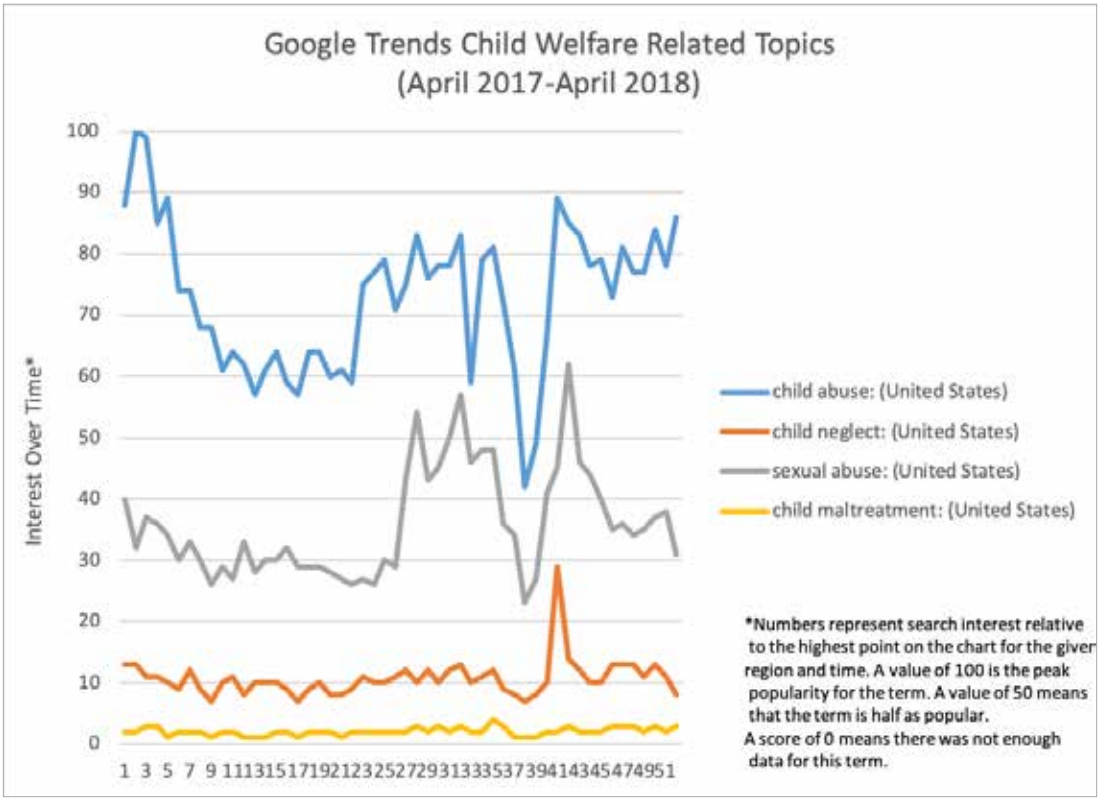
represent search interest relative to the highest point on the chart for the given region and time. A value of 100 is the peak popularity for the term. A value of 50 means that the term is half as popular. A score of 0 means there was not enough data for this term." The results show that "child abuse" was the most searched term, while "child maltreatment" was the least. The highest interest levels were in April, which coincidentally is National Child Abuse Prevention month, which would provide one explanation as to why "child abuse" would be a high frequency search term. Week 38 (12/23/17) showed a significant drop in interest for both child abuse and sexual abuse. The exact reason for this is unknown, however it may be due to the proximity to winter holidays. Two weeks later, January 14, 2018, there was another spike in searches for "child abuse," "sexual abuse," and "child neglect," while "child maltreatment" searches remained consistently low. Google Trends could be used to understand trends and try to pinpoint any events could have influenced interest on social media and the Internet.

Accessing historical data from Twitter initially proved to be challenging and expensive. However, after exploring numerous options suggested from a research on ResearchGate, I found TAGS, a Twitter Archiving Google Sheet. TAGS v.6.1.8 is a "free Google Sheet template which lets you setup and run automated collection results from Twitter" (Hawksey, 2018). The google docs interface allows users to identify Twitter search terms and collect up to 3,000 tweets (Twitter Terms of Service limit) over a one-week period. There is an option to update the archive to obtain new tweets that match the search term every hour. The following hashtag terms (without spaces) were entered into the TAGS program "childabuse," "childneglect," "sexualabuse," and "childmaltreatment." "ChildAbuse" had the most unduplicated tweets, with 2,815; "ChildNeglect" had 23, "SexualAbuse" had 1,879, and "ChildMaltreatment" had zero. Given the focus of the article by Wekerle et al., (2018), I ran an analysis of "CIHRTeamSV" and found six tweets in the last week that highlighted recent research shared using this hashtag. The TAGS program also archives the individual tweets and designates if the tweet is a retweet or original tweet. These data from Twitter could be analyzed, at a minimum, using a qualitative analytical method, such as content analysis (Figure 1).

While social media and other technology-facilitated approaches to data collection may be used for epidemiological research, it is imperative that the research findings be translated to practitioners, clients, policy makers, and other researchers. The National Institutes of Health Bench-to-Bedside program encourages scholars to create practical applications of their research ("NIH Clinical Center: NIH Bench-to-Bedside Program," 2018). While the Bench-to-Bedside program has typically focused primarily on moving research from laboratory settings to patient care, the tenets hold true for social science research as well, that dissemination of findings is critical to improve understanding of client needs and providing evidence-based services. Wekerle et al., (2018) explored the use of Twitter (#CIHRTeamSV) and ResearchGate to increase visibility of research on sexual violence prevention. They found that using Twitter and ResearchGate did increase engagement in scholarly activities and dissemination of findings.

Technology-facilitated approaches may also be used to directly work with children and young people impacted by child maltreatment. Research on the relationship between social

Figure 1: Google Trends Child Welfare Related Topics (April 2017 - April 2018)



media and high risk behaviors (alcohol, substance use, smoking, and sexual behaviors) has found relationships between exposure on social media and increased likelihood of these behaviors (Brockman, Pumper, Christakis, & Moreno, 2012; Moreno, Kacvinsky, Pumper, Wachowski, & Whitehill, 2013; Moreno, 2012; Moreno et al., 2014). The study by Negriff and Valente (2018) adds to the research on social media use and high risk behaviors among adolescents involved in the child welfare system. Research has documented that child welfare youth are more willing to engage in high risk sexual behaviors. What is not as clear is if child maltreatment experiences also increase risky online social networking behaviors. Negriff and Valente (2018) article advances our understanding of the impact of social networking behaviors of a vulnerable child welfare population and its correlation to high risk sexual behaviors. These results may support the development of an online intervention, similar to Moreno and colleagues' (2009) intervention on MySpace, that specifically addresses high risk behaviors and provides adolescents, in child welfare or not, with awareness of their displays of high risk behaviors which could prevent or minimize engagement in high risk behaviors (Moreno et al., 2009).

Tablet and computer based technologies has been used in other areas of medicine, with adolescents, to facilitate disclosure of sensitive topics, specifically depression, sexual

behaviors, and other sensitive topics (M. A. Moreno et al., n.d.). Wall, Jenney, and Walsh's (2018) article provides an overview of considerations and opportunities that are associated with data collection with vulnerable populations, including those who have experienced trauma and an innovative new tablet-based program to collect data on children's exposure to intimate partner violence. Researchers are constantly striving to balance the need to understand complex and potentially traumatic events, while also ensuring that children's voices are heard. The tablet application described by Wall and colleagues has the potential to minimize the difficulties associated with collecting data from children and adolescents while maximizing high quality and reliable data on traumatic experiences. This application still needs to be subjected to rigorous testing, (see ORBIT model; (Czajkowski et al., 2015) to determine its feasibility and eventually its efficacy.

Conclusion

Krazenberg's First Law (1986) perfectly summarizes where social science and computer science fields are intersecting: "environmental, social, and human consequences" are moving in directions that were possibly not anticipated when technology was originally developed. The intersection of social networking and research is also creating unique ethical challenges that have to be considered. Thomas Kuhn argued "Nevertheless, paradigm changes do cause scientists to see the world of their research engagements differently. Insofar as their only resource to that world is through what they see and do, we may want to say that after a revolution scientists are responding to a different world" (Kuhn, 1962, p. 110). Researchers and institutional review boards are faced with balancing protection of human subjects while also finding creative ways to collect data to inform our understanding of these intersections. It is exciting to see that child maltreatment and other violence-related social problems share unique features that create an opportunity for social media and technology-facilitated approaches to be used to better understand and disseminate information about these vulnerable populations.

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Self-Compassion as a Compensatory Resilience Factor for the Negative Emotional Outcomes of Alcohol-Involved Sexual Assault among Undergraduates

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Abstract:

Objectives: Approximately half of sexual assaults involve alcohol; these assaults tend to be more severe and may be more likely to result in negative emotional outcomes like anxiety and depression (Ullman & Najdowski, 2010). Self-compassion (SC; extending kindness and care towards oneself) may promote resilience from the negative emotional consequences of alcohol-involved sexual assault (AISA). This study examined SC as a resilience factor, testing whether it attenuates and/or counteracts the association between AISA and negative emotional outcomes.

Methods: Undergraduate drinkers (N = 785) completed measures tapping past-term AISA (Kehayes, et al., 2019), SC (i.e., Self-Compassion Scale; Neff, 2003), and anxiety and depression (Kessler et al., 2002). The Self-Compassion Scale was scored as two higher-order domains (self-caring, self-criticism) each with three lower-order facets (self-kindness, mindfulness, and common humanity; over-identification, self-judgment, and isolation).

Results: Supporting compensatory effects, the higher-order SC domains showed main effects: the presence of self-caring and relative absence of self-criticism counteracted the adverse effects of AISA on both anxiety and depression. Similarly, the lower-order SC facets showed main effects: the presence of self-kindness and relative absence of over-identification counteracted the adverse effects of AISA on anxiety/depression – with the relative absence of self-judgment and isolation additionally counteracting the effect of AISA on depression.

Conclusion: SC works as a compensatory resilience factor for the association between AISA and anxiety/depression.

Implications: SC interventions with attention towards increasing self-kindness and decreasing negative facets of SC may be important for negative emotional outcomes in general, including those following AISA.

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Conflict of Interest:

Authors declare no conflict of interest.

Keywords:

Self-compassion, Resilience, Alcohol-Involved Sexual Assault, Anxiety, Depression, Negative Emotional Outcomes

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Outcomes of Alcohol-Involved Sexual Assault among Undergraduates

Although sexual assault is often thought to consist of non-consensual sexual contact, a broader definition includes violations of sexual integrity such as threats of sexual

violence or unwanted contact (Testa, VanZile-Tamsen, Livingston, & Koss, 2004). Among undergraduates, 6.6% of women and 3.2% of men report experiencing sexual assault (Hines, Armstrong, Reed, & Cameron, 2012). Further, it is estimated that alcohol is used by the perpetrator, victim, or both in about half of sexual assaults (Ullman & Najdowski, 2010). Alcohol-involved sexual assault (AISA) is particularly relevant to university students as rates of AISA are higher on university campuses than in the broader community, in part due to the high prevalence of heavy drinking on campuses (Howard, Griffin, & Boekeloo, 2008).

Relative to other sexual assaults, some studies suggest that AISAs tend to be more severe and are more likely to involve multiple perpetrators (Gilbert et al., 2018; Ullman & Najdowski, 2010). Additionally, AISA victims who were drinking engage in more self-blame, endure more stigma, receive more negative reactions from others following disclosure, and experience more depression compared to sexual assault not involving alcohol and AISA involving perpetrator-only drinking (Littleton, Grills-Taquechel, & Axsom, 2009; Ullman & Najdowski, 2010). Intoxication at the time of a sexual assault may dampen the stress response and thus potentially reduce the distress a survivor later experiences (Clum, Nishith, & Calhoun, 2002). However, subsequent self-blame interpretations (e.g., that they could have avoided the assault if they were not drinking), may exacerbate anxiety and depression in AISA survivors and counteract any protective effect of their drinking at the time of the assault (Littleton et al., 2009; Ullman & Najdowski, 2010). Thus, exploring resilience factors that mitigate the potential negative emotional consequences that follow AISA is important.

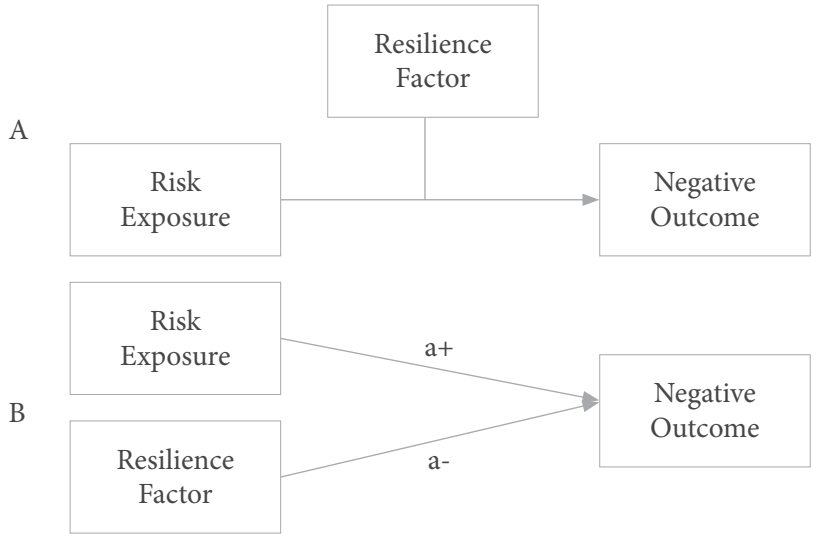

Figure 1. Theoretical models of how a resilience factor exerts its effects: (a) the protective model where the resilience factor interacts with the risk factor to buffer the effects of the risk factor on the adverse outcome; and (b) the compensatory model where the resilience factor exerts a main effect that works in opposition to (i.e., counteracts) the main effect of the risk factor on the adverse outcome.

Resilience is the process of overcoming or coping adaptively with traumatic experiences and circumventing trajectories that are associated with risk exposure (Fergus & Zimmerman, 2005; Rutter, 1985). Two alternative models have been proposed for how resilience factors operate (see Figure 1; see Fergus & Zimmerman, 2005 for a review). The first model is a protective model, where the resilience factor attenuates, or moderates, the association between the risk factor and the negative outcome. One example is high parental support attenuating the link between poverty and violent behaviour such that poverty is more strongly linked to violent behavior in those with low than those with high parental support. The second resilience model is a compensatory model, involving two main effects, where the resilience factor compensates for (i.e., acts in the opposite direction to) the effect of the risk factor on the negative outcome. One example is community resources counteracting the negative effects of child abuse on poor academic achievement. This model would involve main effects of both community resources (the resilience factor) and child abuse (the risk factor) on the outcome of academic achievement. As compared to the protective model where the resilience factor would interact with the risk factor, the compensatory model involves the risk and resilience factor both predicting the same outcome but in opposite directions, such that the resilience factor compensates for the adverse effects of the risk factor (Fergus & Zimmerman, 2005). This suggests that a compensatory effect may have a general effect as a resilience factor, while a protective factor may work to attenuate the adverse effects of a specific traumatic experience. Thus, compensatory factors might warrant being fostered among all people, and protective factors may be especially relevant for people who have experienced a specific trauma (e.g., AISA; Fergus & Zimmerman, 2005; Windle, 2011).

Self-Compassion

Extending compassion toward the self (i.e., "self-compassion"; SC; Neff, 2003a) – might serve as a resilience factor that protects from or compensates for associations between AISA and negative emotional outcomes. Some studies suggest that SC is broadly comprised of two high-order domains: the presence of self-caring and the absence of self-criticism (e.g., Brenner, Heath, Vogel, & Crede, 2017). Within the higher-order SC domain, there are three components. The first component is self-kindness, which involves providing kindness to the self through benevolent self-talk. The second component is mindfulness, which involves holding painful emotions in balanced awareness. Finally, common humanity is the understanding that one's failures and shortcomings are part of being human. Within the higher-order self-criticism domain, there are also three components: self-judgment (harshness toward the self, critical self-talk), over-identification (over-identifying with, ruminating on, or avoiding painful emotions), and isolation (believing one's failures are isolated to the self), for a total of six facets comprising the overall SC construct (Neff, 2003a). In general, SC is robustly related to less psychopathology such as lower depression and anxiety (MacBeth & Gumley, 2012).

SC may help AISA victims cope with traumatic events because SC is highly relevant to reducing negative emotional outcomes. Although AISA has not been examined in relation to SC, Neff (2003a) theorized that refraining from self-judgment and self-criticism may allow a person to experience self-kindness, subsequently mitigating the otherwise harmful effects of traumatic experiences. Further, a survivor may engage in more self-care behavior and less

self-criticism, experience less avoidance coping and ruminative self-blame, and think of the trauma as a painful, rather than a self-defining, experience (Zeller, Yuval, Nitzan-Assayag, & Bernstein, 2015). Together, these SC-relevant processes may facilitate natural exposure to trauma-related cues and thus promote a faster recovery from trauma among AISA survivors (Thompson & Waltz, 2008). Further, although SC is often conceptualized as an individual difference (Neff, Rude, & Kirkpatrick, 2007) there is evidence that it can be increased (e.g., Mindful SC; Neff & Germer, 2013). Altogether, SC is a resilience factor that could be targeted in treatment with AISA survivors.

Although no studies have examined the role of SC as a resilience factor for experiences of AISA and negative emotional outcomes, results from related areas support that it may act as a protective resilience factor. In one study, SC moderated the association between shame and eating disorder severity, such that shame was related to more severe eating disorder symptoms only among those with low SC (Ferreira, Matos, Duarte, & Pinto-Gouveia, 2014). In another study, SC attenuated the association between exposure to negative events and feelings of shame and embarrassment, in that negative events showed stronger associations with shame and embarrassment for those with low (vs. high) SC (Leary, Tate, Adams, Allen, Hancock, & Carver, 2007). This may have been due to SC helping individuals perceive the negative event as not their fault (Leary et al., 2007). SC also attenuated negative emotional reactions to ambiguous social feedback provided after participants gave a speech (Leary et al., 2007). Similar patterns may be at play in AISA as SC may protect victim-drinking AISA survivors from experiencing subsequent negative emotional effects. In fact, in a study of traumatized adolescents, higher levels of SC at baseline predicted lower depressive, suicidal, panic, and post-traumatic stress disorder (PTSD) symptoms at follow-up (Zeller et al., 2015). However, moderation could not be examined because Zeller et al.'s (2015) study did not include non-traumatized adolescents.

Given these findings and the dearth of research examining SC in the context of AISA, this study examined AISA and the role of SC as a resilience factor. It was hypothesized that: (1) the experience of AISA would be positively related to anxiety and depression, (2) SC would be negatively related to anxiety and depression, and (3) SC would attenuate the effect of AISA on anxiety and depression. Support for the third hypothesis through this interactive effect would favor the protective model of SC as a resilience factor for survivors of AISA. Main effects but no interactive effects would favor the compensatory model. The role of the six specific SC facets (e.g., the presence of self-kindness, the relative absence of isolation) as well as the higher-order domains of SC (i.e., the presence of self-caring and relative absence of self-criticism) were also explored as resilience factors given recent research suggesting that specific SC facets may be differentially tied to mental health outcomes (Valdez & Lilly, 2016).

Method

Participants

Respondents were a pooled sample of N = 1,315 Canadian first and second year undergraduates who completed one of two surveys administered at different time points as

part of a larger longitudinal study. The first time point was in the fall semester of 2016 and the second in the winter semester of 2017. Students who completed the survey at both time points had only their first survey included, and students who completed the survey at the second time point were only included if they had not completed the first survey. In order to be included in the present analysis, the participant had to report drinking in the past term.

Independent sample t-tests and chi square tests between the two cohorts of drinkers showed no significant differences between cohorts on age or gender. Additionally, chi square tests showed that the proportion who reported past-term drinking (i.e., 60%; n = 789) did not differ significantly between cohorts. Thus, cohort one and cohort two participants were combined into a single sample. Four respondents were dropped due to identification of their gender as "other" (n = 3; too small a group to permit reliable gender comparison), or to missing data on the victim-drinking AISA item (n = 1). The final combined sample of n = 785 was 75.2% female and 24.8% male, and the mean age was 18.9 (SD = 1.5) years.

Procedure

As part of the larger multi-site Movember-funded Caring Campus Project (see Stuart, Chen, Krupa, Narain, Horgan, Dobson, & Stewart, 2019), two waves of survey data were collected; data relevant to the current project were only collected at the Dalhousie University site. In the first wave (Fall 2016), all first-year students were sent an invitation email to complete a 30-minute online survey as were second-year students who had completed at least one prior survey in the longitudinal study. In the second wave (Winter 2017), all first- and second-year students who had completed a prior survey were sent an invitation email. Three reminder emails were sent on a weekly basis. Participants were also recruited through on-campus posters, newsletters, and social media advertisements. Both cohorts were included in the present analysis. The response rate to the email recruitment was 35%, similar to other Canadian undergraduate surveys (e.g., American College Health Association, 2013). Participants were compensated with their choice of a $5 gift card, a 0.5% course-credit in a participating psychology course, or a cash value donation of their compensation to on-campus mental health promotion and alcohol harm reduction activities. This study was approved by an institutional Research Ethics Board.

Measures

Self-Compassion Scale (SCS; Neff, 2003b). This 26-item measure consists of two higher-order domains and six lower-order facets. The first higher-order domain, self-caring, comprised three lower-order subscales: 1) self-kindness (e.g., "I try to be loving towards myself when I am feeling emotional pain"), 2) mindfulness (e.g., "When something upsets me, I try to keep my emotions in balance"), and 3) common humanity (e.g., "I try to see my failings as part of the human condition"). The second higher-order domain, self-criticism, comprised the remaining three subscales: 4) self-judgment (e.g., "When times are really difficult, I tend to be tough on myself"), 5) over-identification (e.g., "When I'm feeling down I tend to obsess and fixate on everything that's wrong," and 6) isolation (e.g., "When I fail at something that's important to me, I tend to feel alone in my failure;" Neff, 2003b). Each item

is rated on a 5-point Likert scale (1 = never to 5 = almost always). We used the means of these six lower-order subscales as well as two higher-order self-caring and self-criticism scales (means of the positive and negative items) in analyses in order to examine more general aspects of the positive and negative domains of the SC construct, as well as the more specific SC facets, as resilience factors. This scoring is supported through a recent factor analytic study showing that a bifactor structure involving these six lower-order facets and two higher-order domains provided the best fit for the SCS (Brenner et al., 2017). All SCS facet and domain scales showed acceptable to excellent internal consistency (α) in the present sample (facets: self-kindness = .84; mindfulness = .75; common humanity = .78; self-judgment = .83; isolation = .80; over-identification = .79; domains: SC = .90; self-criticism = .92).

Alcohol-Involved Sexual Assault. Past term AISA was measured using the item: "As a result of using alcohol… I was taken advantage of sexually," rated on a 6-point scale from 0 (never) to 5 (more than 10 times). This item was part of a larger questionnaire assessing a variety of potential harms associated with drinking used in a separate study (Chinneck et al., 2018). AISA was dichotomized (never [0] vs. once or more [1]), since frequency was positively skewed. This AISA item was correlated with anxiety and depression in a previous study measured using the Mood and Anxiety Symptoms Questionnaire, indicative of its validity (cf., Kehayes et al., 2019).

Kessler Psychological Distress Scale. This 10-item measure assesses emotional distress on a scale of 1 (none) to 5 (all of the time) over the last 30 days (K10; Kessler et al., 2002). For the present study, we used the sum of the 4-item anxiety subscale (possible range 4-20) and the sum of the 6-item depression subscale (possible range 6-30). Separation of these two subscales has been supported by previous factor analytic results (Brooks, Beard, & Steel, 2006; Chinneck et al., 2018). In the present sample, Cronbach's alphas were .79 and .89 for the anxiety and depression scales, respectively.

Data Analysis

Multivariate regression analyses (N = 785) were tested using SPSS version 24. All dependent and predictor variables were within the acceptable ranges of normality (Kim, 2013; West, Aiken, & Krull, 1996), residuals appeared to be normally distributed (examined using a P-P plot), and variance appeared to be constant (examined using a scatterplot of standardized residuals and standardized predicted values). Data were screened for outliers using boxplots, but no values were more than three times the inter-quartile range. The Durbin-Watson value was above the suggested cut-off of 1.50 for all models, satisfying the independent errors assumption. No variables were correlated higher than r = .75, all Tolerance values were above .20, and all variance inflation factor values were below 10, suggesting no problematic multicollinearity among variables (Schroeder, Lander, & Levine-Silverman, 1990).

Hypotheses were tested using a set of four multivariate hierarchical regression models. Each model added gender as a covariate in block one, the main effects of the predictors in block two, and the interaction terms in block three. AISA was effect-coded (i.e., -1 and 1) in order to create interaction terms (West et al., 1996) and all predictor variables were mean-centered for interpretation. The first two models tested AISA, the positively (self-caring)

Table 1: Inter-Correlations Among Study Variables (N = 785)

		M	*SD*	1	2	3	4	5	6	7	8	9	10	11	12
1	AISA (% Yes)	6.1	--	--	-.01	-.05	-.01	-.03	-.03	.02	-.02	-.01	.06	.09*	-.02
2	Self-kindness	2.89	.82		--	.69**	.57**	-.51**	-.36**	-.37**	.89**	-.45**	-.35**	-.45**	.03
3	Mindfulness	3.18	.75			--	.65**	-.30**	-.31**	-.25**	.88**	-.32**	-.23**	-.35**	.11*
4	Common Humanity	3.07	.82				--	-.23**	-.22**	-.23**	.84**	-.25**	-.16**	-.30**	.04
5	Self-judgment	3.30	.89					--	.73**	.73**	-.42**	.90**	.41**	.52**	-.13**
6	Over-identification	3.23	.93						--	.70**	-.34**	.90**	.42*	.48**	-.17**
7	Isolation	3.20	.93							--	-.34**	.90**	.36**	.51**	-.08*
8	Self-caring	3.03	.69								--	-.40**	-.29**	-.43**	.06
9	Self-criticism domain	3.24	.82									--	.43**	.55**	-.13**
10	Anxiety	9.66	3.26										--	.63**	-.14**
11	Depression	13.47	5.30											--	-.17**
12	Gender (% F)	75.2	--												--

Notes. * p < .01; ** p < .001. AISA = past-term alcohol-involved sexual assault (0 = no; 1 = yes). Self-kindness, mindfulness, common humanity, self-judgement, over-identification, isolation, self-caring, and self-criticism assessed with Self-Compassion Scale (SCS; Neff, 2003b). Anxiety and depression assessed with K10 (Kessler et al., 2002). Gender: 1 = female, 2 = male.

and negatively (self-criticism) worded SC domains as predictors in the second block, and the interactions between AISA and positively (self-caring) and negatively (self-criticism) worded SC domains in the third block, with anxiety and depression as the outcomes, respectively. The third and fourth models tested AISA and each of the six SCS facets in the second block, and the six AISA – SCS facet interactions in the third block, with depression and anxiety as the outcomes, respectively.

Results

Descriptive Statistics

Means, standard deviations, and correlations were examined (see Table 1). About six percent (6.1%) of participants endorsed past-term AISA. Based on Cohen's (1992) classification of correlations as small (r = .10-.29), moderate (r = .30-.49) and large (r > .50), there were small significant positive associations between AISA and depression and small significant negative associations between mindfulness and anxiety, and common humanity and anxiety. All other significant associations were moderate except for large positive associations between self-judgment, isolation, and over-identification with depression, and a large negative association between self-kindness and depression. Gender differences were observed as overall self-criticism, self-judgment, over-identification, and isolation

Table 2: Hierarchical Multivariate Regression Model with Positive and Negative Self-Compassion Domains Predicting Anxiety (N = 785).

		B	SE	95% CI of B		*p*	β	Overall Block F	R^2	ΔR^2	ΔF
				LL	UL						
Block one	Gender	-1.08	.27	-1.60	-.55	.000	-.14	16.26***	.02		
Block two	Gender	-.63	.24	-1.10	-.15	.010	-.08	53.31***	.21	.19**	64.35**
	AISA	.81	.43	-.04	1.66	.062	.06				
	Self-caring	-.63	.16	-.95	-.31	.000	-.13				
	Self-criticism	1.47	.14	1.20	1.75	.000	.37				

Notes. * $p < .05$; ** $p < .01$; *** $p < .001$. B = unstandardized beta coefficients; SE = standard error; LL = lower limit of CI of B, UL = upper limit of CI of B; β = standardized betas; ΔR2 = change in R2; ΔF = change in F statistic. AISA = past-term alcohol-involved sexual assault (0 = no; 1 = yes). Self-caring and self-criticism assessed with Self-Compassion Scale (SCS; Neff, 2003b). Anxiety assessed with K10 (Kessler et al., 2002). Gender: 1 = female, 2 = male.

Table 3: Hierarchical Multivariate Regression Model with Positive and Negative Self-Compassion Domains Predicting Depression (N = 785).

		B	SE	95% CI of B		*p*	β	Overall Block F	R^2	ΔR^2	ΔF
				LL	UL						
Block one	Gender	-2.05	.43	-2.90	-1.20	.000	-.17	22.42***	.03		
Block two	Gender	-1.11	.35	-1.80	-.42	.002	-.09	113.73***	.37	.34**	140.18**
	AISA	1.83	.63	.59	3.06	.004	.08				
	Self-caring	-1.87	.24	-2.34	-1.41	.000	-.24				
	Self-criticism	2.84	.20	2.45	3.24	.000	.44				

Notes. * $p < .05$; ** $p < .01$; *** $p < .001$. B = unstandardized beta coefficients; SE = standard error; LL = lower limit of CI of B, UL = upper limit of CI of B; β = standardized betas; ΔR^2 = change in R^2; ΔF = change in F statistic. AISA = past-term alcohol-involved sexual assault (0 = no; 1 = yes). Self-caring and self-criticism assessed with Self-Compassion Scale (SCS; Neff, 2003b). Depression assessed with K10 (Kessler et al., 2002). Gender: 1 = female, 2 = male.

were higher in females and mindfulness was higher in males. Thus, gender was added as a covariate in all regression models.

Models Involving Self-Caring and Self-Criticism Domain Scores

Results from the model that predicted anxiety (Table 2) showed significant main effects of gender in the first block, and significant main effects of self-caring and self-criticism and a marginal main effect of AISA in the second block of predictors. Female, as opposed to male,

Table 4: Hierarchical Multivariate Model with AISA and Six Self-Compassion Facets Predicting Anxiety (N = 785).

		B	SE	95% CI of B		*p*	β	Overall Block F	R^2	ΔR^2	ΔF
				LL	UL						
Block one	Gender	-1.08	.27	-1.60	-.55	.000	-.14	16.26***	.02		
Block two	Gender	-.64	.24	-1.11	-.16	.009	-.09	30.40***	.23	.21**	31.78**
	AISA	.89	.43	.05	1.73	.040	.07				
	Self-kindness	-.98	.20	-1.37	-.59	.000	-.25				
	Mindfulness	.18	.21	-.24	.60	.405	.04				
	Common humanity	.18	.17	-.15	.51	.291	.05				
	Self-judgement	.33	.20	-.07	.74	.102	.09				
	Over-identification	.86	.18	.51	1.20	.000	.24				
	Isolation	.15	.17	-.19	.49	.397	.04				

Notes. * $p < .05$; ** $p < .01$; *** $p < .001$. B: unstandardized beta coefficients; SE: standard error; CI of B: LL = lower limit, UL = upper limit; β: standardized betas; ΔR^2, ΔF: change in R^2 and F statistic. AISA: past-term alcohol-involved sexual assault (0 = no; 1 = yes). Self-kindness, mindfulness, common humanity, self-judgement, over-identification, and isolation assessed with Self-Compassion Scale (SCS; Neff, 2003b). Anxiety assessed with K10 (Kessler et al., 2002). Gender: 1 = female, 2 = male.

gender was associated with higher anxiety, AISA was marginally positively associated with anxiety, the presence of self-caring and the relative absence of self-criticism were negatively associated with anxiety. Together, these three main effects and gender showed significant associations with anxiety, $F (3, 784) = 67.93$, $p < .001$, and explained about 21% of the variance in anxiety scores. The addition of the interaction terms failed to add significant incremental variance in explaining anxiety scores ($\Delta R^2 = .00$, $p > .05$), suggesting no moderation. Thus, the block two model was retained as the final model (Field, 2013).

Results from the model with depression as the outcome (see Table 3) showed that there were significant effects of gender in the first block, and significant main effects of AISA, self-caring, and self-criticism in the second block of predictors. Female gender and AISA were positively associated with depression, and the presence of self-caring and the relative absence of self-criticism were negatively associated with depression. Together, these three main effects plus gender showed significant associations with depression, $F (3, 785) = 147.25$, $p < .001$, and explained about 36% of the variance in depression scores. The interaction terms failed to add significant incremental variance ($\Delta R^2 = .00$, $p > .05$), suggesting no moderation. Thus, the block two model was retained as the final model (Field, 2013).

Models Involving the Six SCS Facet Score

Results from the model with anxiety as the outcome (see Table 4) showed that in the first block, gender was a significant predictor, and in the second block of predictors, there

Table 5: Hierarchical Multivariate Model with AISA and Six Self-Compassion Facets Predicting Depression (N = 785).

		B	SE	95% CI of B		*p*	β	Overall Block F	R^2	ΔR^2	ΔF
				LL	UL						
Block one	Gender	-2.05	.43	-2.90	-1.20	.000	-.17	22.42***	.03		
Block two	Gender	-1.23	.36	-1.93	-.53	.001	-.10	58.83***	.37	.34**	62.28**
	AISA	1.79	.63	.55	3.02	.005	.08				
	Self-kindness	-1.36	.29	-1.94	-.79	.000	-.21				
	Mindfulness	-.20	.31	-.82	.42	.525	-.03				
	Common humanity	-.30	.25	-.79	.19	.225	-.05				
	Self-judgment	.78	.30	.19	1.37	.010	.13				
	Over-identification	.68	.26	.17	1.18	.009	.12				
	Isolation	1.26	.26	.76	1.76	.000	.22				

Notes. * $p < .05$; ** $p < .01$; *** $p < .001$. B: unstandardized beta coefficients; SE: standard error; CI of B: LL = lower limit, UL = upper limit; β: standardized betas; ΔR^2, ΔF: change in R^2 and F statistic. AISA: past-term alcohol-involved sexual assault (0 = no; 1 = yes). Self-kindness, mindfulness, common humanity, self-judgement, over-identification, and isolation assessed with Self-Compassion Scale (SCS; Neff, 2003b). Depression assessed with K10 (Kessler et al., 2002). Gender: 1 = female, 2 = male.

was a main effect of AISA. Results showed positive associations between female gender and anxiety and AISA and anxiety. Additionally, self-kindness was negatively associated with anxiety as was the relative absence of over-identification, even after controlling for the other lower-order SC facets, AISA, and gender. This main effect only model with anxiety as the outcome explained a significant 24% of the variance in anxiety scores, $F (7, 780) = 33.28$, $p < .001$. The interaction terms failed to add significant incremental variance in explaining anxiety scores ($\Delta R^2 = .01$, $p > .05$), suggesting no moderation. Thus, the block two model was retained as the final model (Field, 2013).

Results from the model with depression as the outcome (see Table 5) showed a significant main effect of gender in block one and a main effect of AISA in block two. Namely, female gender and AISA were positively associated with depression. Additionally, self-kindness and the relative absence of self-judgment, over-identification, and isolation were negatively associated with depression in block two even after controlling for the other lower-order SC facets, AISA, and gender. This main effect only model explained a significant 37% of the variance in depression scores, $F (7, 780) = 64.90$, $p < .001$. The addition of the interaction terms failed to add significant incremental variance in explaining depression scores ($\Delta R^2 = .00$, $p > .05$), suggesting no moderation. Thus, the block two model was retained as the final model (Field, 2013).

Discussion

This study examined the roles of SC as a resilience factor in the association between AISA and anxiety and depression. The first hypothesis that AISA would be positively related to anxiety and depression was supported in that there were small associations between AISA and anxiety and depression. The second hypothesis that SC would be negatively related to both depression and anxiety was supported. Finally, the third hypothesis that high SC would moderate the association between AISA and depression and anxiety – was not supported. Instead, results supported the compensatory resilience model in that there were main effects of both SC and AISA predicting anxiety and depression, with SC exerting effects in an opposing direction to the effects of AISA.

Of this sample of past-term drinkers, 6.1% reported experiencing AISA. AISA was positively related to depression and anxiety, consistent with previous studies showing that sexual victimization in general is associated with greater depression and anxiety (Xu et al., 2013) and that victim-drinking AISA is associated with high levels of distress including high levels of depression (Ullman & Najdowski, 2010). Additionally, results are consistent with previous studies showing direct inverse associations between SC and negative emotional outcomes (Ehret, Joormann, & Berking, 2015; Hoge et al., 2013; Krieger, Altenstein, Baettig, Doerig, & Holtforth, 2013; MacBeth & Gumley, 2012; Trompetter, de Kleine, Bohlmeijer, 2017).

Expanding on the current literature by examining SC and AISA together, this study showed opposing main effects of both AISA and SC domains/facets on negative emotional outcomes. Specifically, findings showed the two higher-order domains of SC – the presence of self-caring and relative absence of self-criticism – both compensated for (i.e., worked in opposition to) the adverse effects of AISA on depression and anxiety. Results showed similar patterns in the more nuanced analyses of the six SCS facets (i.e., the presence of self-kindness, mindfulness, and common-humanity; and the relative absence of self-judgment, over-identification, and isolation). The presence of self-kindness and the relative absence of over-identification counteracted the significant adverse effects of AISA on both anxiety and depression. Additionally, the relative absence of self-judgment and of isolation also counteracted against, or worked in opposition to, the adverse effect of AISA on depression. This pattern of results is consistent with the compensatory model of resilience (Fergus & Zimmerman, 2005), especially in light of the lack of significant interactive effects of SC and AISA on negative emotional outcomes – support for which would have suggested a protective model of resilience. Altogether, these results suggest that everyone, including but not limited to AISA survivors, may benefit from SC interventions given that SC is associated with decreased anxiety and depression.

Self-Criticism Facets and Negative Emotional Outcomes

The relative absence of the self-criticism facets of self-judgment, over-identification, and isolation compensated for the effect of AISA on depression. Overall these three facets of SC appear to have repetitive, negative thoughts about the self, or rumination, in common (Raes, 2010). Other work has shown that rumination mediates the association between

SC and depression after controlling for anxiety (Raes, 2010) and that increases in SC are associated with lower depression via decreases in rumination (Krieger et al., 2013). Similarly, the current results suggest that the relative absence of over-identification compensated for the adverse effect of AISA on anxiety, which may indicate the role of both worry and rumination. Worry and rumination have both been shown to mediate the association between SC and anxiety, with worry having the strongest effect (Raes, 2010). Together, the relative absence of certain lower-order negative SC facets may be associated with lower depression and anxiety via less unproductive, repetitive thought (Raes, 2010).

The relative absence of isolation counteracted the adverse effect of AISA on depression (but not anxiety). Social support is important for the well-functioning of sexual assault survivors (Borja, Callahan, & Long, 2006). Survivors of AISA may feel more loneliness and social isolation than survivors who experience non-alcohol involved sexual assault or perpetrator-drinking AISA, as AISA survivors tend to receive more negative reactions to their disclosures (Ullman & Najdowski, 2010). Additionally, given societal victim-blaming notions that survivors could have avoided sexual assault had they not been drinking, AISA survivors may be less likely to disclose their assault, further increasing isolation (Weiss, 2010). The lack of effects of isolation on anxiety indicates the compensatory effect of the relative absence of isolation is more important for depression, consistent with the well-established link of perceived isolation to depression (Matthews et al., 2016). These results highlight the potential benefits of reducing isolation for survivors of AISA which may increase feelings of social connectedness and ultimately reduce depressive affect.

Findings that the relative absence of self-judgment counteracted the effect of AISA on depression (but not anxiety) is not surprising given the conceptual links of self-judgment to self-blame and the established links of self-blame to depression (Frazier, 1991; Janoff-Bulman, 1979). Although no studies have examined this possibility, self-judgment and self-blame are conceptually related in that they both involve criticizing the self for past behaviours, thoughts, and/or emotions, and they both may lead to guilt or shame (Bensimon, 2017; Weiss, 2010). Reduced self-judgment may foster the ability of AISA survivors to absolve themselves of guilt for their traumatic experience which may in turn lessen feelings of depression.

Self-Compassion Facets and Negative Emotional Outcomes

Self-kindness compensated for the effect of AISA on both depression and anxiety, which may relate to the emotion regulatory benefits of self-kindness. The self-soothing aspect of self-kindness may provide emotional regulatory benefits for people experiencing the negative emotional outcomes of AISA. Previous studies found that SC is associated with emotion regulation (see Trompetter et al., 2017; Vettese, Dyer, Li, & Wekerle, 2011) and the link between low SC and PTSD was mediated by emotion dysregulation (Scoglio et al., 2015). Together, this suggests that rumination, worry, social isolation, self-blame, and/or emotion dysregulation may be important processes helping to explain the role of specific SC facets as compensatory resilience factors in the face of traumatic experiences such as AISA.

This study indicates that SC interventions may be a promising avenue to explore in compensating for the negative emotional consequences of AISA – as well as for students

experiencing anxiety and depression symptoms in general, given the main effects of SC domains and facets on anxiety and depression. Currently, there are various self-caring and compassion-centered interventions that have been empirically explored (see Kirby, 2017 for a review), with the most well-developed being compassion-focused therapy (Gilbert, 2014; Leaviss & Uttley, 2015). Although compassion-focused therapy includes a SC component and does increase SC in uncontrolled intervention studies (e.g., Beaumont, Irons, Rayner, & Dagnall, 2016; Gilbert & Procter, 2006), SC is not the primary focus of the therapy. In contrast, mindful SC is a therapy that specifically addresses SC (Neff & Germer, 2013). Evidence for the efficacy of mindful SC in increasing SC includes a brief three-week mindful SC intervention study with female undergraduates. Mindful SC, compared to a time-management control, resulted in higher SC immediately post-intervention (Smeets, Neff, Alberts, & Peters, 2014). Additionally, a randomized control trial (RCT) showed that an eight-week mindful SC intervention resulted in increases in SC and lower depression and anxiety six weeks later, compared to a wait-list control (Neff & Germer, 2013). Further, a randomized controlled trial of a mindful SC intervention compared to medical treatment-as-usual showed that SC increased, and depression decreased, immediately following the treatment, and these effects were maintained three months later (Friis, Johnson, Cutfield, & Consedine, 2016).

The present results must be interpreted in light of study limitations and strengths. One important limitation is that the cross-sectional design of the study precludes assessment of directionality and causality, for example whether SC precedes and contributes to reduced anxiety and depression and/or whether lower anxiety and depression precede and contribute to high SC. Longitudinal studies will be required in future to explore the directionality question. Additionally, while we tested the protective and compensatory models, other models of the relations between our study variables are possible and could be explored in future. For example, it is possible that AISA leads to low SC which in turn contributes to anxiety and depression (i.e., SC as a mediator).

Another limitation includes restricted power given the relatively low rate of AISA reported in the sample. Relatedly, another limitation was the assessment of victim-drinking AISA with a single item that did not measure assault severity. Moreover, the AISA item used wording that may have captured participants with less severe assault experiences, and/or only those who perceived drinking as a causal factor in their sexual assault. While validity of our measure is suggested through its links with depression and anxiety in this and prior research (Kehayes et al., 2019), future studies should use multi-item behaviorally-based measures of victim-drinking AISA. An additional limitation was our exclusive focus on victim-drinking AISA without comparison to perpetrator-drinking AISA or non-alcohol-involved sexual assault. However, prior research suggests that victim-drinking AISA survivors tend to experience heightened self-blame and depression (Ullman & Najdowski, 2010), making the present research particularly relevant to this group of sexual assault survivors.

Finally, our study focused exclusively on anxiety and depression as emotional outcomes of victim-drinking AISA, while survivors may display other maladaptive responses (e.g., PTSD; Ullman & Filipas, 2001; drinking to cope post-assault; Littleton et al., 2009). In addition, neither history of sexual abuse nor other traumatic events was measured and

thus their influence could not be controlled; consequently, anxiety and depression may be the result of childhood sexual abuse experiences and not the AISA given their high co-occurrence (Amado, Arce, & Herraiz, 2015). Similarly, self-esteem was not measured; however, prior research suggests that SC is related to emotional distress even after controlling for self-esteem (Neff, 2003b).

Despite these limitations, an important strength of this study is that it is the first to examine SC as a resilience factor in the association between AISA exposure and negative emotional outcomes. By suggesting the compensatory role of SC in this context, this study fills an important gap identified in the trauma literature (Zeller et al., 2015). This study identified which particular SC facets play compensatory roles in the case of the relations of AISA with both depression and anxiety, thus identifying which particular SC facets should be targeted in interventions to reduce students' experiences of anxiety and depression generally, but also for AISA victims specifically.

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"Make Resilience Matter" for Children Exposed to Intimate Partner Violence Project: Mobilizing Knowledge to Action Using a Research Contributions Framework

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Abstract:

Objective: This article describes using a Research Contribution Framework (RCF) (Morton, 2015a), to plan and document the progress of knowledge mobilization (KMb) efforts for the Make Resilience Matter (MRM) for Children Exposed to Intimate Partner Violence (IPV) study. Research uptake, use and impact activities were planned for this project designed to identify how to foster resilience-informed practice with children exposed to IPV. This KMb strategy is useful for planning and considering how we engage knowledge users, context, environmental impact, unexpected developments, and the complexities of doing research and mobilizing results in the "real world" of practice. The benefits of mapping RCF onto KMb planning and lessons learned may be transferred to other projects.

Method: First we outline RCF; second, we describe the MRM project; third we apply RCF to the MRM project detailing a process for engaging knowledge users and planning and tracking research uptake, use and impact. The trans-theoretical theory of change (Prochaska & DiClemente, 1982) is used to understand readiness to change in relation to research uptake and use. An overarching feminist theoretical understanding of gender-

based violence (Hawkesworth, 2006; Heise, 1998) helps to inform our awareness of the socio-political context.

Results: Research uptake, use, and impact as applied to the MRM project are presented. An outcomes chain (Morton, 2015a) is offered to help trace engagement/involvement, activities/outputs, awareness/reactions, knowledge/attitudes, and anticipated practice behaviour change. Four guiding principles emerged from our experience which may help to inform future KMb efforts.

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Conflict of Interest:

Authors declare no conflict of interest.

Keywords:

relationships and reciprocity; transparency; considering context in planning; and adapting to changing conditions; research contribution framework; gender-based violence; resilience

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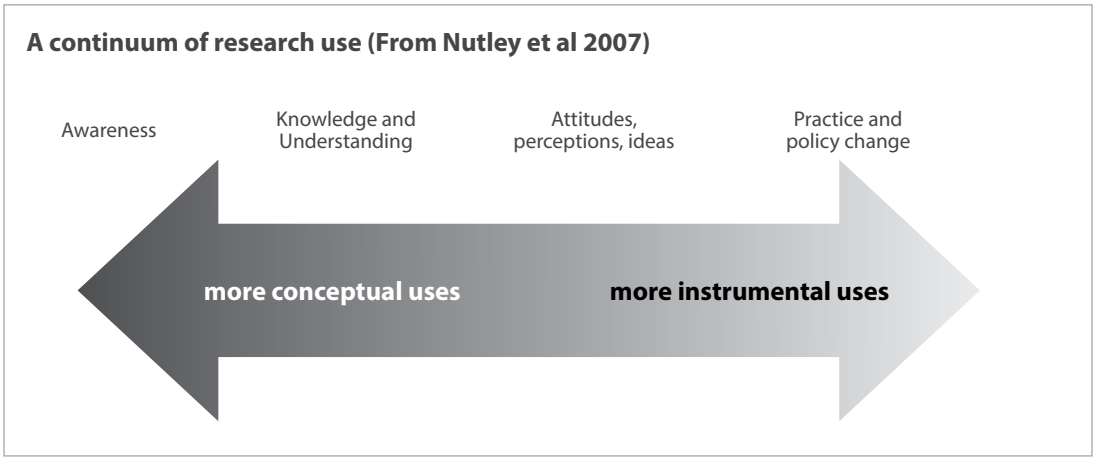
Introduction

Getting new research-based knowledge into the hands of those who need it is challenging (Nutley, Walter & Davies, 2007). Fortunately, growing interest in knowledge mobilization (KMb) over the last 15 years, has been accompanied by a growing literature. While there are many studies on the barriers and enablers of KMb (e.g. Oliver, Innvar, Lorenc, Woodman, & Thomas, 2014; Mitton, Adair, McKenzie, Patten, & Perry, 2007), less work has focused on how research knowledge gets taken up and used in policy and practice. For example, practitioners as potential knowledge users working in the helping professions face organizational and practical barriers to bringing research into practice (Williams, 2011; Gabbay & le May, 2004). They face difficulties in accessing current research as they are not typically privy to traditional academic avenues including expensive, difficult-to-locate peer-reviewed journal articles and systematic reviews. When practitioners—knowledge users from the "real world" of practice—are occasionally able to break through to consume evidence-based information, they are often met with highly technical, intellectualized language rendering the information inaccessible for translation purposes (Mitton et al., 2007). In light of this, it is not surprising to find a proliferation of websites springing up to meet the consumer need for quick and easy access to information. Often found through a simple google search, the popularity of these websites is of considerable concern because the

quality and veracity of the knowledge claims made on such sites are not subject to rigorous assessment. Further, websites are "static"—they may provide information but they do not help to address the "real world" challenges of putting that information into active use. Fittingly, research into KMb over the last fifteen years has concentrated more on the relational aspects of research use, i.e. building networks, relationships and systems that promote two-way dialogue about research and practice in order to effectively contribute to the learning needed for practice and policy change (Best & Holmes, 2010). It is through these kinds of processes that knowledge can be more effectively turned into action for policy and practice purposes (Phelps, Heidl, & Wadhwa, 2012; Meyer, 2010).

The following is a conceptual article describing how RCF was used to develop KMb activities and track the progress of the "Make Resilience Matter (MRM) for Children Exposed to Intimate Partner Violence (IPV)" project (Alaggia, Jenney, Morton, Scott & Fallon, 2014, unpublished proposal). First, we explain RCF; second, we describe the MRM project; third, we outline the RCF process as applied to the MRM project; and finally, we discuss the process of research uptake and use, examining how RCF maps onto knowledge mobilization (KMb) efforts to achieve project goals. On the continuum of research use (see Figure 1 for Nutley, Walter & Davies, 2007 Continuum), we are still largely on the conceptual end of the continuum but are certainly moving towards more instrumental uses. The means to evaluate the research impact of the MRM project are still being developed and assessed, however our experience using RCF to date may serve to help other project teams in their KMb planning.

Figure 1: Continuum of Research Use



Research Contributions Framework (RCF)

RCF (Morton, 2015a) is an empirically-based framework for research impact planning and assessment, adapted from contribution analysis (Mayne, 2008). Fundamental to RCF is the idea of using "contribution" to help explain the ways research can influence policy

and practice (Morton, 2015a). RCF incorporates an understanding of cause and effect that acknowledges the complexity of the environments in which most social actors operate (Morton, 2015a). RCF was used in the current project as a practical tool for the planning and execution of research and knowledge-exchange, including tracking and reporting on uptake and use activities. Unlike other research impact frameworks (e.g. Lavis, Robertson, Woodside, Mcleod, & Abelson, 2003; Donovan & Hanney, 2011), RCF allows for planning, monitoring and evaluation to be contained within one framework, which is empirically-constructed and complexity-informed. It is particularly well-suited to a non-health-related research impact project. Similar to Wathen, Sibbald, Jack, and MacMillan's KMb model (2011), RCF tracks research use and uptake with knowledge users in an integrative manner. However, in the RCF approach, stakeholders are included earlier in the creation of knowledge, rather than later as recipients of the dissemination of established research findings. During the MRM project, knowledge users were "invited in" to the project to raise questions and consider the implications of the early research findings for their work. In one case, the MRM researchers joined in with an agency's evaluation efforts in order to work together to achieve MRM objectives and generate results in collaboration. In this situation, agency staff became active contributors and disseminators. RCF brings knowledge users into the research process sooner to ensure findings are relevant to, and informed by, their practice.

RCF offers the following guidelines to help project teams think through how impact might occur at the various stages (Morton, 2015a) (see Diagram 1):

1. Research Uptake: Who are your stakeholders? What activities will most likely engage and involve them? Which activities will they undertake?
2. Research Use: How do stakeholders react? (immediate outcomes) What changes in skills/knowledge/understanding are needed for practice or behaviour change to happen? How does this get passed on?
3. Research Impact: What are the changes in behaviour and practices? (intermediate outcomes) What is the contribution to change? What difference does it make? (final outcomes) (see Diagram 1 next page)

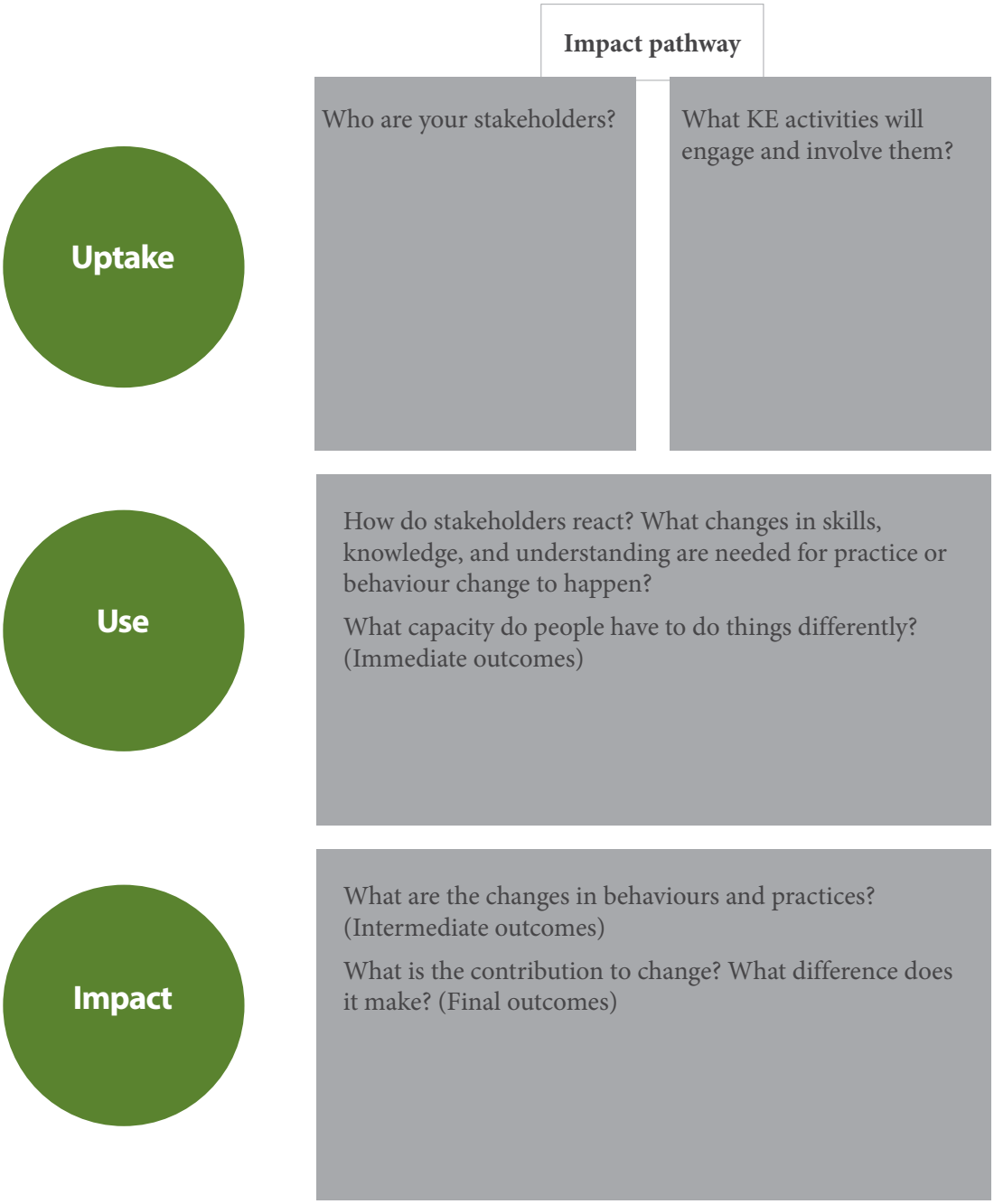
"Make Resilience Matter (MRM) for Children Exposed to IPV" Project

The MRM research project originates in a major urban centre in Ontario, Canada, where community-based children's mental health centres receive a measure of dedicated funding from the provincial government to provide programming for IPV-exposed children and their mothers.

Using mixed methods to generate relevant findings for resilience-informed interventions, we set out to enrich conceptual understanding, contribute to theory development and increase awareness of resilience factors and processes with children exposed to IPV. The research study was subjected to a rigorous ethical review and gained approval through the University of Toronto Research Ethics Board.

First, qualitative data were collected through in-depth interviewing of adult survivors who were exposed to IPV as children to uncover sources of resilience and help generate theory. This was the retrospective aspect of the study. Second, we gathered data from

Diagram 1: Research uptake, use and impact (Author, 2015)



children and youth aged six to sixteen, recently exposed to IPV, and currently receiving services from practitioners and agencies working together through a network-based service delivery model to provide specialized group-based services for children and their mothers. As well, we collected data from the mothers regarding their observations of their children and their own resilience levels. Established measures of resilience were used to help understand how these children present when they are referred to services for IPV exposure. Finally, a secondary analysis of the National Longitudinal Study of Children and Youth (NLSCY)—a Canadian dataset which includes a sub-sample of IPV-exposed children and youth—is being conducted to identify vulnerabilities and protective factors and resilience. The final results of the completed study are forthcoming but in keeping with the spirit of making research findings accessible and timely, we have been releasing early and mid-project findings to knowledge users as they have emerged.

Applying a Research Contributions Framework (RCF)

Theoretical Framework

Before delving into how we applied RCF, we describe the theoretical foundation we used to help understand complex change processes. Prochaska and DiClemente's (1982) trans-theoretical model of change was chosen to lend theoretical integrity to understanding research uptake and use by knowledge users. With RCF, attending to context is of utmost importance since it will impact the change process (Phipps & Morton, 2013). The environment in which knowledge is mobilized can greatly affect research uptake and use, ultimately affecting impact. Where an agency 'is at' as an organization, as well as the readiness of individuals working within that organizational context, are important factors to consider in terms of readiness to change (Williams, 2011). Stages of change as described by Prochaska and DiClemente (1982) include: pre-contemplation, contemplation, preparation, action, and maintenance. As we began to engage with potential knowledge actors, these stages offered a practical framework for assessing readiness.

A second theoretical premise informed our work: understanding gender-based violence through a feminist lens (Hawkesworth, 2006; Heise, 1998) sharpened our awareness of the socio-political context in which the children and their mothers are receiving services. For example, we noted that the funding and service approach being used by the government in partnership with the service network providing programs for IPV-exposed children and their mothers largely involves borrowing space from host agencies and using contract staff, paid by the hour, without benefits or job security. Some of these programs rely on local businesses and restaurants to donate food for the dinners provided to participating families. In other words, these programs operate as add-ons, funded and staffed outside the infrastructures of their host agencies.

Getting Started with RCF

From the outset, the MRM project operated on the premise that research impact is not dissemination "to" knowledge users, but rather an ongoing engagement "with" knowledge

users. Knowledge mobilization was approached as an ongoing process of assessing, planning, and reviewing, involving key actors and considering important contextual information (Morton, 2015b; Phipps & Morton, 2013). We began engaging potential knowledge users—actors—from the very beginning. We partnered with one large agency serving this population in developing the grant proposal which was then successfully funded for the four-year project. The full-time director of the agency's family violence services division, as well as university-based co-investigators and a knowledge mobilization specialist, all signed on as formal project partners.

RCF helped focus our knowledge mobilization strategy and included: developing the outcomes chain, identifying and considering risks and assumptions, conducting knowledge mobilization activities, and reviewing and reflecting as outlined in Diagram 2.

Diagram 2: Stages of the MRM Project

Develop Outcomes Chain	• Draft outcomes chain identifying how KMb activities are anticipated to help improve the lives of children living with IPV • Involve researchers, actors, research assistants

Identify Risks and Assumptions	• Identify and work through risks and assumptions underpinning the outcomes chain to test the logic:
	  • Assumptions - Research will help children exposed to IPV; actors need and will be able to make use of it
	  • Risks - Actors don't value or use the research
	• Plan key activities that will have the most impact

Conduct Activities	• Carry out activities (Research Uptake) and collect evidence from participants about what they learned and might do differently (Research Use) • Activities: Early Days Symposium in Toronto, Canada; workshop in Edinburgh, Scotland; IPV Specialist Forum; launch of www.makeresiliencematter.ca, blog and e-alert service; present paper and poster at international resilience conference; prepare several papers for publication and post on website; act on interest, invitations, new opportunities
Review and Reflect	• Review and reflect on emerging evidence (Research Impact) and tweak the strategy as needed • Contextual analysis needs to occur in ongoing manner • Involve communications advisor to mobilize knowledge in creative, accessible ways • Present project at national KMb conference for feedback and input

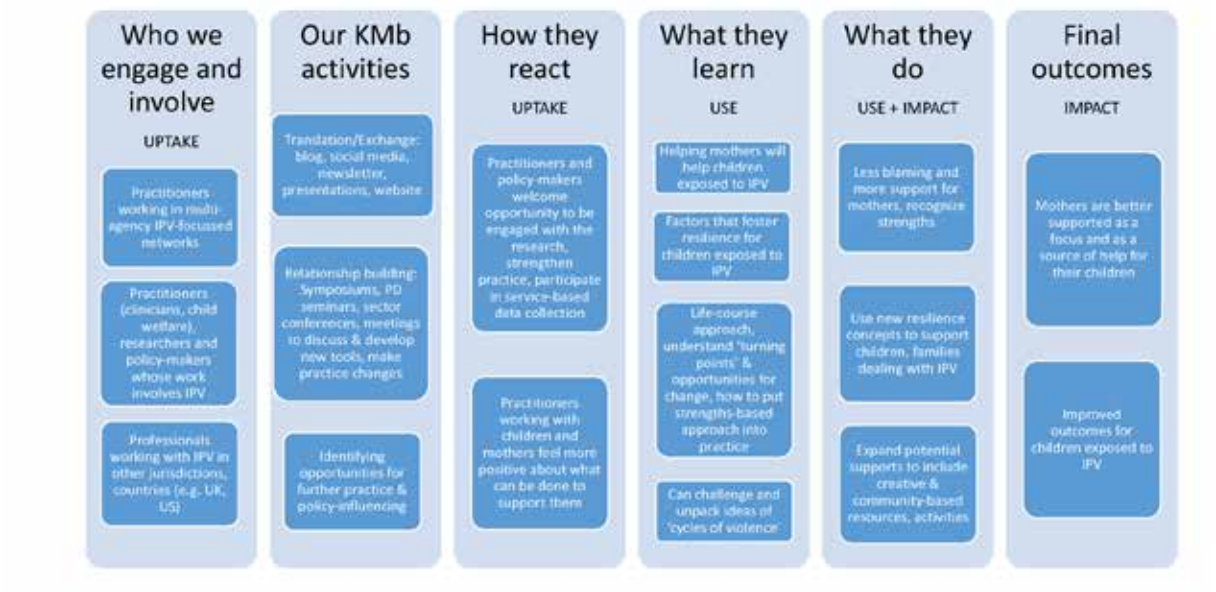
Outcomes Chain

Our outcomes chain was developed through a workshop involving the research team in the initial phase of the project, led by the knowledge mobilization specialist, and bringing together researchers and practitioner representatives (see Figure 2 Outcomes Chain). The outcomes chain separates the processes of research uptake, use and impact, into a linear format to help research teams shape a knowledge mobilization strategy and plan and review activities.

The processes of engaging participants, sharing research findings and integrating research into practice however do not occur in a linear way. Instead, the overall process

involves cycling back and forth across the chain in response to the ebb and flow of participation, and use and uptake, which happen at different times and in different ways for different participants, agencies and locations. Separating the processes helps research teams break the larger parts down into manageable and trackable steps.

Figure 2: MRM Outcomes Chain



We soon established a theory of change for the project and worked together to think about who it would be important to engage if this research was to have an impact, what they would learn and gain, and how they might act differently to improve the lives of the children and families affected by IPV. As well, we expanded the team to include communication advisors and soon began using teleconference calls, Skype and other technologies to bring people together from different sites and time-zones.

Who We Engaged and Involved

Connected through a city-wide service network focusing on violence intervention and prevention, participating agencies and service providers meet regularly to plan, organize and deliver specialized group programming to this population. The MRM research team identified this network of service providers as its primary "target audience"— more aptly described as "actors" by KMb specialists (Morton & Casey, 2017) because they will presumably act on knowledge as practitioners providing services through this network. Our goal was to directly reach practitioners directly working with IPV-exposed children and their mothers. We want to provide them with research intended to impact "user awareness," knowledge and understanding, and work with them to actively explore how the research findings could be integrated into policy and practice changes, such as those outlined by Nutley et al. (2007). The secondary actors identified included researchers, policymakers and

practitioners working in related areas (such as child welfare, child and adult mental health and justice services) –practitioners that commonly refer children and their mothers to IPV services.

Uptake, Use and Impact of the MRM project

This next section describes how we mapped out our plan for research uptake, use and impact.

Research Uptake

As discussed, we identified key stakeholders as:

- Practitioners working in a multi-agency IPV-focused service network
- Practitioners (clinicians, child welfare workers), researchers and policymakers whose work involves IPV
- Professionals working with IPV in other jurisdictions, countries

From the outset we knew that practitioners—our prospective knowledge users—typically search online for information and resources and attend conferences and workshops to gain new knowledge and skills to support their practice. Accordingly, and in keeping with the role of the principal investigator as a community convener for exploring and addressing practice issues, we decided to invite prospective knowledge users to an "Early Days" Symposium (EDS). We had several goals: provide an overview of the project; share emerging results; ask for feedback on how these results related to their work; find out how plans for the MRM web site and online materials could meet their needs; and, invite them to actively participate in subsequent knowledge mobilization activities.

At the Symposium, we used a combination of short presentations, interactive exercises, small group work and full group discussion to support participant engagement throughout the day. In addition, we had synthesized the early findings into an infographic-based Fact Sheet called "24 Ways to Resilience" (Alaggia,Vine & Rajchel, 2016) which we then distributed at the EDS (and subsequent meetings and events). After developing the MRM website, we posted the Fact Sheet there as well for wider dissemination (refer to www.makeresiliencematter.ca to view the Fact Sheet).

Holding an "Early Days" Symposium was both a conventional and novel activity. It was novel (and a risk) for the research team to publicly share early findings and ideas because this goes against common research practice, since findings are usually shared at the conclusion of projects and often upon publication. As we know, developing articles for submission to journals and proposals for conferences to reach other researchers is a more conventional pathway to mobilizing knowledge. Typically, an academic activity, reserved for the university-based researchers on the team, it was recognized early on that this form of dissemination is the least used by practitioners in agencies. And so, following the Symposium, we took a more novel approach by working with our communications advisors to take the core messages of our academic articles and develop them into plain language blogs and e-alerts for the MRM website. The website soon featured blogs, tools for practitioners such as Fact Sheets, and more

recently, Podcasts since they are currently a very popular vehicle for conveying information. The role of a communications advisor cannot be under-estimated as their expertise helps to mobilize knowledge in accessible ways. Since the launch of the MRM website, we have set up Google analytics to track not only the number of visits to the site, but also the number of downloads of materials and tools in order to learn which topics and formats are more popular.

Research Use

We identified our immediate outcomes through formal participant feedback indicating strong support for the resilience content and practice ideas offered at the "Early Days" Symposium. Sixty-four staff attended from over twenty local agencies and over ninety percent completed an evaluation feedback form (See Figure 3: Feedback Tool). Participants exhibited high energy and excitement during the day and reported that resilience offered a new and welcome lens they could incorporate into their work. They noted their focus is typically on the problems experienced by IPV-exposed children and that using the "24 Ways to Resilience" Fact Sheet as a tool could help them shift how they support clients. They also commented that resilience offers a concrete way to practice from a strengths-based foundation. Participants began to see ways to use the Fact Sheet as a tool to support mothers to help their children, too. Not only was the information valued, by the end of the day, participants were also expressing optimism about the work they are doing.

In terms of contributing to possible next steps, interest was strong. Participants expressed their desire to: actively participate in MRM research activities; receive additional training; have the team visit their practice settings to discuss how resilience concepts could be incorporated into their work; get access to a synthesized review of the literature and other materials that could be directly applied to practice; and, help develop future knowledge "products" such as providing case studies for consultations and writing blogs for the upcoming website.

In the months after the Symposium, the team followed up on the intermediate outcomes and next steps. As well as launching the website, www.makeresiliencematter.ca, we created an e-alert system to notify participants when new blog posts, reports, resources and other project updates were added. The e-alerts were designed to make it easy to forward to colleagues in order to keep expanding our reach. Indeed, case studies were provided through posts of Open Access materials (Alaggia & Donohue, 2018; Jenney et al., 2016), as well as a new feature - Podcasts.

While several agencies attending the Symposium expressed interest in becoming research sites, to date, only one additional agency has completed the process of signing on and, with the support of the research team, started to collect data from their clients. Further evidence of research use also began to emerge through requests coming into the project from people who had not attended the Symposium. For example, we were invited to a local forum to share our findings and facilitate working sessions to help almost 100 practitioner specialists in IPV integrate new knowledge on resilience factors and processes into their practice. On the heels of this, the principal investigator and KMb specialist ran a similar

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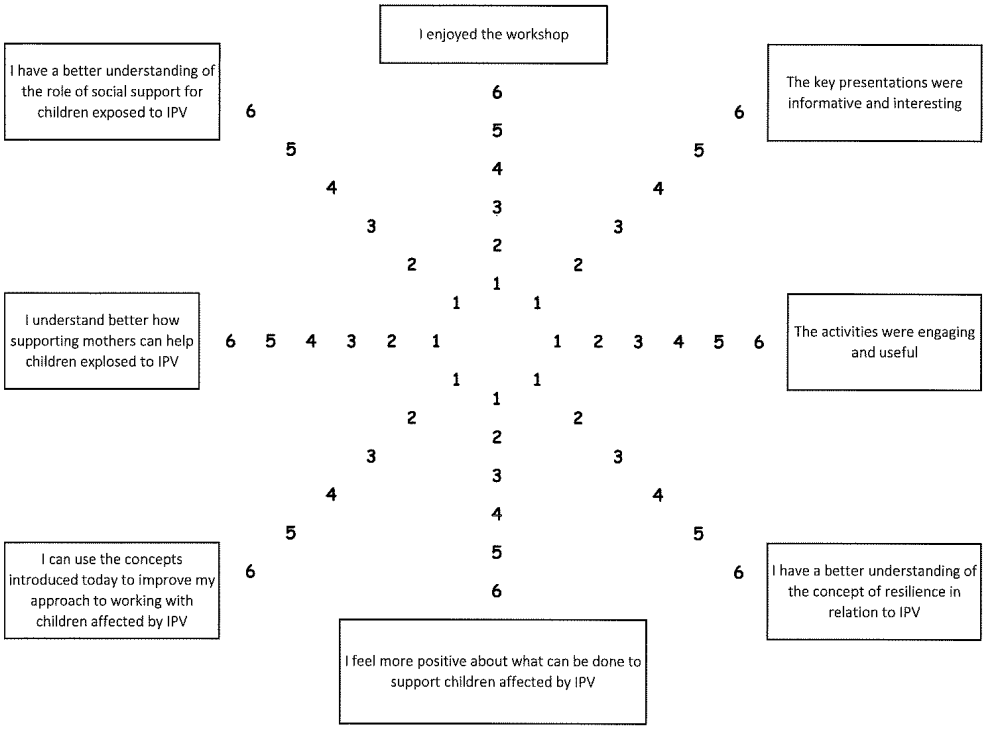
Feedback

Please rate each statement by circling the appropriate number on the scale. 1 = Strongly Disagree; 6 = Strongly Agree



1.What will you take back to your workplace/research after this workshop? _____

_____

_____

2. Will you do anything differently after this workshop? _____

_____

_____

3. What should the workshop organisers do differently next time? _____

_____

4. Can we contact you again about this work? (please leave email) _____

_____

5. Any other comments? _____

_____

_____

workshop for forty-three service providers at the Centre for Research on Families and Relationships in Edinburgh, Scotland. Since then we have had further invitations to present our work in the UK and in Ontario for practitioner and policy groups.

Research Impact

Admittedly, the greatest challenge is measuring the impact of the research itself—especially when qualitative data and processes are involved (Morton, 2015b). The project is not contained in a laboratory where unexpected environmental changes can be controlled.

While initially we experienced enthusiastic uptake and use of the new knowledge being generated by the MRM project, over the next year a slowing down occurred. Early staff and agency interest in actively participating in the project was replaced by postponements and delays largely attributed to significant staffing and service challenges. It eventually became clear to us that a number of contextual influences were at play. Fortunately, attending to contextual factors is built into the RCF approach (Morton, 2017): ongoing contextual analysis is vital to account and plan for changing conditions. This analysis is particularly helpful for planning and understanding research uptake and use and we elaborate on these issues in our Discussion section.

Now well into the life of the project, we continue to track our progress against the impact plan we set out, incorporating changes to our approach, and attending to the reactions and actions of our knowledge users as we go.

It is also important to distinguish between immediate, intermediate and final outcomes. For example, we are observing immediate and intermediate outcomes through changes in knowledge, attitudes and skills, and are seeing some early changes in behaviours and practices—at the distal level. It will be some time before evidence of higher-level impacts in terms of direct results for children and families can be observed and measured. This is consistent with other studies of research impact (Boaz, Fitzpatrick, & Shaw, 2009; Morton, 2015b), showing that impacts of research knowledge of this nature can take a long time. To this end we are devising ways to extend funding to complete the project in order to measure final outcomes. Further, we are making more consistent use of impact tools to collect feedback from the practitioners we engage with to help better track progress across our outcomes chain.

As the project moves into its fourth and final year, based on our learning to date, we are currently planning to pilot three more KMb activities: 1) with the increasing popularity of Podcasts, we will air several episodes with guest practitioners and experts on integrating resilience into research, policy and practice; 2) we are identifying senior clinicians who may be interested in working with the research team to co-create ways to apply new resilience learning to individual and group assessment and treatment scenarios; and, 3) we will hold a "Later Days" Symposium where researchers and practitioners will partner to present and discuss research findings coming out of the project and the process of implementing resilience-informed approaches into practice at the agencies. Building on the practice established at the closing of the "Early Days" Symposium, we will continue to solicit participant ideas and interest in next steps.

Discussion

Utilizing RCF has helped in the execution of our KMb activities enabling us to plan, track and identify evidence of uptake, use and a pathway to impacts. This framework has also helped us to examine and discuss some of the challenges we experienced in this process and to consider possibilities for the future.

As we encountered barriers, we circled back to our theoretical framework to explain some of the roadblocks we were experiencing and we concluded that we had not accurately assessed where the agencies and practitioners—the various actors—"were at" in terms of "readiness to change" (Prochaska, 1991; Prochaska & DiClemente, 1982). Based on their initial, enthusiastic response, we had considered the various knowledge users to be at the "action" stage when in fact they were still at the "contemplative" stage. For example, while senior management at one agency was on board for collecting resilience data from their clients, on the first evening of data collection it became clear that the group facilitators had reservations about proceeding. This came as a surprise as we had the thought the group facilitators were in full support. In light of this we took a step back and the project team planned an orientation and training session for the group facilitators in advance of the next round of data collection. In order to build trust and comfort, part of the plan included exposing the group facilitators to peers at other settings who had already been part of the research.

Beyond readiness to change issues, there were significant contextual factors at play that we had underestimated. The service arena in this jurisdiction is actively undergoing a "reform" and "transformation" process to streamline and increase cost-efficiency. This has involved the government reallocating funding and consequently raising concerns about budget and service cuts across the children's mental health system as a whole—involving over 30 local agencies. Many of these agencies are involved in either referring or providing services to IPV-exposed children and their mothers.

Further, the particular structure of the service network for IPV-exposed children and their mothers is largely reliant on contractual agreements for hiring program staff/group facilitators. We learned these circumstances had ripple effects before and after the "Early Days" Symposium. Some of the staff who attended, for example, now no longer worked for the participating agencies, thus reducing the number of resilience-informed practitioners. Conversely, there were staff who had wanted to attend but were unable to for a number of reasons: they would not be paid for the hours spent at the Symposium and/or they held positions in other organizations (to supplement their contractual work) and could not be released from their "day jobs" to attend. We had not anticipated that these precarious employment arrangements would have an impact on the extent to which new research findings could ultimately find their way into practice. In light of these realities, we continue to proceed but have extended our timelines to include a longer engagement period with interested agencies and we have developed the means to support agency participation by subsidizing the time required to orient and train staff in data collection for the research. Throughout, we acquired a deeper appreciation for the role of contextual factors, the need for thorough and ongoing contextual analysis, and the value of cycling back and forth among

KMb processes.

From the inception of the "Make Resilience Matter" project we were committed to using RCF as an innovative framework for knowledge mobilization. Embedded in the proposal for funding we suggested using the RCF to guide the project, and once funding was secured, we carved out a staged process that was reviewed and tweaked over four years of data collection, analysis and dissemination. Over this time, we learned a great deal with four main guiding principles emerging: relationships and reciprocity; transparency; considering context in planning; and adapting to changing conditions.

Using RCF comes with its challenges and yet it also helped us to avoid certain pitfalls. Rolling out the RCF takes time and slows down the typically unchallenged cycle of knowledge products being "pushed out" to knowledge users, who may not have access or may not be able to make use of it. RCF depends on relationships—new relationships need to be built and established relationships should be drawn upon, all of which take planning and follow through. It is also important to note that it is much easier to focus on creating "products" than it is to take a disciplined approach to attending to the needs of knowledge users and the context in which they operate. "No product without a strategy" became our refrain. All relationships, including reciprocal ones—take time. However, the focus on reciprocal relationships with research and community partners is well worth the investment as this offers possibilities for increasing the effectiveness of KMb. In other words, when we co-create, the knowledge generated is more likely to be grounded in the knowledge users' context and therefore much more likely to be acted on. Ultimately research impact is not about dissemination "to" knowledge users, but rather ongoing engagement "with" knowledge users. Our view is reflected in the findings of others (Morton, Wilson, Wales, Ritchie, & Inglis, 2018; Morton & Casey, 2017), where setting out to make a difference and taking time to build relationships have been essential to success.

Transparency is a key method of keeping the power balances in check between the researchers and agency partners involved in the process. During in-depth conversations with agency partners we were surprised to find out that many believed that researchers profited monetarily from publications, not realizing that in fact authors sign over their work creations to journals through copyright agreements that include no fiscal payout. In turn, the research team learned that data collection sessions cost agencies money as they sometimes need to run an extra group session to make up for lost time with clients. In this instance, we were able to subsidize costs, wherein agencies could invoice the project for training and research-related activities.

Understanding context and conducting a contextual analysis is a cornerstone of RCF. In this project, context in the helping professional/social services sphere was fraught with resource issues at every process point. Researchers may anticipate that constrained resources will hamper research output and may back off and look for other ways to gather data that are not dependent on fiscally-depleted agencies. However, our experience has taught us that if these are the practice and service delivery circumstances, then this is the very context that is affecting research uptake, use and impact. As well, issues of control can arise as to who owns the data and who potentially profits by these arrangements and in what ways. As

mentioned, exchanging information regarding the contextual realities of both researchers and practitioners led to discussions of how each context affected the research and KMb process, and thus potential roadblocks can be identified and remedied at each stage.

When it comes to knowledge mobilization, there is no one way to proceed. No matter how well intended the plans, they are always subject to changing conditions and therefore flexibility, creativity and adaptation are needed. This is not to suggest that research projects should forge ahead rudderless, with no clear direction. In fact, RCF helps researchers plan for, monitor, and address these situations. While this may appear to be common sense, at times investigators back away from problematic aspects of projects in favour of a simpler, more easily measured path, thus potentially alienating agency partners and producing less relevant practice findings. While our focus has been on using RCF to foster resilience-informed practice with children exposed to IPV, our experience is similar to others using RCF in healthcare (Morton et al., 2018) and in international development (Morton & Casey, 2017).

Conclusion

Throughout the MRM project we have taken an approach to KMb that aims to systematize the process of moving new knowledge into active use—knowledge to action. Using RCF, with relevant theories to understand our target research audience, is proving to be a helpful approach as we see evidence of research uptake and use, with immediate and intermediate outcomes. Given the host of issues and challenges that researchers and knowledge users face, especially given their contextual realities, it is all the more important to support KMb activities with a framework that helps to demystify and untangle the steps and processes. Further, recognizing and engaging stakeholders as participating "actors" as opposed to passive "recipients" of research helps us shift from disseminating "to" to ultimately co-creating "with."

Admittedly the project is not finished, so we have not yet met our final outcomes, in terms of our impact plan. This is primarily because the length of the project was under-estimated for reasons mentioned in the discussion section. It has taken considerable time to build and support the team, to thoroughly engage with our partners and knowledge users, to meet and dialogue about the issues, and to identify and creatively address the barriers and contextual challenges when engaged in KMb with the "real world." Given that this is an iterative and unpredictable process, we cannot expect to control or predict when, where and how knowledge will be taken up—despite our best efforts. We have continued to meet for planning and presented our emergent findings in Toronto and Ottawa, Canada, the UK and US through over a dozen presentations and workshops. Throughout, we also worked with the goal of making access barrier free—professional development forums and workshops have been provided free of charge and information has been created with the end-user in mind, often with their participation and direction about what would be most helpful to them.

By using RCF to steer our KMb efforts, we have gained tremendous understanding and insight into the KMb terrain. We have also seen agency staff take up and lead the charge of integrating resilience into their practice with children exposed to intimate partner violence.

All of this leads us to continue to use RCF to ground and guide our KMb efforts for the duration of the project, and beyond.

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