



## Factors favoring psychological resilience among fostered young people

Louise Legault <sup>a,\*</sup>, Michelle Anawati <sup>b</sup>, Robert Flynn <sup>c</sup>

<sup>a</sup> *GAP-Santé, Institute of Population Health, University of Ottawa, 1 Stewart, room 312, Ottawa, ON, Canada K1N 6N5*

<sup>b</sup> *École de service social, University of Ottawa, Canada*

<sup>c</sup> *Centre for Research on Community Services, University of Ottawa, Canada*

Received 18 July 2005; received in revised form 25 September 2005; accepted 14 October 2005

Available online 27 December 2005

---

### Abstract

Few studies have examined factors in an out-of-home care sample and explicitly tested these in a predictive model. The purpose of our study was to build an exploratory predictive model of psychological adjustment, defined in terms of anxiety and physical aggression. Participants comprised 220 young people, aged 14 to 17, residing in Ontario, Canada. Selected predictors consisted of the factors most commonly thought to favor positive psychological adjustment among young people. A series of hierarchical multiple regressions were conducted to test predictive models of psychological adjustment. The findings revealed a significant association between lower levels of anxiety and higher-quality relationships with the female caregiver, a greater number of close friendships, and higher self-esteem. Less frequent physically aggressive behaviors were associated with a smaller number of primary caregivers, higher-quality relationships with the female caregiver, a greater number of close friendships, higher self-esteem, greater use of approach coping strategies, and less frequent use of avoidant coping strategies. The theoretical and practical implications of these findings are discussed.

© 2005 Elsevier Ltd. All rights reserved.

*Keywords:* Resilience (psychological); Foster children; Out-of-home care; Emotional adjustment; Behavior problems

---

### 1. Introduction

Over the past 30 years, research on resilience has endeavored to tease apart the interplay of factors contributing to positive psychological adjustment among at-risk populations of young people. Traditionally, researchers have focused on two essential components of psychological adaptation among adolescents, namely internalizing and externalizing behaviors (Compas,

---

\* Corresponding author. Tel.: +1 613 562 5800x2625; fax: +1 613 562 5147.

E-mail address: [Louise.Legault@uottawa.ca](mailto:Louise.Legault@uottawa.ca) (L. Legault).

Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Compas, Howell, Pares, Williams, & Guinta, 1989). Internalizing behaviors are often described in terms of anxiety, while externalizing behaviors are described in terms of physical aggression (Fields & Prinz, 1997). Both beneficial and detrimental factors have been investigated, ranging from the contextual (community, interpersonal) to the person level. In the process, researchers have come to identify a set of protective factors that serve to buffer or diminish the effects of risk factors (e.g., poverty) on young people's ability to adapt. Interestingly, these same protective factors have been found to also play a central role in young people's well-being and development in general (i.e., under low adversity conditions; Masten & Reed, 2002).

These factors are of particular interest for the fostered population. Young people who have survived various types of neglect and abuse during childhood are at increased risk of psychological maladjustment (Compas et al., 1989) and the development of psychological difficulties in adulthood (Lynskey & Fergusson, 1997). Indeed, recent study findings show that young people's self-rated levels of anxiety and emotional distress are higher than those of the general Canadian population (Flynn & Biro, 1998; Flynn, Ghazal, Legault, Vandermeulen, & Petrick, 2004). While caregivers have rated young people in foster care as being more physically aggressive (Heflinger, Simpkins, & Combs-Orne, 2000; Marcus, 1991). These results are consistent with other findings among children in-care from England (Ward, 1995) and Canada (Stein, Evans, Mazumdar, & Rae-Grant, 1996).

Despite the compelling evidence of maladaptation, a few studies have shown that a fair percentage of fostered young people demonstrate good psychological adjustment and positive outcomes in some life domains (Flynn & Biro, 1998; Flynn, Ghazal, Legault, Vandermeulen et al., 2004). For example, Flynn and Legault (2003, Flynn, Ghazal, Legault, Vandermeulen et al., 2004) observed that 10–15 year olds in-care were essentially no different from their peers in the general Canadian population in regard to health, self-esteem, current happiness, hope for the future, pro-social behavior, and high-quality friendships. On the other hand, they also found that fostered young people fared more poorly in terms of educational performance and anxiety/emotional distress compared to their peers in the general population. These studies and others (e.g., Kufeldt, Simard, & Vachon, 2000; Stein et al., 1996; Ward, 1995) provide a more balanced profile of young people in-care, one which includes adequate psychological adjustment and positive outcomes in some areas, and poor functioning in other areas.

The study of positive adjustment despite multiple serious adverse life circumstances has been the hallmark of resilience research. Defined from a developmental perspective, resilient or positive adaptation implies meeting age-salient developmental tasks in spite of serious threats to development (Masten & Reed, 2002). In reviewing the child welfare and resilience literature, we identified four main clusters of factors that were particularly interesting to explore in a foster care population: (a) descriptive factors, such as gender, age, and number of primary caregivers; (b) past contextual risk factors; (c) currently occurring interpersonal factors, such as parenting style and quality of the relationship with the female caregiver or with friends; and (d) person factors, such as coping strategies and perceived general self-esteem. We begin by briefly reviewing the extant research on factors most commonly thought to contribute to positive psychological adjustment in young people.

### *1.1. Descriptive factors*

Gender and age differences have traditionally been associated with differential psychological adjustment. Broadly speaking, research has found that girls are more anxious than boys and engage

in more social relationships in an attempt to deal with their anxiety (Myers, 2001). Physical aggression in young people has also been studied extensively (Coie & Dodge, 1998; Loeber & Farrington, 1998), with boys tending to be more physically aggressive than girls (Griffin, Scheier, Botvin, Diaz, & Miller, 1999). As for placement stability, the number of caregivers while in-care has been associated with differences in levels of anxiety and physical aggression, with a greater number of caregivers associated with increased psychological maladjustment (Rubin et al., 2004). While gender, age, and stability of placement are conceptually interesting, the main purpose of this study was to investigate other predictive factors of psychological adjustment for which empirical evidence has not been as firmly established.

### *1.2. Contextual risk factors*

Numerous studies have examined the effects of life events as risk factors relative to psychological adjustment in the general population (e.g., Adams & Adams, 1991; Pine, Cohen, Johnson & Brook, 2002). By and large, research findings indicate that the accumulation by an individual of a large number of negative life events is associated with an increased risk of maladjustment (Bolger & Patterson, 2003). In an in-care population, this accumulation of risk factors often translates itself into a higher frequency of maladaptive behaviors and thus poorer psychological adaptation. Fostered young people, for example, often experience poor quality relationships, use ineffective coping strategies, or abuse drugs and alcohol (e.g., Adams & Adams, 1991; Pine et al., 2002).

### *1.3. Interpersonal factors*

Past research findings consistently show that authoritative parenting and the presence of a caring adult are protective factors that promote adaptation under adverse life circumstances and, with the return of good environmental conditions, continue to enhance young people's positive adaptation (Griffin et al., 1999; Lynskey & Fergusson, 1997; Sabatelli & Anderson, 1991). Theoretically, parents or substitute parents are viewed as a conduit through which the negative effect of environmental stressors, such as poverty, on young people's adjustment is either attenuated or exacerbated (Bolger & Patterson, 2003). Regarding friendships, study findings indicate that positive friendships may contribute to buffer or diminish the effects of cumulative risks on outcomes (Griffin et al., 1999; Lynskey & Fergusson, 1997; Masten & Reed, 2002; Sabatelli & Anderson, 1991). Overall, within an in-care population, the parenting system is the main one disturbed both before and sometimes after the youth comes into care (Bolger & Patterson, 2003), thereby rendering him or her particularly vulnerable to maladjustment. Heightened vulnerability may also be experienced when friendship ties are severed following a move to a new placement.

### *1.4. Person factors*

Studies of adolescent coping responses have found approach coping (i.e., cognitive and emotional activity oriented towards the threat or stressor) to be predictive of lower externalizing and internalizing problems and to be positively correlated with better functioning and adaptation (Compas, Malcarne, & Fondacaro, 1988). In contrast, the use of avoidant coping strategies (i.e., cognitive and emotional activity oriented away from the threat or stressor) has been associated with an increased risk of later negative health outcomes.

High self-esteem has been identified as a prominent protective resource that young people can use against daily negative life events (Dumont & Provost, 1999) and, by extension, against adverse life events to reduce their effect as risk factors. High self-esteem has thus been related to lower anxiety levels (Byrne, 2000; Seiffge-Krenke, 1995). This finding was particularly important given that highly anxious young people are more likely to engage in problematic behaviors, such as acting out aggressively. They are also generally disliked by their peers, have poorer self-concepts, as well as lower school achievement and aptitude, compared with less anxious and aggressive adolescents (Byrne, 2000). In addition to its relationship with diminished anxiety, high self-esteem has been associated with the use of successful coping strategies (Seiffge-Krenke, 1995). Individuals with high self-esteem are more likely to engage in problem-focused approach coping strategies, whereas individuals with low self-esteem are more likely to adopt emotion-focused avoidant coping strategies (Thoits, 1995).

### *1.5. Objectives of the study*

Our literature review uncovered a limited amount of research examining psychological adjustment in young people placed in out-of-home care, and we found no well-recognized model of the major predictors associated with psychological adjustment. The purpose of this study was thus to build an exploratory predictive model of psychological adjustment for young people in out-of-home care. Psychological adjustment was defined in terms of internalizing and externalizing behaviors. The model included many of the key factors identified in the child welfare and resilience literature associated with better psychological adjustment among young people. In line with past research, we hypothesized that young people in-care would report lower levels of anxiety and physical aggression when: (1) they experienced a lower number of negative life events; (2) their foster parents reported more frequent use of nurturant parenting techniques (a key component of authoritative parenting); (3) they reported a more positive relationship with the female caregiver; (4) they had a greater number of high-quality friendships; (5) they had a higher level of general self-esteem; and (6) they used approach coping strategies more frequently and avoidant coping strategies less frequently. In line with past findings, we further hypothesized that the effects of cumulative risk on anxiety and on physical aggression would be moderated (i.e., buffered) by a nurturant style of parenting, a more positive relationship with the female caregiver, higher-quality friendships, better general self-esteem, more frequent use of approach coping strategies, and less frequent use of avoiding coping strategies. The tested models first controlled for gender, age, and the number of primary caregivers.

## **2. Method**

### *2.1. Participants*

In partnership with the Ontario Association of Children's Aid Society, voluntary participation in a longitudinal study was solicited from local Children's Aid Societies (CASs), child welfare workers, and children and youths in-care. CASs are legally responsible in the province of Ontario for the health and well-being of children and young people in out-of-home care. A total of 26 CASs agreed to fully or partially implement *Looking After Children* (LAC) (described in the next section). In all, 839 children and young people aged 0–21 participated in the second year of a 3-year longitudinal study of the implementation and outcomes of LAC (Flynn, Angus, Aubry, & Drolet, 1999). Our sample was drawn from year two participants. The respondents

retained in our study met the following inclusion criteria: (1) aged 14 to 17; (2) residing in out-of-home care; and (3) complete responses to items included in the analyses. The final sample consisted of 110 males and 110 females with a mean age of 15.3 years (S.D.=1.1).

Young people entered care because of caregiver incapacity (28%), physical/sexual harm (25%), abandonment or separation (17%), harm by omission (13%), emotional harm (5%), or other reasons (12%). When asked to identify past negative life events, young people reported on average 6 events in addition to coming into care (mean=6.1, S.D.=3.5, range=0 to 15; e.g., death of a parent, poverty). Most of the young people lived in foster homes (80%), with a smaller proportion living either in group homes (12%) or other types of placements (8%). Because of the abuse or neglect suffered in their families of origin, legal custody of young people had been transferred to their local Children's Aid Society either permanently (88%) or temporarily (4%). Many of the young people had been in care for a considerable length of time (mean=6.1 years, S.D.=4.0; range=1 to 16) and during their lifetime, had had about 6 different adult caregiver (mean=5.9, S.D.=3.6, range=2 to 24).

## 2.2. *The Looking After Children approach*

Conceptualized in the U.K. (Ward, 1995), the *Looking After Children (LAC)*<sup>1</sup> philosophy moves away from the traditional goal of reducing harm to a more pro-active focus on maximizing positive outcomes via on-going assessment of children's needs, improved timeliness of the services received, as well as documenting positive gains and accomplishments. The approach is based on a developmental model comprising seven dimensions: health, education, identity, family and social relationships, social presentation, emotional and behavioural development, and self-care. The main LAC tool, the Assessment and Action Record (AAR), has been designed to assess the seven developmental dimensions. The AAR is a structured interview to be completed within the context of a conversation between the child welfare worker, the foster parent, and the young person in care. AARs exist for the full range of age groups, from infants through young adults. Child welfare workers are encouraged to complete all AAR questions, except when a respondent refuses to answer an item or is evidently ill at ease to respond. While completion occurs in the presence of several persons, the answer recorded in the AAR is the one provided by the person to whom the question is primarily addressed. The collected data, therefore, are uniform across child welfare cases in terms of the sources of information for the various answers provided.

The AARs were adapted to the Canadian context most recently by Flynn, Ghazal, and Legault (2004). This second Canadian adaptation (AAR-C2), used in our study, retains the structured interview format and many of the monitoring questions comprised in the original British AARs while also incorporating many validated measures from the National Longitudinal Study on Children and Youth (NLSCY) (Statistics Canada and Human Resources Development Canada, 1998–1999). This strategy allows us to interpret the findings from our Canadian LAC research from within the broader framework of the NLSCY, which has become the standard source of information on the long-term physical, social and psychological development of Canadian young people from childhood into young adulthood.<sup>2</sup> Used on a yearly basis, the AAR-C2

<sup>1</sup> See Flynn and Byrne (2005) and Legault et al. (2004) for a complete description of the project.

<sup>2</sup> Further information on the NLSCY may be obtained on the Statistic Canada website, [http://www.statcan.ca/english/rdc/nlscy\\_cycle3.htm](http://www.statcan.ca/english/rdc/nlscy_cycle3.htm).

fulfills several purposes at the clinical level (e.g., improving the quality of children's assessments, case records, plans of care, and reviews; monitoring children's developmental progress) and the managerial level (e.g., improving service delivery; informing agency, local, and provincial policymakers) as well as enabling applied research to take place (i.e., obtaining knowledge of positive developmental outcomes and their correlates).

### 2.3. Procedure

Participation in the 3-year longitudinal study was voluntary, with some agencies opting for full implementation and others choosing partial implementation of the *Looking After Children* initiative. In all agencies, use of the Assessment and Action Records (AAR-C2; Flynn et al., 2004) was voluntary for both child welfare workers and young people. The voluntary nature of the recruitment process thus meant that our study included a convenience sample of young people who had been placed in out-of-home care as a result of serious adversity in their families of origin (e.g., parental incapacity).

Data were collected during 2002–2003, which was the second year of the 3-year study. Administering the AAR-C2 took anywhere from 1 to 4 sessions and required an average (mean) of 4 h to complete (S.D.=1.8). Sessions took place in a variety of comfortable environments, including foster homes, restaurants, etc. Anonymity was assured by the child welfare worker who removed all identifying information before sending a copy of the completed AAR-C2 to the University of Ottawa research team. The larger project, of which this study was a part, had received approval from the University of Ottawa Research Ethics Committee.

### 2.4. Measures

#### 2.4.1. Outcome measures

**Anxiety** and **physical aggression** were the two outcomes investigated. Both scales originated from the NLSCY-Cycle 3 (1998–1999). The anxiety scale consisted of 8 questions measuring the young person's level of anxiety and emotional distress (e.g., "I am not as happy as other people my age";  $\alpha = .86$ ). The physical aggression scale comprised 6 questions measuring a young person's frequency of engaging in aggressive behaviors (e.g., "I get into many fights";  $\alpha = .84$ ). Fostered young people answered questions for both outcome measures on a 3-point Likert scale ranging from "Never or not true" to "Often or very true".

#### 2.4.2. Contextual risk factors

**A cumulative risk index** was compiled from a list of 18 adverse life events, such as birth parent death, serious physical illness of the birth mother, neglect, etc. The checklist was inspired by the work of Adams and Adams (1991), Dende and Plomin (1991), and Monaghan, Robinson, and Dodge (1979). The respondents (i.e., caregivers, child welfare worker, or fostered young person) checked all the life events experienced by the young person since birth. An index was generated by summing lifetime adverse events, providing an estimate of the total number of risk factors experienced by the fostered young person.

#### 2.4.3. Interpersonal factors

Nurturant parenting style (a key component of authoritative parenting), relationship with the female caregiver, and friendship quality were the three interpersonal factors studied. The **nurturant parenting scale** (NLSCY-Cycle 3, 1998–1999) was a 7-item measure of parenting

techniques (e.g., “How often do you listen to the young person’s ideas and opinions?”;  $\alpha = .78$ ). The foster parent answered on a 5-point Likert scale ranging from “Never” to “Always”. **The relationship with the female caregiver scale** (NLSCY-Cycle 3, 1998–1999) comprised 4 items measuring the quality of the young person’s relationship with the female caregiver (e.g., “How well do you feel that your foster mother [or other female caregiver] understands you?”;  $\alpha = .80$ ). The fostered young person answered on a 3-point Likert scale ranging from “Very little” to “A great deal”. **The Marsh friendship scale** (Marsh & O’Neill, 1984; NLSCY-Cycle 3, 1998–1999) comprised 4 questions assessing how well the young person felt s/he got along with his/her peers (e.g., “I have many friends”;  $\alpha = .87$ ). The fostered young person answered on a 5-point Likert scale ranging from “False” to “True”.

#### 2.4.4. *Person factors*

General self-esteem and coping strategies were the person-level factors studied. **The general self-esteem scale** (NLSCY-Cycle 3, 1998–1999) comprised 4 questions measuring the young person’s overall sense of self (e.g., “In general, I like the way I am”;  $\alpha = .83$ ). Fostered young people answered on a 5-point Likert scale, ranging from “False” to “True”. A **coping scale** was developed specifically for the study by Flynn and Legault (2002). Based on the conceptual work of Ayers, Sandler, West, and Roosa (1996), two subscales were generated assessing the use of approach and avoidant coping strategies. Approach coping described more active and problem-focused strategies whereas avoidant coping characterized more passive or avoidance-of-problems strategies.

Exploratory factor analyses were first conducted on this newly developed coping scale with maximum likelihood estimation and oblique rotation. Bentler and Wu (1995) recommend eliminating items with factor loadings less than .50 as a way to ensure that the factorial structure will replicate across samples. Once items with low factor loadings or cross-loadings were removed, the final solution yielded a clear two-factor structure representing approach coping and avoidant coping. The final approach coping subscale consisted of eight items (e.g., “I think of different ways of solving my problem”;  $\alpha = .86$ ). The final avoidant coping subscale comprised eight items (e.g., “I wish that my problem would go away”;  $\alpha = .73$ ). Fostered young people answered items on a 4-point Likert type scale, ranging from “Never” to “Most of the time”.

#### 2.4.5. *Descriptive factors*

A profile of the young people in-care was obtained from questions on gender, age, reason for coming into care, type of placement, length of stay in current placement, and number of primary caregivers.

#### 2.5. *Analytical strategy*

The hypotheses were tested using a 5-step hierarchical regression model to statistically predict anxiety and physical aggression. In step 1, we controlled for the effects of gender, age, and number of primary caregivers on the outcome variable. The predictors of interest were then entered into the regression equation from the contextual to the person level. In step 2, the cumulative risk index, temporally the most distal predictor, was entered, followed in step 3 by the comparatively more proximal interpersonal factors (nurturant parenting by the substitute caregiver, young person’s relationships with the female caregiver and quality friendships). In step 4, the person factors of general self-esteem, approach coping, and avoidant coping were

Table 1  
Correlations, means, and standard deviations of all variables ( $N=220$ )

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Child's gender (1=M, 2=F)	–	.04	–.02	.09	.16**	.11	–.03	–.14*	.11	–.11	.17*	–.12
2. Child's age		–	–.16**	.01	.09	.01	–.02	.03	.23***	.06	–.01	–.05
3. Number of caregivers			–	.15	–.02	.02	–.02	–.03	–.12	–.18**	.08	.15*
4. Cumulative risk				–	–.04	.02	–.07	–.12	.10	–.06	.16**	.06
5. Nurturant parenting					–	.29***	.20***	.20***	.17**	.12	–.07	–.17**
6. Relationship with female caregiver						–	.13	.24***	.16**	.14**	–.22***	–.20***
7. Relationship with friends							–	.34***	.29***	.27***	–.38***	–.28***
8. General self-esteem								–	.24***	.21***	–.51***	–.28***
9. Approach coping									–	.51***	–.12	–.22***
10. Avoidance coping										–	–.11	.02
11. Anxiety											–	.39***
12. Aggression												–
Mean or %	50%	15.30	5.94	6.13	29.9	10.60	15.98	16.69	28.58	19.79	12.66	7.96
S.D.		1.0	3.6	3.5	3.0	1.7	3.3	2.9	6.1	4.5	3.5	2.24

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

entered. In step 5, multiplicative terms were entered. These had been created by multiplying the cumulative risk index by each of the contextual, interpersonal, and person factors.<sup>3</sup>

### 3. Results

#### 3.1. Descriptive analyses

Prior to analysis, data were examined for accuracy of data entry, missing values, and fit between their distributions and the assumptions of multivariate analysis. All variables were normally distributed, and no outliers were identified. We then examined the pattern of association between the predictive and outcomes factors. Table 1 displays the correlations, means, and standard deviations of the variables in the models. There were significant correlations between **anxiety** and gender, cumulative risk, perceived relationship with the female caregiver, perceived relationship with friends, and general self-esteem. **Physical aggression** was significantly correlated with number of primary caregivers, use of nurturant

<sup>3</sup> The multiplicative terms were computed from centered scores of their component variables to avoid problems of multicollinearity arising from correlations between product terms and their component parts (Cohen, Cohen, West, & Aiken, 2003). The interactions were tested one at a time to preserve power, with Bonferonni's adjustment set at  $p < .008$  to protect against spuriously significant findings.



parenting by the foster parent, perceived relationship with the female caregiver, perceived relationship with friends, general self-esteem, use of approach coping strategies and anxiety.

### 3.2. Hierarchical regression analyses

#### 3.2.1. Anxiety model

Table 2 displays the hierarchical regression results at each step for anxiety with the standardized beta weights as well as the cumulative  $R^2$ ,  $R^2$  change at each step, and cumulative adjusted  $R^2$ . Results for the anxiety model showed significant incremental increases in explained variance at step 1 (gender, age, and number of caregivers), step 2 (cumulative risk index), step 3 (interpersonal variables), and at step 4 (person variables). In step 5 (data not shown), none of the interaction terms were significant. Examination of individual variables in step 4 of the regression revealed that anxiety was significantly predicted by the young person's perceived relationship with the female caregiver, the young person's perceived relationship with his or her friends, and the young person's general self-esteem. The final model explained 35% of the variance in anxiety [ $F(10,209)=11.110$ ,  $p<.001$ ;  $R^2$  adjusted=.32].

#### 3.2.2. Physical aggression model

Table 2 also displays the hierarchical regression results for physical aggression. Results showed significant incremental increases in the explained variance in step 1 (gender, age, and number of caregivers), step 3 (interpersonal variables), and step 4 (person variables). Step 2 (cumulative risk index) did not produce a significant increment and in step 5 (data not shown), none of the interaction terms tested were significant. Examination of the individual variables in

Table 2  
Results of hierarchical regression analysis for fostered young people's psychological adjustment ( $N=220$ )

Predictor	ANXIETY				AGGRESSION			
	Step 1	Step 2	Step 3	Step 4	Step 1	Step 2	Step 3	Step 4
Child's gender (1=M; 2=F)	.17**	.16**	.17**	.11	-.11	-.11	-.10	-.08
Child's age	.00	-.00	-.01	-.00	-.02	-.03	-.02	.01
No. of caregivers	.08	.06	.06	.07	.14*	.13	.13*	.15*
Cumulative risk		.14*	.12	.08		.06	.04	.05
Nurturant parenting			.04	.07			-.06	-.05
Relationship with female caregiver			-.21***	-.14**			-.15*	-.13*
Relationship with friends			-.34***	-.26***			-.25***	-.19**
General self-esteem				-.39***				-.19**
Approach coping				.02				-.19**
Avoidance coping				.08				.23**
$R^2$ cumulative	.04	.05	.22	.35	.04	.04	.14	.22
$\Delta R^2$ at each step	.04*	.02*	.17***	.12***	.04*	.00	.10***	.07***
$R^2$ adjusted cumulative	.02	.04	.20	.32	.02	.02	.11	.18

The displayed coefficients are standardized beta weights obtained at each step. Two-tailed tests were used at each step in the regression to assess the statistical significance of the beta weight and the changes in  $R^2$  at each step.

\*  $p<.05$ .

\*\*  $p<.01$ .

\*\*\*  $p<.001$ .

step 4 revealed that physical aggression was significantly predicted by the number of caregivers, the young person's perceived relationship with the female caregiver, the young person's perceived relationship with his or her friends, general self-esteem, and approach and avoidant coping. The final model explained 22% of the variance in aggression [ $F(10,209)=5.756$ ,  $p < .001$ ;  $R^2$  adjusted=.18].

#### 4. Discussion

The purpose of this study was to build an exploratory predictive model of psychological adjustment for young people in out-of-home care. Results of hierarchical regression analyses provided some, albeit mixed, support for the proposed models of psychological adjustment. Specifically, lower anxiety in young people in out-of-home care was significantly associated with perceptions of a higher-quality relationship with the female caregiver, a greater number of perceived quality friendships, and higher self-esteem. These findings are consistent with previous research by Sabatelli and Anderson (1991), who demonstrated that the least anxious respondents were those who experienced a better relationship with their female caregiver, and with Dumont and Provost (1999) who reported self-esteem as one of the prominent protective resources used by youth to buffer negative events. Our findings relating quality friendships to psychological adjustment are also consistent with other studies (e.g., Masten & Powell, 2003). However, contrary to our hypotheses and past research (e.g., Herman-Stahl & Peterson, 1996), neither active nor avoidant coping strategies were significantly associated with anxiety.

In the model for physical aggression, the significant associations between less frequent physical aggression and a smaller number of primary caregivers, higher-quality relationships with the female caregiver and with friends, higher self-esteem, greater use of approach coping strategies, and less frequent use of avoidant coping strategies offered further empirical evidence that positive relationships with peers and positive self-esteem are associated with psychological adjustment (Dumont & Provost, 1999; Masten & Powell, 2003). As anticipated, and consistent with past findings, the use of avoidant coping strategies was more likely to be associated with poorer psychological adjustment (Galaif, Sussman, Chou, & Wills, 2003).

Our results suggest a slightly different pattern of factors associated with internalizing and externalizing behaviors. For example, coping strategies and number of primary caregivers were correlated with physical aggression but not anxiety. Reporting on a 21-year longitudinal study on childhood adversity, Fergusson and Horwood (2003) noted that while internalizing and externalizing behaviors were generally associated with a similar pattern of factors, they also had unique correlates.

Contrary to our hypotheses, cumulative risk had no significant association with psychological adjustment for either anxiety levels or physical aggression in the final step of the regression analyses. These findings contrast with previous research (e.g., Swearingen & Cohen, 1985). The absence of a significant cumulative risk–psychological adjustment relationship may have been due to several factors. First, our cumulative risk index comprised past adverse life events such as death of a parent or sibling, childhood sexual abuse, parental neglect, parent mental illness, or parent incarceration. All these life events pertain to experiences originating within the biological family, whereas our sample consisted mainly of fostered young people who were permanent wards of the state (i.e., legal guardianship was held by the province). In Ontario, the status of permanent ward often results in ties being severed with the birth families. Thus, the stressors experienced were no longer part of the fostered young people's daily experiences. A significant

relationship between risk factors and psychological adjustment is more commonly found in studies investigating daily hassles or recent life events, such as breaking up with a girlfriend or boyfriend or changing schools (Pine et al., 2002). Secondly, we did find evidence that the impact of negative life events on anxiety was fully mediated by the interpersonal relationship factors. According to Baron and Kenny (1986), full or partial mediation is found when the effect of a predictor (e.g., cumulative risk factors) on an outcome (e.g., anxiety) disappears or decreases after controlling for the effects of another predictor (e.g., high-quality friendships). While we found no evidence of mediation in the case of physical aggression, we did find that high-quality relationships with the female caregiver and friends fully mediated the cumulative life events–anxiety relationship. These findings further support the importance of interpersonal relationships in alleviating anxiety in out-of-home care young people (Masten & Powell, 2003).

Lastly, we did not observe any significant moderating effects of person or interpersonal factors on the cumulative risk–psychological adjustment relationship. Significant interaction effects such as these are notoriously difficult to detect in field studies, partly because of weak statistical power – an important consideration in our study (McClelland & Judd, 1993). However, our results are similar to findings of the 21-year longitudinal study reported by Fergusson and Horwood (2003), who also failed to find evidence that protective factors moderated the effect of risk on resilient outcomes. Rather, they found evidence of an additive model for both externalizing and internalizing behavioral outcomes, conclusions reached by means of different analytical strategies than those used in our study. On the surface, our results, combined with Fergusson and Horwood's (2003) findings, appear contradictory to other studies that have found support for the buffering effect of protective factors on the risk–adaptation relationship. Most studies supporting a buffering effect, however, have been conducted on at-risk populations of children living with *at least one competent biological parent* or, in the absence of that, children who had access to at least one caring competent adult (e.g., Masten & Powell, 2003; Swearingen & Cohen, 1985). Future studies are required to fully elucidate the life trajectories of fostered young people exhibiting resilience by incorporating measures of current hassles or stressors as well as additional protective factors such as key interpersonal relationships (e.g., confidant, mentor).

#### 4.1. *Practical implications*

The models tested have a number of practical implications in terms of interpersonal relationships and self-esteem. High-quality relationships with caregivers and friends were strongly associated with young people's psychological adjustment. In practice, training sessions can inform caregivers about the principles of authoritative parenting, including nurturant parenting style, and its associated beneficial effects on young people's development.

Findings of a relationship between young people's psychological adjustment and the presence of a good social network are not surprising, given the strong body of evidence linking social support with better physical and mental health (Cohen & Wills, 1985). Aid in rebuilding or maintaining an existing social support network appears central to consolidating a young person's sense of belonging and connectiveness. Some may benefit from interventions strengthening their social abilities. All could benefit from programs whose aim would be to facilitate social connections with peers at school, in the neighborhood, and with other fostered young people. A good social network would likely protect young people from developing psychological disorders in later life (Griffin et al., 1999; Lynskey & Fergusson, 1997) and help them successfully navigate their current out-of-home care environment.

Finally, an increased sense of self-worth or self-esteem can be fostered by consistent encouragement and support by caregivers (Gilligan, 1999). The sense of being valued is inherent in social support. It is characterized by unconditional acceptance, which favors the emergence of a positive sense of self (Sarason, Pierce, & Sarason, 1990). A young person's sense of worth and esteem can also be fostered by multiple experiences (without undue pressure) of mastery, academic successes, and involvement in activities valued by the young person and significant others (Gilligan, 1999, 2000).

In sum, effective and efficient interventions should target the person, peer, and caregiver level, each serving to strengthen the young person's psychological adjustment. For instance, without adequate levels of self-esteem, it is difficult for young people to create bonds and build positive relationships with peers or their caregivers. Interventions are needed at all three levels and thus should aim to strengthen the relationship between the caregiver and the young person, favor pro-social peer affiliations, and increase self-esteem.

#### 4.2. *Limitations*

The non-random sampling and cross-sectional design limit drawing causal inferences. Moreover, the exploratory nature of our study necessitates replicating the tested models in other samples, across a broader age range, and with different at-risk populations (e.g., young people living in their biological homes, foster homes, or group homes). Studying young people's trajectories over time would allow us to identify which factors come into play later on in the young person's development. Cross-sectional and longitudinal studies are planned to further test the models using data collected over a period of 3 years from the *Looking After Children* initiative.

There are two other limitations to the current study. First, the newly developed coping measure requires further validation in this population. While the current coping measure was found to be internally consistent, additional testing of its psychometric properties is necessary (e.g., convergent and divergent validity; test-retest reliability). Second, data were collected during a structured interview in which several people took part. The presence of the caregiver and of the child welfare worker, combined with the sensitive nature of several of the items, may have created demand characteristics that could have biased some of the answers given by both the young person and the caregiver. Social desirability may be particularly problematic for items measuring self-assessed parenting style or the young person's perceived relationship with the female caregiver. Cross-validation analyses of answers provided by foster parents and young people on these measures may shed light on the possible extent of response biases.

#### 4.3. *Future studies*

Our study begins to lay the framework for a comprehensive model of psychological adjustment for young people in out-of-home care. Although key elements included in the predictive models are supported in the literature, studies are needed to explore over time the dynamic relationship and impact of the proposed contextual, interpersonal, and person factors on psychological adjustment (for an exception, see Fergusson & Horwood, 2003). Indeed, if the child welfare system is to be effective in its role as a substitute parent, it needs to move beyond correcting weaknesses to focusing on systematically nurturing young people's strengths. As for research, its role is to continue identifying key correlates of resilient growth and development in fostered young people. As we continue to gain much needed insights into the interplay between

protective factors and outcome variables, new and innovative intervention programs will be able to provide fostered young people with better care and guidance. This project offers encouragement that young people in care can lead enriched and happy lives despite past adverse life experiences.

### Acknowledgment

We gratefully acknowledge the financial support for this research received from the Social Sciences and Humanities Research Council of Canada (strategic grant no. 828-1999-1008), the Ministry of Children and Youth Services of the Province of Ontario, and Human Resources Development Canada. We thank our organizational partners: the Ontario Association of Children's Aid Societies (Toronto, Ontario), the Child Welfare League of Canada (Ottawa, Ontario), Services to Children and Adults of Prescott-Russell (Plantagenet, Ontario), and the local Children's Aid Societies in Ontario that took part in the project. We would like to especially thank the young people, child welfare workers, foster parents, and group home staff for their cooperation. Lastly, we would like to thank two anonymous reviewers whose constructive comments helped us improve the overall quality of our manuscript.

### References

- Adams, M., & Adams, J. (1991). Life events, depression, and perceived problem solving alternatives in adolescents. *Journal of Child Psychology and Psychiatry*, *32*, 811–820.
- Ayers, T. S., Sandler, I. N., West, S. G., & Roosa, M. W. (1996). A dispositional and situational assessment of children's coping: Testing alternative models of coping. *Journal of Personality*, *64*, 923–958.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173–1182.
- Bentler, P. M., & Wu, E. J. C. (1995). *EQS for windows users guide*. Encino, CA: Multivariate Software Inc.
- Bolger, K. E., & Patterson, C. J. (2003). Sequelae of child maltreatment: Vulnerability and resilience. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 156–181). New York, NY: Cambridge University Press.
- Byrne, B. (2000). Relationship between anxiety, fear, self-esteem, and coping strategies in adolescence. *Adolescence*, *35*, 201–215.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.
- Cohen, S., & Wills, T. (1985). Stress, social support and the buffering hypothesis. *Psychological Bulletin*, *92*, 257–310.
- Coie, J. D., & Dodge, K. A. (1998). Aggression and antisocial behaviour. In W. Damon (Ed.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development*. New York: Wiley.
- Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin*, *127*, 87–127.
- Compas, B. E., Howell, D. C., Phares, V., Williams, R. A., & Guinta, C. T. (1989). Risk factors for emotional/behavioral problems in young adolescents: A prospective analysis of adolescent and parental stress and symptoms. *Journal of Consulting and Clinical Psychology*, *57*, 732–740.
- Compas, B. E., Malcarne, V. L., & Fondacaro, K. M. (1988). Coping with stressful events in older children and young adolescents. *Journal of Consulting and Clinical Psychology*, *56*, 405–411.
- Dende, R. D., & Plomin, R. (1991). Child and parent perceptions of the upsettingness of major life events. *Journal of Child Psychology and Psychiatry*, *32*, 627–633.
- Dumont, M., & Provost, M. A. (1999). Resilience in adolescents: Protective role of social support, coping strategies, self-esteem, and social activities on experience of stress and depression. *Journal of Youth and Adolescence*, *28*, 343–363.
- Fergusson, D. M., & Horwood, L. J. (2003). Resilience of childhood adversity, results of a 21-year study. In S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 130–155). Cambridge, NY: Cambridge University Press.

- Fields, L., & Prinz, R. J. (1997). Coping and adjustment during childhood and adolescence. *Clinical Psychology Review, 17*, 937–976.
- Flynn, R. J., Angus, D., Aubry, T., & Drolet, M. (1999). *Improving child protection practice through the introduction of looking after children into the 54 local children's aid societies in Ontario: An implementation and outcome evaluation*. Ottawa, ON: Centre for Research on Community Services, University of Ottawa.
- Flynn, R. J., & Biro, C. (1998). Comparing developmental outcomes for children in care with those for other children in Canada. *Children & Society, 12*, 228–233.
- Flynn, R. J., & Byrne, B. A. (2005). Overview and findings to date of research in the Ontario. *Looking After Children Project, OACAS Journal, 49*(1), 12–21.
- Flynn, R. J., Ghazal, H., & Legault, L. (2004a). *Looking after children: Good parenting, good outcomes, assessment and action records (second Canadian adaptation)*. Ottawa, ON: Centre for Research on Community Services, University of Ottawa and HMSO.
- Flynn, R. J., Ghazal, H., Legault, L., Vandermeulen, G., & Petrick, S. (2004b). Use of population measures and norms to identify resilient outcomes in young people in care: An exploratory study. *Child & Family Social Work, 9*, 65–79.
- Flynn, R. J., & Legault, L. (2002). *[The adolescent coping scale]*. Unpublished raw data. Ottawa, Ontario: Centre for Research on Community Services, University of Ottawa, Canada.
- Flynn, R. J., & Legault, L. (2003). Monitoring resilient outcomes with the assessment and action record from the looking after children. In K. Ernst, N. Trocme, & P. Dudding (Eds.), *Proceedings of the Canadian symposium of child and family services outcomes*. Calgary: Canadian Outcomes Institute.
- Galaif, E. R., Sussman, S., Chou, C., & Wills, T. A. (2003). Longitudinal relations among depression, stress, and coping in high risk youth. *Journal of Youth and Adolescence, 32*, 243–258.
- Gilligan, R. (1999). Enhancing the resilience of children and young people in public care by mentoring their talents and interests. *Child & Family Social Work, 4*, 187–196.
- Gilligan, R. (2000). Adversity, resilience and young people: The protective value of positive school and spare time experiences. *Children & Society, 14*, 37–47.
- Griffin, K. W., Scheier, L. M., Botvin, G. J., Diaz, T., & Miller, N. (1999). Interpersonal aggression in urban minority youth: Mediators of perceived neighbourhood, peer, and parental influences. *Journal of Community Psychology, 27*(3), 281–298.
- Heflinger, C. A., Simpkins, C. G., & Combs-Orne, T. (2000). Using the CBCL to determine the clinical status of children in state custody. *Children and Youth Services Review, 22*, 55–73.
- Herman-Stahl, M., & Peterson, A. C. (1996). The protective role of coping and social resources for depressive symptoms among young adolescents. *Journal of Youth and Adolescence, 25*, 733–753.
- Kufeldt, K., Simard, M., & Vachon, J. (2000). *Looking After Children in Canada: Final Report*. Fredericton, NB: Muriel McQueen Ferguson Family Violence Research Centre, University of New Brunswick. Retrieved in 2001 from <http://www.unbf.ca/arts/CFVR/documents/Looking-After-Children.pdf>
- Legault, L., Flynn, R., Artz, S., Balla, S., Cole, S., Ghazal, H., et al. (2004). Looking after children: Implementation and outcomes in Canada. *Journal of Child and Youth Care Work, 19*, 160–169.
- Loeber, R., & Farrington, D. P. (Eds.). (1998). *Serious and violent juvenile offenders: Risk factors and successful interventions*. Thousand Oaks, CA: Sage.
- Lynskey, M. T., & Fergusson, D. M. (1997). Factors protecting against the development of adjustment difficulties in young adults exposed to childhood sexual abuse. *Child Abuse and Neglect, 21*(12), 1177–1190.
- Marcus, R. F. (1991). The attachments of children in foster care. *Genetic, Social, and General Psychology Monographs, 117*, 365–394.
- Marsh, H. W., & O'Neill, R. (1984). Self-description questionnaire III: The construct validity of multidimensional self-concept ratings by late adolescents. *Journal of Educational Measurement, 21*, 153–174.
- Masten, A. S., & Powell, J. L. (2003). A resilience framework for research, policy, and practice. In S. Luthar (Ed.), *Resilience and vulnerability*. Cambridge, NY: Cambridge University Press.
- Masten, A. S., & Reed, M. J. (2002). Resilience in development. In S. Lopez, & C. Snyder (Eds.), *Handbook of Positive Psychology* (pp. 74–88). New York: Oxford University Press.
- McClelland, G. H., & Judd, C. M. (1993). Statistical difficulties of detecting interactions and moderator effects. *Psychological Bulletin, 114*, 376–390.
- Monaghan, J. H., Robinson, J. O., & Dodge, J. A. (1979). The children's life events inventory. *Journal of Psychosomatic Research, 23*, 63–68.
- Myers, D. G. (2001). *Psychology* (6th ed.). New York: Worth Publishers.
- Pine, D. S., Cohen, P., Johnson, J. G., & Brook, J. S. (2002). Adolescent life events as predictors of adult depression. *Journal of Affective Disorders, 68*, 49–57.

- Rubin, D. M., Alessandrini, E. A., Feudtner, C., Mandell, D. S., Localio, A. R., & Hadley, T. (2004). Placement stability and mental health costs for children in foster care. *Pediatrics*, *113*(5), 1336–1341.
- Sabatelli, R. M., & Anderson, S. A. (1991). Family system dynamics, peer relationships, and adolescent's psychological adjustment. *Family Relations*, *40*, 363–369.
- Sarason, B. R., Pierce, G. R., & Sarason, I. G. (1990). Social support: The sense of acceptance and the role of relationships. In B. R. Sarason, I. G. Sarason, & G. R. Pierce (Eds.), *Social support: An interactional view* (pp. 97–128). New York: John Wiley & Sons.
- Seiffge-Krenke, I. (1995). *Stress, coping, and relationships in adolescence*. New Jersey: Lawrence Erlbaum Associates Inc.
- Statistics Canada and Human Resources Development Canada (1999). *National longitudinal survey of children and youth: Overview of survey instruments for 1998–99, data collection cycle 3*. Ottawa: Authors. Retrieved in 2000 from [http://www.statcan.ca/english/rdc/nlscy\\_cycle3.htm](http://www.statcan.ca/english/rdc/nlscy_cycle3.htm)
- Stein, E., Evans, B., Mazumdar, R., & Rae-Grant, N. (1996). The mental health of children in foster care: A comparison with community and clinical samples. *Canadian Journal of Psychiatry*, *41*, 385–391.
- Swearingen, E. M., & Cohen, L. H. (1985). Measurement of adolescents' life events: The junior high life experiences survey. *American Journal of Community Psychology*, *13*, 69–85.
- Thoits, P. A. (1995). Stress, coping and social support processes: Where are we? What next? *Journal of Health and Social Behavior*, 53–79. Special Issue.
- Ward, H. (Ed.). (1995). *Looking after children: Research into practice*. London, UK: HMSO.

