



Full Length Article

Resilience and psychopathology among victimized youth in residential care

Anna Segura^{a,*}, Noemí Pereda^{a,c}, Georgina Guilera^{a,c}, Sherry Hamby^b^a Grup de Recerca en Victimització Infantil i Adolescent (GREVIA), Facultat de Psicologia, Universitat de Barcelona, Passeig Vall d'Hebron, 171, 08035 Barcelona, Catalonia, Spain^b Sewanee: The University of the South, 735 University Avenue, Sewanee 37383, TN, United States^c Institut de Recerca en Cervell, Cognició i Conducta, Spain

ARTICLE INFO

Keywords:

Poly-victimization
Child welfare
Residential facilities
Mental health problems
Adolescents
Resilience

ABSTRACT

This study examines the role of several resilience resources in the relationship between lifetime victimization and mental health problems among adolescents in care. The sample comprised 127 adolescents (53.% females, aged 12–17 years) from residential care facilities in Catalonia, Spain. The Juvenile Victimization Questionnaire, the Youth Self-Report, and the Adolescent Resilience Questionnaire were used to assess victimization, psychological symptoms, and resilience respectively. Results indicated that poly-victimization was associated with fewer resources, and with an increased risk of mental health problems. Self-resources mediated the relationship between victimization and internalizing and externalizing symptoms; community support mediated the relationship between victimization and internalizing symptoms. Self, school and peer support moderated the relationship between victimization and externalizing symptoms. Adolescents with fewer self-resources and less school support reported more externalizing symptoms, as did those with more peer support. However, poly-victimized youths reported symptoms within the clinical range, regardless of their level of resources. The findings stress the importance of preventing poly-victimization and of empowering poly-victimized adolescents, who appear to present low levels of resources. Researchers and clinicians should continue to study the poly-victimization/psychopathology relationship, and also design interventions and prevention programs which incorporate the most relevant resilience resources.

1. Introduction

Poly-victimization, or the experience of different types of interpersonal violence (e.g., caregiver, electronic, and sexual victimization) across lifetime, is known to be closely associated with psychopathology (Finkelhor, Ormrod, & Turner, 2009), including externalizing problems, such as delinquent and aggressive behavior (Cyr, Clément, & Chamberland, 2013; Ford, Elhai, Connor, & Frueh, 2010), but also internalizing problems such as depression and anxiety (Chan, 2013; Cyr et al., 2013). Adolescents placed in residential facilities, who have suffered high rates of different types of victimization experiences (Cyr et al., 2012; Ellonen & Pösö, 2011; Salazar, Keller, & Courtney, 2011; Segura, Pereda, Abad, & Guilera, 2015), are especially at risk for developing severe clinical symptoms, including depression, anxiety, and conduct disorders (Collin-Vézina, Coleman, Milne, Sell, & Daigneault, 2011; Greger, Myhre, Lydersen, & Jozefiak, 2015). However, not all victimized children and adolescents develop psychopathological

* Corresponding author at: Universitat de Barcelona, Departament de Psicologia Clínica i Psicobiologia, Facultat de Psicologia, Universitat de Barcelona, Passeig Vall d'Hebron, 171, 08035 Barcelona, Spain. Tel.: +933125113.

E-mail address: anna.segura@uvic.cat (A. Segura).

<http://dx.doi.org/10.1016/j.chiabu.2017.08.019>

Received 9 June 2016; Received in revised form 3 July 2017; Accepted 17 August 2017

0145-2134/© 2017 Elsevier Ltd. All rights reserved.

symptoms. Some children have the ability to achieve adequate or even high levels of functioning (e.g., DuMont, Widom, & Czaja, 2007). Rutter (2006) defined these individuals as resilient. However, the links between poly-victimization and resilience have not been widely explored, especially in high-risk samples such as youth in care. The current study examines several protective factors as potential mediators or moderators of the poly-victimization/psychopathology relationship.

1.1. Protective factors that mitigate the relationship between victimization and psychopathology

In recent decades the phenomenon of resilience has generated considerable interest. Luthar, Cicchetti, and Becker (2000) defined resilience as a dynamic process in which an individual adapts positively to a context of adversity. Recent research (Dutton & Greene, 2010) has suggested that resilience can be conceived as a set of protective factors which include both individual variables such as self-esteem or social skills and environmental variables such as family, friends, school and community support (Gartland, Bond, Olsson, Buzwell, & Saywer, 2011; Ungar 2011). The present study adopts the framework used by Gartland, Bond, Olsson, Buzwell, and Sawyer (2006) and evaluates both individual and environmental factors, that is, self, family, peers, school, and community.

Several studies have analyzed the impact of victimization on children and adolescents' resilience, as well as the role of several protective factors in the development of psychological symptoms. Collin-Vézina et al. (2011) and Turner, Shattuck, Finkelhor, and Hamby (2015), with residential care and community adolescent samples, respectively, showed that experiencing poly-victimization has a negative impact on resilience, reducing both social and personal resources. Research has also found that protective factors were associated with fewer internalizing and externalizing symptoms (e.g., Hjmedal, Vogel, Solem, Hagen, & Stiles, 2011; Jaffe, Caspi, Moffitt, Polo-Tomás, & Taylor, 2007; Mann, Hosman, Schaalma, & de Vries, 2004; Skrove, Romundstad, & Indredavik, 2013), and with improved well-being in an at-risk youth sample (Sanders, Munford, Thimasarn-Anwar, Liebenberg, & Ungar, 2015).

Some researchers have begun to explore the specific mechanisms involved in the links between poly-victimization, protective factors, and outcomes. Studies have found that social support from family, peers, and school, as well as personal resources such as self-worth, are able to moderate the negative effects of victimization experiences (e.g., peer victimization, dating violence) on adolescents' and young adults' psychological symptoms (Campbell-Sills, Cohan, & Stein, 2006; Grills & Ollendick, 2002; Holt & Espelage, 2005, 2007; Kliwer, Murrelle, Mejia, Torres, & Angold, 2001; Stadler, Feifel, Rohrmann, Vermeiren, & Poustka, 2010), indicating that the relationship between victimization and distress changes under these conditions. For example, the study by Stadler et al. (2010) just mentioned found parental support to be significantly effective for young female adolescents, acting as a buffer against the effect of peer-victimization on mental health problems. Other studies have shown that protective factors such as self-esteem and social support mediated the victimization/mental health relationship (Benas & Gibb, 2007; Grills & Ollendick, 2002; Pouwelse, Bolman, Lodewijx, & Spaa, 2011; Turner, Finkelhor, & Ormrod, 2010; Ybrandt & Armelius, 2010); the experience of victimization negatively influences these resources, which in turn increases the risk of mental health problems.

However, few studies to date have specifically explored whether some factors might be protective even in cases of poly-victimization. Soler, Kirchner, Paretilla, and Forns (2013) reported that the personal resource of self-esteem buffered, as a mediator and moderator, the impact of multiple victimization experiences on internalizing and externalizing symptoms. Turner et al. (2015) showed that self-esteem and mastery mediated the relationship between poly-victimization and psychological distress. Regarding adolescents in the child welfare system, Salazar et al. (2011) found that social support had a mediating and moderating role between multiple maltreatment experiences and depression. However, this study only considered physical abuse, sexual abuse, psychological abuse, and neglect, rather than a full range of victimizations.

1.2. The current study

To our knowledge, few studies have sought to identify protective factors that play an important role between poly-victimization and psychopathology, and even fewer have studied resilience among adolescents in residential care. Grych, Hamby, and Banyard (2015) argued that researchers need to explore which resilience domains enable people to cope effectively with their lifetime victimization experiences. With this in mind, the aim of the present study is to examine whether a range of individual and environmental factors (i.e., self, family, friends, school, neighbor, and residential care workers) may serve as mediators and/or moderators of the association between lifetime victimization and mental health problems (internalizing and externalizing symptoms) in a sample of adolescents in care. Our hypotheses are as follows: (1) Consistent with mediation effects, we expected that a history of victimization would be significantly related to lower levels of resilience, which in turn would be associated with higher levels of mental health problems; and (2) consistent with moderation effects, we hypothesized that the association between lifetime victimization and adolescents' mental health problems would be stronger among youth who reported lower (vs. higher) levels of current resilience.

2. Method

2.1. Participants

The initial sample included 129 adolescents. Cases with missing scores on all YSR broad-band dimensions and/or all ARQ dimensions were removed. The final sample therefore comprised 127 adolescents aged 12–17 ($M = 14.60$, $SD = 1.61$), 62 of whom were male and 65 female. Adolescents were recruited from 18 residential facilities (78.0% long-term and 22.0% short-term centers) managed by the child welfare system in Catalonia, Spain. Males and females showed significant differences in age ($U = 139000$, $p = .002$), with females being older than males.

Child welfare system documentation indicated the following reasons for protective placement: neglect (71.5%), physical abuse (11.8%), sexual abuse (3.9%), unaccompanied immigrant children (2.3%), labor exploitation (1.5%), witnessing domestic violence (1.5%), fetal abuse (0.8%), corruption (0.8%), and undefined risk situations (13.4%) (sum is more than 100% because more than one reason could be documented). For 3.1% of cases no reason was recorded in the child welfare system files. The mean length of stay in residential care was 3.55 years ($SD = 3.28$, $Md = 2.21$). The parents of most adolescents (89.8%) still had visitation rights.

According to an adaptation of the Hollingshead Index (Hollingshead, 1975), 36.2% of participants' families had low socioeconomic status, 20.5% medium-low, 10.2% medium, 2.4% medium-high, and 3.1% high. For the remaining adolescents (27.%) the required information was not available. A total of 67.7% were born in Spain, 16.5% in Central or South America, 10.2% in Africa, 3.9% in other European countries, and 1.6% in Asia.

2.2. Procedure

Using a convenience sampling method, 14.63% of the residential facilities run by the Directorate General for Children and Adolescents (DGAIA) within the Catalan Ministry of Social Welfare and Family participated in the study. Adolescents were recruited according to two inclusion criteria: they had to be between 12 and 17 years old and they had to have sufficient cognitive and language abilities to understand the interview questions. The rate of participation was 69.2% among those who met inclusion criteria and were invited to participate, which represented 9.1% of the total children and adolescents in residential care facilities in 2013 in Catalonia according to data provided by the DGAIA (personal communication, March 4, 2014). Researchers trained in collecting data on violence against children (UNICEF, 2012) administered the individual interviews. All procedures were conducted in accordance with the basic ethical principles of the Declaration of Helsinki in Seoul (World Medical Association, 2008) and were approved by the IRB of the study's home institution. No financial stipend was offered to participants.

2.3. Measures

2.3.1. Sociodemographic data

Adolescents and parents were asked to provide sociodemographic information including age, gender, country of birth (Spanish born vs. foreign), educational level, and occupation of parents.

2.3.2. Child welfare data

Information regarding adolescents' involvement with the child welfare system, including type of center, the reason for being taken into care, the time under protection measures, and contact with parents was obtained from the child welfare system files.

2.3.3. Victimization experiences – juvenile victimization questionnaire (JVQ; Finkelhor, Hamby, Ormrod, & Turner, 2005)

The JVQ is a self-report instrument designed to assess 36 different types of victimization against children and youth, for both lifetime and past-year time frames. In the current study the interview version of the JVQ was used, which was previously translated into Catalan and Spanish with the authors' permission. The instrument groups victimizations into six modules: conventional crime (9 items), caregiver victimization (4 items), victimization by peers and siblings (6 items), sexual victimization (6 items), witnessing and indirect victimization (9 items), and electronic victimization (2 items). For each item the presence or absence of this victimization experience was scored as 1 or 0, respectively. The original version of the JVQ has shown good psychometric properties (Finkelhor et al., 2005). Validity evidence has also been reported for the Spanish/Catalan adaptation of the JVQ (Pereda, Gallardo-Pujol, & Guílera, in press).

2.3.4. Psychopathology – youth self-report/11–18 (YSR; Achenbach & Rescorla, 2001)

The YSR is a self-report instrument designed to evaluate emotional and behavioral problems among adolescents. The instrument comprises 119 items which are responded to using a three-point Likert-type scale ranging from 0 (not at all) to 2 (very often), according to the frequency of occurrence within the last six months. Items are grouped into two subscales: internalizing and externalizing symptoms. For the broad-band dimensions a T score ≥ 64 is interpreted as indicating clinical severity. The YSR was translated by the Epidemiology and Diagnosis in Developmental Psychopathology Unit of the Autonomous University of Barcelona. Both the original and the Spanish versions of the YSR have shown adequate psychometric properties (Achenbach & Rescorla, 2001; Zubeidat, Fernández-Parra, Ortega, Vallejo, & Sierra, 2007). With regard to reliability the current study had Cronbach's alphas of .90 for the externalizing symptom scale and .88 for the internalizing symptom scale.

2.3.5. Resilience – adolescent resilience questionnaire (ARQ; Gartland et al., 2006)

The ARQ is a self-report instrument developed to assess individual and environmental factors underlying adolescents' resilience. The instrument comprises 88 items which are responded to on a five-point Likert-type scale from 1 (almost never) to 5 (almost always). Items are grouped into five resilience domains: 1) self (i.e., confidence, emotional insight, negative cognition, social skills, and empathy/tolerance scale) (40 items); 2) family (i.e., connectedness and availability) (11 items); 3) peers (i.e., connectedness and availability) (15 items); 4) school (i.e., supportive environment and connectedness) (16 items); and 5) community (i.e., connectedness) (6 items), with minimum and maximum scores ranging between 1 and 5. The ARQ was translated by psychologists and language experts with the original authors' permission. The original version (Gartland et al., 2006) and the Spanish/Catalan version (Guílera, Pereda, Paños, & Abad, 2014) of the ARQ have both shown adequate psychometric properties. With regard to the reliability

of the domains, Cronbach's alphas in this study were .61 for self, .87 for family, .73 for peers, .77 for school, and .84 for community. In addition, in the present study an ad hoc measure of perceived support from care workers was created, called Residential Care (7 items), which obtained a Cronbach's alpha of .87.

2.4. Data analysis

Bivariate and multivariate analyses were performed with the available cases. First, to explore the relationships between victimization, resilience domains, mental health, and sociodemographic characteristics, we computed Pearson's and point-biserial correlations and phi coefficients, as appropriate. All quantitative variables were normally distributed, with skewness and kurtosis values equal to or less than 1.5.

Two sets of multiple regression analyses were performed, one examining resilience domains as mediators and the other examining resilience domains as moderators. Each resilience domain was tested as a mediator and as a moderator since the previous literature supports both analyses. In both analyses, predictors were centered around their means. To test mediation, macros recommended by Hayes (2013) were employed using model 4, in conjunction with bootstrapping of indirect effects with 1000 resamples. This approach examines the mediating role by evaluating the significance of the indirect effect ($a*b$), which is the association between the predictor (X) and the outcome (Y) via the mediating variable (M), where a is the effect of X on M, and b is the effect of M on Y. In each analysis we entered sociodemographic variables (i.e., gender, age, country of birth) as covariates, victimization as the independent variable, mental health problems (e.g., internalizing or externalizing symptoms) as the dependent variable, and the potential mediating protective factor as the mediator (M) variable. The indirect effects were considered statistically significant when the unstandardized b , 95% confidence interval (CI) did not include the value 0.

To examine the hypothesized moderating role of resilience domains we conducted a hierarchical multiple regression analysis for each potential moderator. In each regression, after controlling for sociodemographic variables (i.e., gender, age, country of birth) in step 1 (not reported in Table 3), victimization and a potential moderator were entered in the second step, and the interaction between victimization and a moderator in the final step. To show the direction of the moderator effect, when statistically significant interactions were found (unstandardized b_i), the significant protective factor was separated into high and low scores based on the split mean. Graphs were created that separated the victimization variable into three groups, with the most victimized group being composed of current poly-victims based on the criterion of the top 10% of the sample, as proposed by Finkelhor, Ormrod, and Turner (2009).

3. Results

3.1. Descriptive analyses

Table 1 presents descriptive data for victimization, resilience domains (i.e., self, family, peers, school, community, and residential care), and mental health variables (i.e., internalizing and externalizing symptoms).

3.2. Preliminary bivariate correlations

Correlation coefficients were computed to determine the strength of the bivariate associations between lifetime victimization, resilience domains, and mental health problems (i.e., internalizing and externalizing symptoms). As shown in Table 2, sociodemographic variables had significant positive associations with victimization and with each other. Females showed significant inverse associations with some resilience domains. Experiencing more lifetime victimization was significantly associated with greater internalizing and externalizing symptoms. Additionally, lifetime victimization was inversely associated with self, family, and community support, indicating that adolescents who experienced more victimization reported fewer resources for those variables. Moreover, all but one of the resilience domains were inversely associated with one or both classes of mental health problems, the exception being residential care support.

Table 1
Descriptive statistics of study variables.

Variables	<i>n</i>	<i>M</i>	<i>SD</i>	Range (Minimum–Maximum)
Victimization	127	8.80	5.23	26 (1–27)
Self	107	3.24	0.49	2.30 (2.08–4.38)
Family	124	3.46	1.11	3.75 (1.13–4.88)
Peers	123	3.82	0.67	3.01 (1.99–5.00)
School	110	3.45	0.73	3.25 (1.56–4.81)
Community	125	3.11	1.09	4.00 (1.00–5.00)
Residential care	122	4.11	0.85	3.14 (1.86–5.00)
Internalizing symptoms	127	59.98	9.41	48 (35–83)
Externalizing symptoms	127	61.17	10.43	57 (34–91)

Table 2
Intercorrelations among study variables.

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Females ^a	–											
2. Age	.28**	–										
3. Foreigners ^a	.17	.24**	–									
4. Victimization	.27**	.26**	.17*	–								
5. Self	–.27**	.16	.10	–.23*	–							
6. Family	–.19*	–.10	–.14	–.23*	.21*	–						
7. Peers	–.10	.05	–.01	–.13	.35**	.20*	–					
8. School	–.12	.03	–.01	–.10	.35**	.32**	.25**	–				
9. Community	–.18*	–.14	–.05	–.30**	.21*	.24**	.33**	.13	–			
10. Residential care	–.01	.02	.10	–.15	.05	.19*	.24**	.33**	.22*	–		
11. Internalizing symptoms	.12	–.04	.09	.31**	–.64**	–.10	–.32**	–.16	–.25**	.01	–	
12. Externalizing symptoms	.15	.10	–.07	.41**	–.43**	–.19*	.17	–.44**	–.13	–.15	.33**	–

Note: Significance is shown by multiple asterisks * $p < .05$, and ** $p < .01$.

^a Males and being born in Spain were the reference categories.

3.3. Regression analyses testing potential mediators

To show that a variable is a mediator the indirect effect should be statistically significant (Hayes, 2013). Mediation analyses were performed for all resilience domains and symptoms; however, results are only reported when indirect effects were statistically significant. Consequently, we only report self and community support factors in the case of internalizing symptoms, and self in the case of externalizing symptoms. Fig. 1 shows the significant mediational analyses, indicating the unstandardized regression coefficients accounting for the a-path (between the predictor and the potential mediator variable), the b-path (between the potential mediator and the dependent variable), the c'-path (between the predictor and the dependent variable after controlling for the proposed mediator), and the indirect effect ($a*b$).

3.3.1. Internalizing symptoms

The multivariate model examined self as a potential mediator (see Fig. 1a). The model was statistically significant ($F_{(5,101)} = 17.91$, $p < .001$, $R^2 = .47$). Paths a and b were statistically significant, whereas path c' was statistically nonsignificant. Bootstrapping results indicated a significant indirect effect of victimization on internalizing symptoms (via self), $a*b = .36$, 95% CI [.12, .60]. Thus, the relationship between victimization and internalizing problems was mediated by self.

The multivariate model also examined community support as a potential mediator (see Fig. 1b). The model was statistically significant ($F_{(5,119)} = 4.13$, $p = .002$, $R^2 = .15$). Paths a and c' were statistically significant, whereas path b was statistically nonsignificant. Bootstrapping results indicated a significant indirect effect of victimization on internalizing symptoms (via community support), $a*b = .08$, 95% CI [.01, .21]. Although path b was not statistically significant, community support mediates the relationship between victimization and internalizing symptoms.

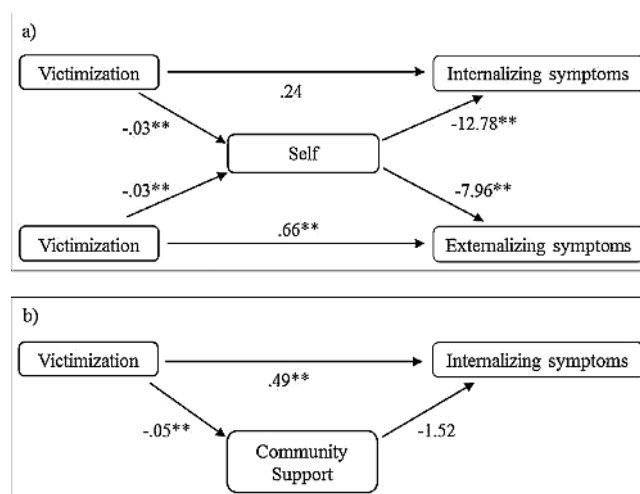


Fig. 1. Unstandardized regression coefficients for the relationship between lifetime victimization, internalizing and externalizing symptoms, and self and community support.

Note: Demographic characteristics are controlled for (see text). Significance is shown by multiple asterisks * $p < .05$, and ** $p < .01$.

Table 3

Hierarchical multiple regression analyses predicting internalizing and externalizing symptoms from victimization and self, family, peers, school, community, and residential care support.

Predictor	Internalizing symptoms				Externalizing symptoms			
	Step 2B (SE)	Step 3B (SE)	Adj. R^2	ΔR^2	Step 2B (SE)	Step 3B (SE)	Adj. R^2	ΔR^2
Self ($n = 107$)	.24 (.15)	.27 (.15)	.444	.456**	.66 (.19)**	.60 (.19)**	.260	.276**
Step 2. Victimization Self	–12.78 (1.52)**	–12.62 (1.52)**			–7.96 (1.94)**	–8.30 (1.89)**		
Step 3. Victimization \times Self		–.49 (.32)	0.451	0.012		1.05 (.40)**	0.302	.047**
Family ($n = 124$)	.54 (.16)**	.55 (.17)**	0.074	.086**	.77 (.17)**	.85 (.18)**	0.164	.166**
Step 2. Victimization Family	–.29 (.75)	–.31 (.75)			–1.12 (.79)	–1.18 (.79)		
Step 3. Victimization \times Family		.07 (.15)	0.067	.002		.29 (.15)	.182	.023
Peers ($n = 123$)	.49 (.16)**	.45 (.16)**	.153	.159**	.86 (.17)**	.97 (.17)**	.176	.180**
Step 2. Victimization Peers	–3.74 (1.16)**	–3.58 (1.17)**			1.14 (1.24)	.68 (1.22)		
Step 3. Victimization \times Peers		–.24 (.23)	.153	.008		.67 (.24)**	.220	.049**
School ($n = 110$)	.55 (.17)**	.56 (.17)**	.095	.108**	.67 (.16)**	.73 (.16)**	.288	.301**
Step 2. Victimization School	–1.53 (1.18)	–1.55 (1.19)			–5.66 (1.13)**	–5.78 (1.11)**		
Step 3. Victimization \times School		.07 (.24)	.087	.001		.55 (.22)*	.320	.037*
Community ($n = 125$)	.49 (.17)**	.47 (.17)**	.112	.118**	.84 (.18)**	.85 (.18)**	.160	.160**
Step 2. Victimization Community	–1.53 (.78)	–1.40 (.79)			–.02 (.83)	–.04 (.84)		
Step 3. Victimization \times Community		–.17 (.16)	.113	.008		.03 (.17)	.153	.000
Residential care ($n = 122$)	.54 (.17)**	.54 (.17)**	.065	.082**	.79 (.18)**	.81 (.17)**	.161	.160**
Step 2. Victimization Residential care	.49 (.98)	.70 (1.02)			–.89 (1.03)	–1.38 (1.06)		
Step 3. Victimization \times Residential care		–.16 (.21)	.062	.005		.37 (.22)	.175	.020

Note: Significance is shown by multiple asterisks * $p < .05$, and ** $p < .01$.

3.3.2. Externalizing symptoms

The multivariate model examined self as a potential mediator (see Fig. 1a). The model was statistically significant ($F_{(5,101)} = 8.44$, $p < .001$, $R^2 = .29$). All paths (a, b, and c') were statistically significant. Bootstrapping results indicated a significant indirect effect of victimization on externalizing symptoms (via self), $a*b = .22$, 95% CI [.07, .45]. Thus, the relationship between victimization and externalizing problems was mediated by self.

3.4. Hierarchical multiple regression analyses testing potential moderators

3.4.1. Internalizing symptoms

As shown in Table 3, linear regression analyses examined the relationship between different resilience domains, victimization, and internalizing symptoms. Self and peer support showed an effect on internalizing symptoms: having fewer self-resources and less peer support were both associated with significantly greater internalizing symptoms. Hierarchical regressions analyzing family, school, community, and residential care support did not show effects on internalizing symptoms. Furthermore, there were no significant interactions between victimization and any protective factor. Thus, no moderator effects were found.

3.4.2. Externalizing symptoms

As shown in Table 3, each regression analysis examined the relationship between different resilience domains, victimization, and externalizing symptoms. Self and school support showed an effect on externalizing symptoms: having fewer self-resources and less school support were both associated with greater externalizing symptoms. Hierarchical regressions analyzing family, peer, community, and residential care support did not show effects on externalizing symptoms. There were, however, interactions with victimization for three resilience domains (self, peer, and school support) when externalizing symptoms were the outcome. As shown in Fig. 2a, adolescents who reported low and high scores on peer support showed a similar association between victimization and externalizing symptoms at low and moderate levels of victimization. For poly-victims, however, those with high peer support unexpectedly showed more externalizing symptoms than did those lower in peer support, although in both poly-victim groups the clinical range was reached.

Moderator effects were also found for self and school support, both of which followed a similar pattern, albeit one that was somewhat different from that observed for peer support. As shown in Fig. 2b and c, at low and moderate levels of victimization, adolescents who reported lower scores on self and school support showed more externalizing symptoms than did adolescents with more self-resources or more school support. However, the pattern shifted for poly-victims. All poly-victimized adolescents were in the clinical distress range and those with more self-resources and more school support did not appear to be very different from their peers.

4. Discussion

The purpose of this study was to examine whether personal and environmental protective factors play mediating or moderating roles in the association between lifetime victimization and mental health problems in a sample of adolescents being cared for by the

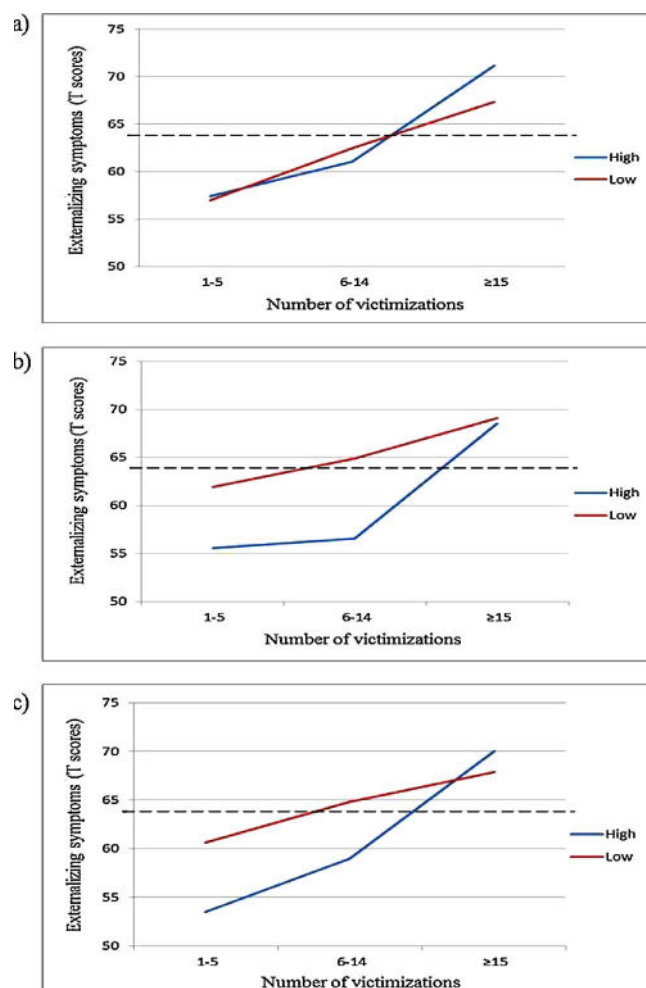


Fig. 2. Lifetime victimization, externalizing symptoms, and peer support (a), self (b) and school support (c) (high vs. low).
Note: The clinical range ($T \geq 64$) is indicated with a dashed line.

child welfare system in a southwestern European country. Few prior studies have included at-risk samples such as adolescents in care, and doing so constitutes an important step towards increasing knowledge about mechanisms of recovery after facing multiple adversities across the lifespan. Our study also adds to the literature on poly-victimization, or the cumulative burden of multiple types of victimization, and examines a wide range of personal and environmental resources.

Overall, and in agreement with previous studies (Collin-Vézina et al., 2011; Turner et al., 2006), our results suggest that experiencing poly-victimization was associated with a lesser presence of protective resources in the individual, family, and community resilience domains. Furthermore, we found, in general, that high scores on resilience domains were associated with fewer internalizing and externalizing symptoms, this being in agreement with previous studies of community youth samples (e.g., Hjemdal et al., 2011; Mann et al., 2004). Results indicated that individual and environmental protective factors are doubly involved with resilience, because they are negatively associated with the accumulation of victimization experiences and also related to mental health. Given the interest and potential importance of pathways to resilience, focusing on how this phenomenon works is necessary. In this study we found evidence for both mediation and moderation, depending on the variable analyzed. As regards sex, being female was associated with lower scores on self, family and community resilience domains. These results support previous studies which have found that females have lower levels of self-esteem (Veselska et al., 2009; Ybrandt & Armelius, 2010). However, while some studies suggest that females have more social resources than males (Veselska et al., 2009), others have found that, overall, males obtain higher levels of social support (Kliewer et al., 2001). We therefore feel that the issue merits further analysis. Also, in accordance with previous research (Pereda, Guilera, & Abad, 2014) we found a relationship between being female and experiencing victimization, especially sexual victimization. In relation to the country of birth, foreign participants also seem to present more victimization. Other studies have already shown that immigrant status is related to higher victimization rates, due, to some extent, to socioeconomic factors such as family size and single parenthood (Alink, Euser, Vvn Ijzendoorn, & Bakermans-Kranenburg, 2013; Euser, van Ijzendoorn, Prinzie, & Bakermans-Kranenburg, 2011).

As regards our first hypothesis we expected mediational effects, in the sense that lifetime victimization would be associated with

lower levels of resilience domains, which in turn would be associated with greater symptoms. This hypothesis was partially confirmed for two resilience domains. Self-resources had significant effects on internalizing and externalizing symptoms, indicating that the indirect effects of lifetime victimization on internalizing and externalizing symptoms were operating through the self domain. This result is consistent with previous studies involving community adolescent samples (Soler et al., 2013; Turner et al., 2015). Experiencing multiple types of victimization has been reported to have a powerful effect on personal resources related to self-confidence, by having a negative impact on adolescents' view of themselves (Turner et al., 2015) and self-evaluation as worthy social beings (Soler et al., 2013), which in turn had an effect on the development of internalizing and externalizing problems. In a similar vein, Ybrandt and Armelius (2010) identified victimization experiences as a predictor of youths' low self-esteem, which in turn increased externalizing symptoms. In this context, it should be borne in mind that involvement in rule-breaking and aggressive behavior could be a strategy used by victims to achieve a more popular adolescent image (Marsh et al., 2001).

Our analysis also showed that community support mediates the relationship between victimization and internalizing symptoms, indicating that the indirect effect of lifetime victimization on internalizing symptoms was operating through community support. This result is in line with the study by Salazar et al. (2011), who found that social support partially mediated the link between multiple victimization and depression in a sample of youth cared for by the child welfare system. However, it is not clear why, in our study, other resilience domains related to social support, such as family, peer, school, and residential care support, did not show protective mediational effects. Turner et al. (2015) suggested that general social support did not mediate the poly-victimization/distress relationship because it may operate through personal resources. More fine-grained analyses of different types of social support, such as those assessed in the present study, might shed light on which are the most important forms of support to bolster for youth in care.

Our second hypothesis was that resilience domains would moderate the association between lifetime victimization and adolescent mental health problems, with a stronger effect of victimization among those who reported lower (vs. higher) scores of resilience domains. This hypothesis was partially confirmed for some resilience domains and externalizing symptoms, but no moderating effects were found for internalizing symptoms. Regarding the latter, and in contrast to our results, some previous studies have found a moderating effect (e.g., Salazar et al., 2011). Furthermore, and in line with Guerra, Pereda, Guilera, and Abad (2016), we do not rule out the possibility that social support, in this case from friends, school, family, residential carers, and the community, as well as personal resources, might be important protective factors against adolescents' internalizing symptoms.

In our sample, moderation was more often found for externalizing symptoms, regarding self, peer support, and school support. Self and school support showed a similar pattern to that described by Soler et al. (2013) and Stadler et al. (2010) for single types of victimization, where the association between lifetime victimization and externalizing symptoms was stronger among adolescents who reported lower (vs. higher) scores of these protective factors. However, in agreement with Salazar et al. (2011), our results showed that this protective effect largely vanishes for poly-victims, who were highly symptomatic (in the clinical range of YSR scores) regardless of how many self-resources or how much school support they had. Regarding peer support, and contrary to our expectations, a stronger relationship between victimization and externalizing symptoms was found for those adolescents who were more connected and had more confidence with their peers (vs. those with low levels of peer support). A possible explanation for this finding is that poly-victims were more involved with delinquent peers, and "support" from them had a negative influence. Past research has found that peers may endorse involvement in delinquency (Ford et al., 2010) and that in maltreated youth in the experience of foster care may trigger risk behaviors (e.g., delinquency) resulting from the contact with deviant peers (Taussig, 2002). But support from antisocial peers can also be seen as a hidden resilience strategy for adolescents who have experienced adversities and have not found support from their caregivers. Previous studies have termed this phenomenon the "peer paradox" since this support allows the adolescents to maintain significant relationships rather than lose their only significant ones (Sanders, Munford, Liebenberg, & Ungar, 2014). Further research is needed to determine whether there are beneficial and harmful types of peer support.

4.1. Limitations

The present study has certain limitations that should be considered. Given that adolescents in care compose an at-risk sample they may have experienced other types of life adversities such as natural disasters or the death of a relative (e.g., Salazar, Keller, Gowen, & Courtney, 2013). Because protective variables could operate differently in different kinds of stressful situations (Grych et al., 2015) our findings should not be extrapolated to all contexts. Although some authors recommend the use of self-report data for adolescent samples (e.g., for victimization experiences, see Hamby & Finkelhor, 2000; resilience and symptoms, see Hjemdal et al., 2007), future studies would benefit from multiple sources of data. A further, methodological limitation of our study derives from the cross-sectional design. Causal models, such as mediating and moderating models, in the study of victimization are ideally tested in longitudinal designs, although they can also be applied in cross-sectional designs when the independent variable is supposed to precede the mediator/moderator variable, which itself precedes the dependent variable (Wu & Zumbo, 2008). A vast amount of scientific literature using longitudinal designs has shown that victimization experiences may interact with resilience resources or contribute to their reduction, and in turn, may explain the high levels of subsequent psychopathological symptoms. However, our results should be interpreted in terms of the extent to which our data are consistent with the proposed causal process, rather than being regarded as proving a causal claim (Hayes, 2013). Also, since the current dropout rate is 33%, the findings should be replicated with other samples before they can be generalized beyond the participants involved in the study. Finally, the small sample size and the lack of statistical power could explain the lack of statistically significant associations for some analyses.

4.2. Research implications

Overall, more research is needed regarding the role of personal and environmental resources in the relationship between poly-victimization and psychopathology, especially among at-risk adolescent samples. Given that adolescents in care have experienced a large number of victimizations across their lives (e.g., Collin-Vézina et al., 2011), and that the current results show that the accumulation of interpersonal violence was negatively associated with lower personal and environmental resources, it would be useful to examine longitudinally how protective factors are affected during childhood and adolescence, comparing community and at-risk samples, and also the transition to adulthood. Our findings showed that self-resources may mediate or moderate the relationship between victimization and mental health problems. This suggests that their role may be more complex and that future research should explore more intricate relationships, for example moderated mediation or mediated moderation (Hayes, 2013). Despite the nonsignificant findings for residential care staff support, future studies might further explore the ways in which carers may promote resilience in youth. Finally, this study is an attempt to explore several protective factors and their relationship with victimization experiences and psychopathology. Future efforts should aim to develop an even more comprehensive model of resilience that includes other protective factors (e.g., meaning-making strengths, see Grych et al., 2015).

4.3. Clinical and policy implications

These findings have important clinical implications for work with adolescents in care. Clinicians and child welfare workers should consider the triad composed of a history of victimization experiences, protective factors, and mental health problems, such that efforts should be directed toward ensuring that residential facilities are free from violence, to assessing multiple types of victimization for youth in care, and to empowering adolescents in care. Our results are consistent with recent theoretical efforts, including the Resilience Portfolio Model, that call for a broader assessment of numerous protective factors across different aspects of the social ecology (Grych et al., 2015). In clinical and residential facility settings, and especially for those adolescents who have experienced multiple types of victimization, our results point to the importance of bolstering different types of social support and of paying greater attention to the needs of poly-victims, whose victimization burden is so high that some protective factors may have reduced benefit. Since self-resources seem to be related to both internalizing and externalizing symptoms, a priority for practitioners should be focus on interventions designed to develop adolescents' internal resources in order to successfully prevent psychopathology. Especially, poly-victims may need help with bolstering multiple resources, such as their emotional insight, social skills, and confidence. Additionally, strengthening community ties by being involved in collective activities would be advisable. Prevention programs offer another way of reducing mental health problems and, potentially, of interrupting the cycle of re-victimization and poly-victimization, for example, by boosting individual resources (e.g., social skills, empathy, and tolerance), and creating supportive environment in schools. Less formally therapeutic programs, including involvement in scout groups or sports teams, rather than spending time only with other victimized youths in care, can also have positive effects on many of these protective factors. Ultimately, preventing poly-victimization is essential to avoid circumstances in which young people's resources for dealing with distress are exhausted.

Declaration of conflicting interests

The authors declare no conflicts of interest with respect to the research, authorship, and/or publication of this article.

Acknowledgements

This publication was supported by research grants from RECERCAIXA 2013, the Directorate General for Children and Adolescents [Direcció General d'Atenció a la Infància i l'Adolescència] of the Generalitat de Catalunya, and the Agustí Pedro i Pons Foundation.

References

- Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA school-age forms & profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.
- Alink, L. R. A., Euser, S., Van Ijzendoorn, M. H., & Bakermans-Kranenburg, M. J. (2013). Is elevated risk of child maltreatment in immigrant families associated with socioeconomic status? Evidence from three sources. *International Journal of Psychology*, 48(2), 117–127. <http://dx.doi.org/10.1080/00207594.2012.734622>.
- Benas, J. S., & Gibb, B. E. (2007). Peer victimization and depressive symptoms: The role of body dissatisfaction and self-esteem. *Journal of Cognitive Psychotherapy*, 21(2), 107–116. <http://dx.doi.org/10.1891/088983907780851559>.
- Campbell-Sills, L., Cohan, S. L., & Stein, M. B. (2006). Relationship of resilience to personality, coping, and psychiatric symptoms in young adults. *Behaviour Research and Therapy*, 44(4), 585–599. <http://dx.doi.org/10.1016/j.brat.2005.05.001>.
- Chan, K. L. (2013). Victimization and poly-victimization among school-aged Chinese adolescents: Prevalence and associations with health. *Preventive Medicine*, 56(3–4), 207–210. <http://dx.doi.org/10.1016/j.ypmed.2012.12.018>.
- Collin-Vézina, D., Coleman, K., Milne, L., Sell, J., & Daigneault, I. (2011). Trauma experiences, maltreatment-related impairments, and resilience among child welfare youth in residential care. *International Journal of Mental Health and Addiction*, 9(5), 577–589. <http://dx.doi.org/10.1007/s11469-011-9323-8>.
- Cyr, K., Chamberland, C., Lessard, G., Clément, M. E., Wemmers, J. A., Collin-Vézina, D., ... Damant, D. (2012). Polyvictimization in a child welfare sample of children and youths. *Psychology of Violence*, 2(4), 385–400. <http://dx.doi.org/10.1037/a0028040>.
- Cyr, K., Clément, M.-E., & Chamberland, C. (2013). Lifetime prevalence of multiple victimizations and its impact on children's mental health. *Journal of Interpersonal Violence*, 29(4), 616–634. <http://dx.doi.org/10.1177/0886260513505220>.
- DuMont, K. A., Widom, C. S., & Czaja, S. J. (2007). Predictors of resilience in abused and neglected children grown-up: The role of individual and neighborhood characteristics. *Child Abuse & Neglect*, 31(3), 255–274. <http://dx.doi.org/10.1016/j.chiabu.2005.11.015>.
- Dutton, M. A., & Greene, R. (2010). Resilience and crime victimization. *Journal of Traumatic Stress*, 23(2), 215–222. <http://dx.doi.org/10.1002/jts.20510>.

- Ellonen, N., & Pösö, T. (2011). Violence experiences in care: some methodological remarks based on Finnish child victim survey. *Child Abuse Review*, 20(3), 197–212. <http://dx.doi.org/10.1002/car.1181>.
- Euser, E. M., Van Ijzendoorn, M. H., Prinzie, P., & Bakermans-Kranenburg, M. J. (2011). Elevated child maltreatment rates in immigrant families and the role of socioeconomic differences. *Child Maltreatment*, 16(1), 63–73. <http://dx.doi.org/10.1177/1077559510385842>.
- Finkelhor, D., Hamby, S. L., Ormrod, R., & Turner, H. (2005). The juvenile victimization questionnaire: Reliability, validity, and national norms. *Child Abuse & Neglect*, 29, 383–412. <http://dx.doi.org/10.1016/j.chiabu.2004.11.001>.
- Finkelhor, D., Ormrod, R. K., & Turner, H. A. (2009). Lifetime assessment of poly-victimization in a national sample of children and youth. *Child Abuse & Neglect*, 33, 403–411. <http://dx.doi.org/10.1016/j.chiabu.2008.09.012>.
- Ford, J. D., Elhai, J. D., Connor, D. F., & Frueh, B. C. (2010). Poly-victimization and risk of posttraumatic, depressive, and substance use disorders and involvement in delinquency in a national sample of adolescents. *Journal of Adolescent Health*, 46(6), 545–552. <http://dx.doi.org/10.1016/j.jadohealth.2009.11.212>.
- Gartland, D., Bond, L., Olsson, C. A., Buzwell, S., & Sawyer, S. M. (2006). *Adolescent Resilience questionnaire*. Melbourne, Australia: Centre for Adolescent Health, Royal Children's Hospital [Retrieved from www.ahda.org/downloads/ISSBD2006Gartland.pdf].
- Gartland, D., Bond, L., Olsson, C. A., Buzwell, S., & Sawyer, S. M. (2011). Development of a multi-dimensional measure of resilience in adolescents: The adolescent resilience questionnaire. *BMC Medical Research Methodology*, 11(134), 1–10. <http://dx.doi.org/10.1186/1471-2288-11-134>.
- Greger, H. K., Myhre, A. K., Lydersen, S., & Jozefiak, T. (2015). Previous maltreatment and present mental health in high-risk adolescent population. *Child Abuse & Neglect*, 45, 122–134. <http://dx.doi.org/10.1016/j.chiabu.2015.05.003>.
- Grills, A. E., & Ollendick, T. H. (2002). Peer victimization, global self-worth, and anxiety in middle school children. *Journal of Clinical Child and Adolescent Psychology*, 31(1), 59–68. <http://dx.doi.org/10.1207/s153744202753441675>.
- Grych, J. H., Hamby, S., & Banyard, V. (2015). The resilience portfolio model: Understanding healthy adaptation in victims of violence. *Psychology of Violence*, 5(4), 343–354. <http://dx.doi.org/10.1037/a0039671>.
- Guerra, C., Pereda, N., Guilera, G., & Abad, J. (2016). Internalizing symptoms and polyvictimization in a clinical sample of adolescents: The roles of social support and non-productive coping strategies. *Child Abuse & Neglect*, 54, 57–65. <http://dx.doi.org/10.1016/j.chiabu.2016.03.004>.
- Guilera, G., Pereda, N., Paños, A., & Abad, J. (2014). Assessing resilience in adolescence: The Spanish adaptation of the adolescent resilience questionnaire. *Health and Quality of Life Outcomes*, 13(1), 1–9. <http://dx.doi.org/10.1186/s12955015-0259-8>.
- Hamby, S. L., & Finkelhor, D. (2000). The victimization of children: Recommendations for assessment and instrument development. *Journal of the American Academy of Child and Adolescent Psychiatry*, 39(7), 829–840. <http://dx.doi.org/10.1097/00004583-200007000-00011>.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: Guilford Press.
- Hollingshead, A. B. (1975). *Four factor index of social status*. Working paper. New Haven, CT: Yale University [Retrieved from http://www.yale.edu/sociology/yjs/yjs_fall_2011.pdf].
- Holt, M. K., & Espelage, D. L. (2005). Social support as a moderator between dating violence victimization and depression/anxiety among African American and Caucasian adolescents. *School Psychology Review*, 34(3), 309–328 [Retrieved from <https://www.questia.com/library/p137854/school-psychology-review?gclid=C06RtYfG-MQCFUTJtAodkBOAOW>].
- Holt, M. K., & Espelage, D. L. (2007). Perceived social support among bullies, victims, and bully-victims. *Journal of Youth and Adolescence*, 36(8), 984–994. <http://dx.doi.org/10.1007/s10964-006-9153-3>.
- Jaffe, S. R., Caspi, A., Moffitt, T. E., Polo-Tomás, M., & Taylor, A. (2007). Individual, family, and neighborhood factors distinguish resilient from non-resilient maltreated children: A cumulative stressors model. *Child Abuse & Neglect*, 31(3), 231–253. <http://dx.doi.org/10.1016/j.chiabu.2006.03.011>.
- Kliwer, W., Murrelle, L., Mejia, R., Torres, Y., & Angold, A. (2001). Exposure to violence against a family member and internalizing symptoms in Colombian adolescents: The protective effects of family support. *Journal of Consulting and Clinical Psychology*, 69(6), 971–982. <http://dx.doi.org/10.1037/0022-006X.69.6.971>.
- Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, 71(3), 543–562. <http://dx.doi.org/10.1111/1467-8624.00164>.
- Mann, M. M., Hosman, C. M. H., Schaalma, H. P., & de Vries, N. K. (2004). Self-esteem in a broad-spectrum approach for mental health promotion. *Health Education Research*, 19(4), 357–372. <http://dx.doi.org/10.1093/her/cyg041>.
- Pereda, N., Guilera, G., & Abad, J. (2014). Victimization and polyvictimization of Spanish children and youth: Results from a community sample. *Child Abuse & Neglect*, 38(4), 640–649. <http://dx.doi.org/10.1016/j.chiabu.2014.01.019>.
- Pereda, N., Gallardo-Pujol, D., & Guilera, G. (2016). Good practices in the assessment of victimization: The Spanish adaptation of the Juvenile Victimization Questionnaire from a causal indicators approach. *Psychology of Violence*. <http://dx.doi.org/10.1037/vio0000075>.
- Pouwelse, M., Bolman, C., Lodewijkx, H., & Spaa, M. (2011). Gender differences and social support: Mediators or moderators between peer victimization and depressive feelings? *Psychology in the Schools*, 48(8), 800–814. <http://dx.doi.org/10.1002/pits.20589>.
- Rutter, M. (2006). Implication of resilience concepts for scientific understanding. *Annals New York Academy of Sciences*, 1904, 1–12. <http://dx.doi.org/10.1196/annals.1376.002>.
- Salazar, A. M., Keller, T. E., & Courtney, M. E. (2011). Understanding social support's role in the relationship between maltreatment and depression in youth with foster care experience. *Child Maltreatment*, 16(2), 102–113. <http://dx.doi.org/10.1177/1077559511402985>.
- Salazar, A. M., Keller, T. E., Gowen, L. K., & Courtney, M. E. (2013). Trauma exposure and PTSD among older adolescents in foster care. *Social Psychiatry and Psychiatric Epidemiology*, 48(4), 545–551. <http://dx.doi.org/10.1007/s00127-012-0563-0>.
- Sanders, J., Munford, R., Liebenberg, L., & Ungar, M. (2014). Peer paradox: The tensions that peer relationships raise for vulnerable youth. *Child & Family Social Work*, 1–12. <http://dx.doi.org/10.1111/cfs.12188>.
- Sanders, J., Munford, R., Thimasarn-Anwar, T., Liebenberg, L., & Ungar, M. (2015). The role of positive youth development practices in building resilience and enhancing wellbeing for at-risk youth. *Child Abuse & Neglect*, 42, 40–53. <http://dx.doi.org/10.1016/j.chiabu.2015.02.00>.
- Segura, A., Pereda, N., Abad, J., & Guilera, G. (2015). Victimization and polyvictimization among Spanish youth protected by the child welfare system. *Children and Youth Services Review*, 59, 105–112. <http://dx.doi.org/10.1016/j.childyouth.2015.10.011>.
- Skrove, M., Roumundstad, P., & Indredavik, M. S. (2013). Resilience, lifestyle and symptoms of anxiety and depression in adolescence: The Young-HUNT study. *Social Psychiatry and Psychiatric Epidemiology*, 48(3), 407–416. <http://dx.doi.org/10.1007/s00127-012-0561-2>.
- Soler, L., Kirchner, T., Paretilla, C., & Fornis, M. (2013). Impact of poly-victimization on mental health: The mediator and/or moderator role of self-esteem. *Journal of Interpersonal Violence*, 28, 2695–2712. <http://dx.doi.org/10.1177/0886260513487989>.
- Stadler, C., Feifel, J., Rohrmann, S., Vermeiren, R., & Poustka, F. (2010). Peer-victimization and mental health problems in adolescents: Are parental and school support protective? *Child Psychiatry & Human Development*, 41(4), 371–386. <http://dx.doi.org/10.1007/s10578-010-0174-5>.
- Taussig, H. N. (2002). Risk behaviors in maltreated youth placed in foster care: A longitudinal study of protective and vulnerability factors. *Child Abuse & Neglect*, 26(11), 1179–1199. [http://dx.doi.org/10.1016/S0145-2134\(02\)00391-5](http://dx.doi.org/10.1016/S0145-2134(02)00391-5).
- Turner, H., Finkelhor, D., & Ormrod, R. (2006). The effect of lifetime on the mental health of children and adolescents. *Social Science and Medicine*, 62(1), 13–27. <http://dx.doi.org/10.1016/j.socscimed.2005.05.030>.
- Turner, H. A., Finkelhor, D., & Ormrod, R. (2010). The effects of adolescent victimization on self-concept and depressive symptoms. *Child Maltreatment*, 15(1), 76–90. <http://dx.doi.org/10.1177/1077559509349444>.
- Turner, H. A., Shattuck, A., Finkelhor, D., & Hamby, S. (2015). Effects of poly-victimization on adolescent social support, self-concept, and psychological distress. *Journal of Interpersonal Violence*, 1–26. <http://dx.doi.org/10.1177/0886260515586376>.
- United Nations Children Fund (UNICEF). (2012). *Ethical principles, dilemmas and risks in collecting data on violence against children: A review of available literature*. New York, NY: UNICEF, Statistics and Monitoring Section, Division of Policy and Strategy. Retrieved from http://www.childinfo.org/files/Childprotection_EPRDLitReview_final_lowres.pdf.
- Ungar, M. (2011). The social ecology of resilience: Addressing contextual and cultural ambiguity of a nascent construct. *American Journal of Orthopsychiatry*, 81(1), 1–17. <http://dx.doi.org/10.1111/j.1939-0025.2010.01067.x>.

- Veselska, Z., Madarasova, A., Orosova, O., Gajdosova, B., van Dijk, J. P., & Reijneveld, S. A. (2009). Self-esteem and resilience: The connection with risky behavior among adolescents. *Addictive Behaviors*, 34, 287–291. <http://dx.doi.org/10.1016/j.addbeh.2008.11.005>.
- World Medical Association (2008). WMA Declaration of Helsinki. Ethical principles for medical research involving human subjects. 59th WMA general assembly [Retrieved from <http://www.wma.net/en/30publications/10policies/b3/>].
- Wu, A. D., & Zumbo, B. D. (2008). Understanding and using mediators and moderators. *Social Indicators Research*, 87(3), 367–392. <http://dx.doi.org/10.1007/s11205-007-9143-1>.
- Ybrandt, H., & Armelius, K. (2010). Peer aggression and mental health problems. Self-esteem as a mediator. *School Psychology International*, 31(2), 146–163. <http://dx.doi.org/10.1177/0143034309352267>.
- Zubeidat, I., Fernández-Arata, C. M., Langhinrichsen-Rohling, J., Bowers, D., & O'Brien, N. (2007). Differential correlates of multi-type maltreatment among urban youth. *Child Abuse & Neglect*, 31(4), 393–415. <http://dx.doi.org/10.1016/j.chiabu.2006.09.006>.