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

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### Article 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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## 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

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## **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 Hébert, 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
<b>Age</b>		15.85	13.67	17.98	0.11
<b>Gender</b>					
Girls	57.9%				
Boys	42.1%				
<b>Family Structure</b>					
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%				
<b>Cultural or ethnic origin</b>					
Quebecers or Canadians	78.0%				
Other cultural or ethnic groups	21.6%				
<b>Education</b>					
<i>Mother</i>					
High school or less	25.2%				
More than high school	60.9%				
<i>Father</i>					
High school or less	29.6%				
More than high school	51.5%				
<b>Occupational status</b>					
<i>Mother</i>					
Work	82.2%				
Does not work	15.6%				
<i>Father</i>					
Work	85.5%				
Does not work	8.9%				
<b>Religion</b>					
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  $\alpha = .62$ ), which is lower than the original study (Cronbach  $\alpha = .79-.82$ ; 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  $\alpha = .88$  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  $\alpha = .69$ ) as found in other studies (Cronbach  $\alpha = .79$ ; 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 multicollinearity ( $VIF = 53.51$ ), 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

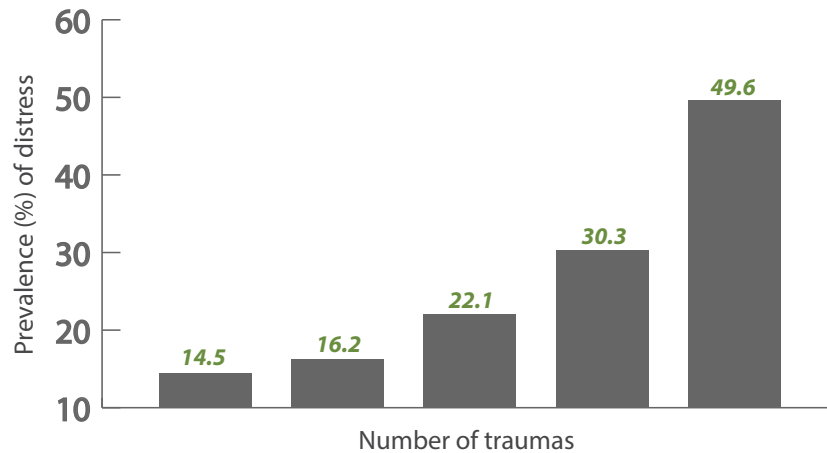
Traumas and adverse life events	Prevalence Rate
Regulatory strenths	
Problem-focused coping	52.0%
Academic achievement	55.5%
Self-esteem	55.9%
Resiliency	58.2%
Meaning-making strength	
Optimist	43.4%
Interpersonal strengths	
Social support (seeks secure base)	45.1%
Social support (number of sources of 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 Strengths of Youth in Québec, Canada

esteem ( $\beta = 0.789$ ;  $p < .001$ ), having resiliency skills ( $\beta = 0.593$ ;  $p < .001$ ), and perception of school success ( $\beta = 0.123$ ;  $p < .05$ ) were positively associated with low psychological distress. As for the three optimism indicators, anticipating the future with enthusiasm/hope ( $\beta = 0.300$ ;  $p < .001$ ) and not seeing the future as vague and uncertain ( $\beta = 0.283$ ;  $p < .001$ ) 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 ( $\beta = -0.340$ ;  $p < .001$ ). 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	$\beta$ (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***		

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

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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