Poly-victimization from different methodological approaches using the juvenile victimization questionnaire: Are we identifying the same victims?

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ABSTRACT

Objective: This study aims to determine whether three different methodological approaches used to assess poly-victimization that apply the Juvenile Victimization Questionnaire (JVQ; Finkelhor, Hamby, Ormrod, & Turner, 2005) identify the same group of adolescent poly-victims. *Method*: The sample con- sisted of 1,105 adolescents (590 males and 515 females), aged 12–17 years old (*M* = 14.52, *SD* = 1.76) and recruited from seven secondary schools in Spain. The JVQ was used to assess lifetime and past-year experiences of victimization. *Results*: Poly-victims were more likely to experience all types of victimization than victims, regardless of the method used. The degree of agreement between the methods for identifying poly-victimization was moderate for both timeframes, with the highest agreements being recorded between the one-above- the-mean number of victimizations and Latent Class Analysis (LCA) for lifetime, and between the top 10% and LCA for past- year victimization. *Conclusions*: Researchers and clinicians should be aware that the use of different methods to define poly-victimization may mean that different victims are identi- fied. The choice of one method or another may have important implications. In consequence, focusing on how we operationa- lize poly-victimization should be a priority in the near future.

During the past 15 years, researchers have repeatedly pointed out that interpersonal experiences of violence tend to co-occur across children and adolescents' lives (Turner, Finkelhor, & Ormrod, 2006), meaning that individuals are rarely victims of an isolated type of victimization. Studies have highlighted the importance of assessing a wide range of experiences of violence rather than focusing on a single form (Finkelhor, Ormrod, & Turner, 2007), in order to provide an accurate explanation of child victimi- zation (Hamby & Grych, 2013).

Several frameworks have been designed to analyze this co-occurrence (e.g., multi-type maltreatment, see Higgins & McCabe, 2000; complex trauma, see Cook et al., 2005; polytraumatization, see Gustafsson, Nilsson, & Svedin, 2009), in attempts to assess the complexity of child and adolescent experi- ences of violence. Poly-victimization, defined as the experience of multiple types of victimization in different episodes during the course of a child's life (Finkelhor, Ormrod, Turner, & Hamby, 2005), constitutes another frame- work for addressing this phenomenon, and it seems to affect a high percen- tage of children and youth across the globe (see Chan, 2013, in China; Cyr et al., 2013, in Canada; Pereda, Guilera, & Abad, 2014, in Spain; Radford, Corral, Bradley, & Fisher, 2013, in the UK). Studies have shown that poly- victimization is higher in countries with lower income levels (Le, Holton, Romero, & Fisher, 2016), but also in children and adolescents at higher risk for victimization, such as sexual minority adolescents (Sterzing, Ratliff, Gartner, McGeough, & Johnson, 2017), adolescents with mental health issues (Álvarez- Lister, Pereda, Abad, Guilera, & the GReVIA, 2014), children cared for by child welfare systems (Cyr et al., 2012) or those involved in the juvenile justice system (Ford, Grasso, Hawke, & Chapman, 2013).

However, few instruments have tried to measure victimization experiences in childhood from a multidimensional, comprehensive perspective that includes different forms of interpersonal violence in different contexts, avoids fragmentation, and acquires the information directly from the chil- dren themselves (Hamby & Finkelhor, 2000). Some of these instruments are the Childhood Trauma Questionnaire (CTQ; Bernstein, Ahluvalia, Pogge, & Handelsman, 1997), the ICAST instruments created by the International Society for the Prevention of Child Abuse and Neglect (ISPCAN) (Zolotor et al., 2009), and the Childhood Experiences of Violence Questionnaire (CEVQ) by Walsh, MacMillan, Trocmé, Jamieson, and Boyle (2008). However, these measures focus only on experiences of maltreatment, mainly by caregivers, and therefore do not include all the possible victimization experiences a child may suffer, nor all the contexts in which these incidents may happen (Hamby & Finkelhor, 2000).

Today, most studies addressing the overlap of victimization in children's lives use the poly-victimization approach and apply the Juvenile Victimization Questionnaire (JVQ). For both lifetimes and past-year time-frames, this questionnaire offers a comprehensive assessment of five general areas of child and adolescent victimization: conventional crime, child mal-treatment, peer and sibling victimization, sexual victimization, and witnes-sing/exposure to indirect victimization. The JVQ thus gives a complete profile of child victimization (Finkelhor, Hamby, Ormrod, & Turner, 2005). However, current methodological methods to the definition of poly-victi-mization depend on the specific objectives of the research and its time period (i.e., lifetime or past year), the method used (i.e., victims above the mean, the top 10% of child victims, or clustering techniques), the version of the JVQ applied in a particular country (which may include different numbers of items and consider different victimization modules) and the characteristics of the sample (e.g., community, clinical juvenile justice, welfare). All these variables may affect the rates of prevalence recorded. This means that it is difficult to know whether all studies have identified the same at-risk group, namely poly-victims. One of the key aspects in its analysis is the time perspective we apply − that is, over the lifetime, or over the past year. Finkelhor, Ormrod, and Turner (2009) suggested that both lifetime and past-year poly-victimization have advantages and drawbacks. In this regard, they argued that focusing on past-year victimization can guide clinicians towards a more accurate assessment of victimization and can also prevent retrospective biases (Widom, Raphael, & DuMont, 2004); however, a lifetime assessment provides a more complete description of the victimization profile (Finkelhor et al., 2009).

Another key aspect is the approach used to analyze the data. Two approaches have been widely applied to assess lifetime and past year poly- victimization, using three different methods. The first approach sums the variety of victimization experiences lived by a child and focuses on the most victimized adolescents. From this approach, the first method selected chil- dren and adolescents who had experienced at least one victimization more than the mean number among the victim group as a whole (Finkelhor et al., 2005). Using this one-above-the-mean method, Finkelhor et al. (2005) con- sidered 22% of the

community sample of children interviewed to be past-year poly-victims. For the lifetimeframe, this method has also been applied in some studies, with percentages ranging from 14% to 17% (e.g., Chan, 2013; Dong, Cao, Cheng, Cui, & Li, 2013). Inside the same approach, Finkelhor et al. (2009) proposed another method of identifying poly-victims, consisting in selecting the top 10% of the community sample of children who experi- enced the highest number of victimizations, both lifetime and past-year. The JVQ lifetime poly-victimization cutoff point for the top 10% of the sample establishes poly-victimization in community samples at more than 11 (Turner, Finkelhor, & Ormrod, 2010), 12 (RadRadford et al., 2013), or 13 different types of victimization (Finkelhor et al., 2009). Finally, the second approach has used clustering methods such as traditional cluster analysis with community and high-risk samples (Álvarez-Lister et al., 2014; Holt, Finkelhor, & Kaufman, 2007) or latent class analysis (LCA) (Kretschmar, Tossone, Butcher, & Flannery, 2016; Reid & Sullivan, 2009; Turner, Shattuck, Finkelhor, & Hamby, 2016). The authors used the responses to the JVQ items (yes/no) as observed categorical variables to identify subgroups of victims with different victimization profiles or combinations of victimization experi- ences (i.e., clusters or latent classes), among which one or more groups of poly-victims are identified. Using clustering methods, the authors identified the groups who report a high mean of multiple types of victimization experiences as poly-victims.

The present study

Today, researchers apply a range of methodologies to identify the most victimized children and adolescents. This variety may prevent us from con- sistently selecting the same group of poly-victims across studies. The present study aims to identify poly-victims by applying the different approaches already used in previous studies, and then by examining whether these methods classify the same group of adolescents.

Method

Participants

The sample included 1,105 adolescents (590 males and 515 females) from 12 to 17 years old ($M = 14.52$ years, $SD = 1.76$) from Catalonia, the northeastern region of Spain. The inclusion criteria were age between 12 and 17 years old, sufficient cognitive and linguistic abilities to understand the questions in the questionnaire, and willingness to participate. Based on an adaptation of the Hollingshead Four-Factor Index (Hollingshead, 1975) the socioeconomic status of the children's families was as follows: low (1.4%), medium-low (6.2%), medium (12.2%), medium-high (31.8%), and high level (38.4%). This information was not available for 10% of the sample. The majority (94.9%) of the adolescents were born in Spain. Males and females were comparable in terms of age and socioeconomic status. However, male and female participants differed significantly ($\chi^2 = 4.751$, $p = .029$, $OR = 1.829$, 95% CI [1.05, 3.17]) in terms of their country of birth (classified as Spain vs. another country).

Procedure

The study has a cross-sectional design. Both parents and youths were informed of the nature of the project. Participation was voluntary and anonymous, and it was stressed it did not imply any disadvantage for the student. Parents or caregivers gave passive written consent in accordance with the method suggested by Carroll-Lind, Chapman, Gregory, and Maxwell (2006), and adolescent participants gave verbal assent. Two researchers trained in collecting data on child victimization (UNICEF, 2012) adminis- tered the questionnaires in a class session in early 2012. Fewer than 3% of the sample chose not to participate. This multicenter study was conducted in accordance with the basic ethical principles of the Declaration of Helsinki in Seoul (World Medical Association, 2008) and the Code of Ethics of the Catalan Psychological Association (COPC, 1989), and it was approved by the IRB of the study's home institution. No compensation was offered to participants.

Measures

Sociodemographic data sheet

Sociodemographic information on adolescents and their parents' background (age, gender, country of birth, educational level, and occupation) was gath- ered using a data sheet created for the study.

Victimization experiences – juvenile victimization questionnaire

JVQ (Finkelhor et al., 2005) is a widely used self-report instrument designed to assess 34 different types of victimization against children and adolescents. The current JVQ version was previously translated into Catalan and Spanish. Two items regarding electronic victimization were added with the authors' permission in 2009, and later included in the revised version of the JVQ. The instrument collects information about multiple types of victimizations, including six modules: conventional crime (nine items), caregiver victimiza- tion (four items), victimization by peers and siblings (six items), sexual victimization (six items), witnessing and indirect victimization (nine items), and electronic victimization (two items). For each item, the presence or absence of the victimization experience was scored as 1 or 0 respectively. The original version of this instrument has shown good psychometric prop- erties (Finkelhor et al., 2005), and its Spanish/Catalan adaptation also pre- sents adequate validity (Pereda, Gallardo-Pujol, & Guilera, 2016).

Data analysis

First, we computed the total number of victimizations (out of 36 items) for each participant in the lifetime and past-year timeframe (Finkelhor et al., 2005). Then, we identified poly-victim groups for both timeframes by using the two different approaches reported in the scientific literature: (a) method 1: the one-above-the-mean number of different types of victimization experienced in the victim group as a whole; (b) method 2: based on the 10% of the sample who experienced the highest number of victimizations; and (c) method 3: using LCA, the clustering analysis recommended when the sample size is

large. The R package poLCA (Linzer & Lewis, 2011) was used in the LCA. The appropriate number of classes and relative model fit was determined using the Bayesian information criterion (BIC) and the Akaike information criterion (AIC). The lowest BIC and AIC values indi- cate the optimal number of classes and better fit. As different initial parameter values may lead to different local maxima of the log-likelihood function, the model was run several times using the class-conditional response probabilities as the initial values for the estimation algorithm. SPSS v.21 was used for the remaining data analyses, with the level of statistical significance being set at $p < .05$.

Once the groups were obtained, the chi-square test (χ^2) was used to compare victims and poly-victims within each method in terms of lifetime and past-year rates of victimization modules, and then odds ratios (*OR*) were calculated to obtain the strength of association. The *OR* was considered statistically signifi- cant when its 95% confidence interval (CI) did not include the value 1, and was interpreted as follows: values above 1 indicated a higher prevalence of the specific victimization module among poly-victims, while values below 1 indi- cated a higher prevalence among victims. In addition, the Mann Whitney *U* test was used to compare victims and poly-victims for each method in terms of the mean number of lifetime and past-year victimizations.

In order to describe differences between youth who are identified by the analytical methods and those who are not, three groups of lifetime poly- victims were created: (a) poly-victims identified only by the top 10% approach, $n = 89$; (b) poly-victims identified solely by the LCA, excluding those poly-victims selected for the top 10% method, $n = 113$; and (c) poly- victims identified solely by the one-above-the-mean method excluding the top 10% and LCA, $n = 100$. The chi-square test (χ^2), the Fisher's exact test and the Kruskal-Wallis test were performed to compare sociodemographic variables among these groups. Analyses were also run for the past-year poly- victimization.

Finally, Cohen's κ was used to test the degree of agreement between pairs of methods. The mean value of agreement from all the pairs was obtained based on Hallgren (2012). Values were interpreted according to Viera and Garrett (2005) criteria.

Results

Descriptive analysis and group composition for each lifetime and past-year poly-victimization approach

Nine hundred and sixteen participants had experienced at least one type of victimization in their lifetime; thus 83% were lifetime victims. Seven hundred and fifty-seven adolescents (68.6%) reported at least one victimization experi- ence during the past year and were classified as past-year victims.
Based on these groups, poly-victims were identified using three differ- ent methods (see lifetime poly-victims, Figure 1, and past-year poly- victims, Figure 2). The first method defined poly-victims as those who had suffered one above the mean number of types of victimization experienced by the victim group during their lifetime (*M* = 3.85, *SD* = 2.73) and the past

year (M = 2.86, SD = 2.19). With this method, five and four types of victimization were the thresholds applied respec- tively. Two hundred and ninety-eight adolescents (27.0%) were defined as lifetime poly-victims; while 212 (19.2%) were considered past-year poly- victims. The second method was based on the 10% of the sample who experienced the highest number of victimizations. Cut-off points of eight and six types of victimization for lifetime and the past year, respectively, were used. Thus, 89 (8.1%) of the adolescents were identified as lifetime
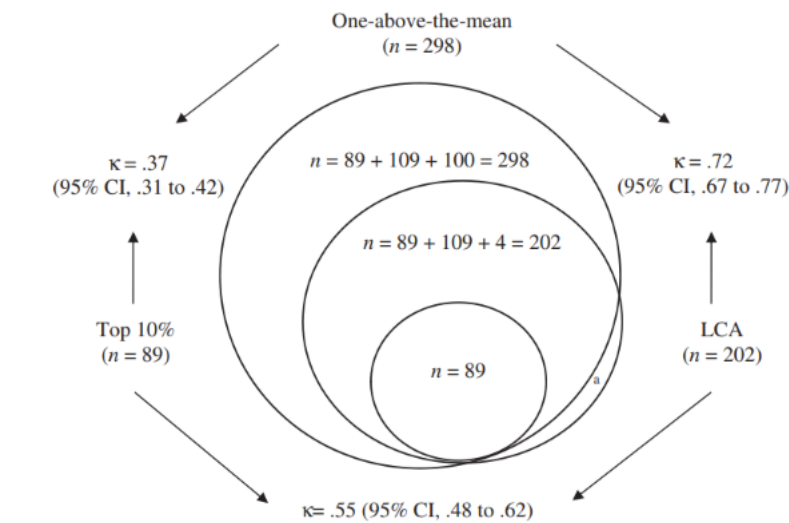
One-above-the-mean
(n = 298)

κ = .37
(95% CI, .31 to .42)

n = 89 + 109 + 100 = 298

κ = .72
(95% CI, .67 to .77)

n = 89 + 109 + 4 = 202

Top 10%
(n = 89)

LCA
(n = 202)

n = 89

κ = .55 (95% CI, .48 to .62)

Figure 1. Degree of agreement between each pair of methods to assess lifetime poly-victimization. *Note.* [a]There are four poly-victim cases identified by LCA which are not selected with the other two methods.
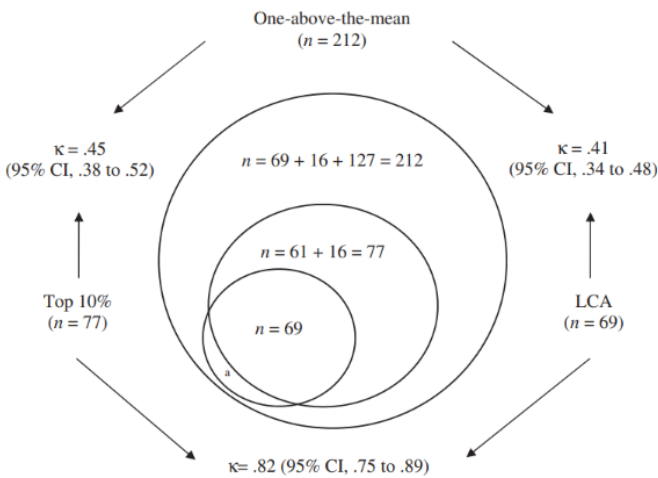
One-above-the-mean
(n = 212)

κ = .45
(95% CI, .38 to .52)

n = 69 + 16 + 127 = 212

κ = .41
(95% CI, .34 to .48)

n = 61 + 16 = 77

Top 10%
(n = 77)

LCA
(n = 69)

n = 69

κ = .82 (95% CI, .75 to .89)

poly-victims, and 77 (7%) as past-year poly-victims. As regards the third approach, the LCA identified two classes in both timeframes; 69 (6.2%) adolescents were identified as poly-victims, who experienced a mean number of 7.83 ($SD = 2.43$) past-year victimizations, and 202 (18.3%) of them were identified as lifetime poly-victims with a mean number of 7.85 lifetime victimizations ($SD = 2.42$).

In all three methodologies, both lifetime and past-year poly-victims reported higher prevalences of each type of victimization than victims (see Tables 1 and 2), mainly conventional crimes, peer and sibling victimization, and witnessing and indirect victimization. Also, poly-victims were more likely to experience each type of victimization than victims. In this regard, in all lifetime methods the highest *OR* belonged to sexual victimization (ranging from 11.34 to 19.23) and conventional crimes (44.47), and the lowest to caregiver victimization (ranging from 4.28 to 4.29) and witnessing and indirect victimization (6.05). Moreover, regarding the past year, the three methods showed the highest *OR* for peer and sibling victimization (ranging from 11.51 to 23.78) and caregiver victimization (19.05), and the lowest for electronic victimization (ranging from 4.84 to 10.03) and witnessing and indirect victimization (4.24).

Regarding the number of victimization experiences during lifetime and the past year, poly-victims presented significantly more forms of victimization than victims (see last raw in Tables 1 and 2).

Comparison between poly-victims identified by each method

Regarding the type of poly-victims identified by each method, Table 3 shows the main sociodemographic characteristics for each group of lifetime poly-victims. Poly-victims identified solely by each method were comparable in terms of sex, country of birth, socioeconomic status, and age. Results for the past year are not reported because they are similar to the ones reported for the lifetime timeframe; they are available upon request from the authors.

Degree of agreement among the different methods to define poly-victimization

Regarding the lifetime, there was a fair agreement ($\kappa = .37$) between the one-above-the-mean number of victimizations and the top 10% approaches (see Figure 1). The LCA and the top 10% approaches showed moderate agreement ($\kappa = .55$), and the one-above-the-mean and the LCA approaches substantial agreement ($\kappa = .72$). The degree of agreement between methods was computed by an average of Cohen's κ across all rater pairs, obtaining moderate agreement: $\kappa = .54$ (95% CI, .49–.61).

Table 1. Descriptive statistics (%, *M, SD, median*, and *OR*) for JVQ victimization modules were shown for each lifetime poly-victimization approach.

Victimization modules	One-above-the-mean number of victimizations			Top 10%			LCA		
	Victims (*n* = 618)	Poly-victims (*n* = 298)	Statistic	Victims (*n* = 827)	Poly-victims (*n* = 89)	Statistic	Victims (*n* = 714)	Poly-victims (*n* = 202)	Statistic
	%	%	*OR*	%	%	*OR*	%	%	*OR*
Conventional crime	64.7	93.6	8.00***	71.3	100.0	1.15***	68.8	93.1	6.10***
Caregiver victimization	16.0	60.4	8.00***	25.4	77.5	10.14***	16.7	79.2	19.05***
Peer and sibling victimization	43.7	89.9	11.51***	54.7	96.6	23.78***	49.7	90.6	9.74***
Sexual victimization	4.0	24.2	7.56***	6.9	44.9	11.03***	4.2	33.2	11.32***
Witnessing and indirect victimization	47.1	82.9	5.44***	54.9	94.4	13.80***	52.1	82.2	4.24***
Electronic victimization	8.1	29.9	4.84***	10.9	55.1	10.03***	9.5	35.1	5.15***
	M (SD)	*M (SD)*		*M (SD)*	*M (SD)*		*M (SD)*	*M (SD)*	
	Md	*Md*	*U*[a]	*Md*	*Md*	*U*[a]	*Md*	*Md*	*U*[a]
Number of victimizations	2.32 (1.10) 2.00	7.05 (2.32) 6.00	0.00***	3.20 (1.84) 3.00	9.96 (2.11) 9.00	0.00***	2.72 (1.46) 2.00	7.85 (2.42) 7.00	2532.500***

Note. [a]Significance was shown by multiple asterisks. *p* < .05, **p* < .01, ***p* < .001.

Table 2. Descriptive statistics (%, *M, SD, median*, and *OR*) for JVQ victimization modules were shown for each past-year poly-victimization approach.

	One-above-the-mean number of victimizations			Top 10%			LCA		
	Victims (*n* = 545)	Poly-victims (*n* = 212)	Statistic	Victims (*n* = 680)	Poly-victims (*n* = 77)	Statistic	Victims (*n* = 688)	Poly-victims (*n* = 69)	Statistic
Victimization modules	%	%	*OR*	%	%	*OR*	%	%	*OR*
Conventional crime	57.4	90.6	7.12***	63.1	98.7	44.47***	63.8	95.7	12.48***
Caregiver victimization	17.8	48.1	4.28***	22.6	58.4	4.80***	23.3	56.5	4.29***
Peer and sibling victimization	32.1	76.9	7.03***	39.6	89.6	13.18***	40.0	91.3	15.77***
Sexual victimization	2.4	21.7	11.34***	4.7	35.1	10.94***	4.1	44.9	19.23***
Witnessing and indirect victimization	35.8	74.5	5.25***	42.6	81.8	6.05***	43.5	78.3	4.68***
Electronic victimization	7.0	28.3	5.27***	9.9	40.3	6.17***	10.0	42.0	6.50***
	M (SD) Md	*M (SD)* Md	*U*ª	*M (SD)* Md	*M (SD)* Md	*U*ª	*M (SD)* Md	*M (SD)* Md	*U*ª
Number of victimizations	1.77 (.78) 2.00	5.64 (2.14) 5.00	.00***	2.30(1.29)2.00	7.78(2.24)7.00	.00***	2.36 (1.38) 2.00	7.83 (2.43) 7.00	522.50***

Note. ªSignificance was shown by multiple asterisks. **p* < .05, ***p* < .01, ****p* < .001.

Table 3. Comparison of sociodemographic characteristics between lifetime poly-victim groups solely identified by each analytical method.

Sociodemographic variables	Only top 10% (n = 89)	Only LCA excluding top 10% (n = 113)	Only one-above-the-mean number of victimizations excluding top 10% and LCA (n = 100)	Statistic
	%	%	%	Statistic
Sex				$\chi^2_{(2)} = 4.782$
Male	52.8	46.0	61.0	
Female	47.2	54.0	39.0	
Country of origin				Fisher's exact test = 1.479
Spain	93.3	94.7	97.0	
Other	6.7	5.3	3.0	
SES[a]				$\chi^2_{(8)} = 6.070$
Low	1.2	3.9	0.0	
Middle low	8.2	9.8	8.4	
Middle	20.0	14.7	15.8	
Middle high	36.5	33.3	37.9	
High	34.1	38.2	37.9	
	M (SD)	M (SD)	M (SD)	Kruskal Wallis H test
Age	15.17 (1.44)	14.69 (1.73)	14.76 (1.73)	$H_{(2)} = 3.893$

Note.
[a]The SES comparison between poly-victim groups excluded the missing cases (only top 10%, n = 4; only LCA excluding top 10%, n = 11; and only one-above-the-mean number of victimizations excluding top 10% and LCA, n = 5).

Moreover, considering past-year, there was a moderate agreement (κ = .41) between the one-above-the-mean number of victimizations and the LCA approaches and also the top 10% and the one-above-the-mean approaches (κ = .45) (see Figure 2). Moreover, the top 10% and the LCA approaches showed an almost perfect agreement (κ = .82. Finally, the degree of agreement between methods was again computed by an average of Cohen's κ across all rater pairs, obtaining moderate agreement: κ = .56) (95% CI, .49–.63).

Discussion

The present study has focused on the comparison of the three different methodologies that previous studies have used to identify poly-victims using the JVQ (i.e., the one-above-the-mean number of victimizations, the top 10%, and LCA). The findings underline the need for a solid and reliable method to detect these children and youth in order to be able to offer them the resources they need.

Poly-victims are more likely to experience all forms of interpersonal violence than victims, no matter the method used to define the phenomenon. This shows, once again, the close relationship between the different forms of

child victimization (Hamby & Grych, 2013), and should alert researchers to the need to use instruments that allow the assessment of a comprehensive list of violence experiences in childhood.

Poly-victims present differences with regard to the timeframe. Over the lifetime they mainly experience sexual victimization and conventional crimes, while over the past year they tend to experience more peer and sibling victimization and caregiver victimization.

Finkelhor et al. (2009) highlighted the specific influence of sexual and caregiver victimization in poly-victimization and recommended that these experiences should be weighted when using the JVQ, in view of the possibility that they might be reported with a higher frequency or chronicity and might have an important influence on the explanation of traumatic distress or on its intensity. The severity of both these experiences in child develop- ment has been confirmed in previous studies (Kendall-Tackett, 2003). Our results also show that children who suffered sexual or caregiver victimization are more prone to experiencing other victimization experiences and may have an increased risk of lifetime revictimization, as prospective studies have demonstrated (Widom, Czaja, & Dutton, 2008).

In addition, the fact that most poly-victims present a higher percentage of conventional crimes, and witnessing and indirect victimization outside the family, may be related to the frequent low self-control and risky lifestyles of adolescents (Cuevas, Finkelhor, Turner, & Ormord, 2007; Turanovic & Pratt, 2014; Vézina et al., 2011). Previous studies have found that exposure to groups, areas, and contexts with high levels of violence is similar in both victimization and offending processes (Fagan & Mazerolle, 2011; Jennings, Higgins, Tewksbury, Gover, & Piquero, 2010). Therefore, according to life- style and routine activity perspectives (Meier & Miethe, 1993), risky beha- viors in adolescence increase the likelihood of extrafamilial victimization (Burrow & Apel, 2008; Schreck, Stewart, & Osgood, 2008; Smith & Ecob, 2007). Indeed, the frequent conjunction of witnessing intrafamilial violence and child abuse has also been demonstrated (Hamby, Finkelhor, Turner, & Ormrod, 2010), as well as connections between exposure to domestic vio- lence and extrafamily victimization (Baldry, 2003).

Regarding the degree of agreement between the poly-victimization approaches, the results showed a moderate degree of consistency between the three methods used. Over the lifetime, the highest agreement was observed between the one-above-the-mean and LCA methods, whereas for identifying past-year poly-victims the highest degree of consistency was found between the top 10% and LCA methods. This suggests that they detect a similar group of adolescents. The lowest agreement obtained was between the two methods proposed by Finkelhor and colleagues (Finkelhor, Ormrod et al., 2005; Finkelhor et al., 2009) for the lifetime, and between LCA and the one-above-the-mean number of different victimization experiences during the last year.

The fact that LCA identify poly-victims by grouping their victimization profiles, while the other two methods select them by focusing on the number of victimizations, led us to hypothesize that the agreement between these approaches would be low. Overall however, taking both timeframes into account, we see that it is also quite rare to find agreement between methods based on the same approach. A possible explanation for the presence of a certain degree of disagreement between the methods may be the fact that the three methods solely identify different types of poly-victims in terms of their sociodemographic characteristics. However, results revealed that poly-victims identified or not identified by each method were comparable in terms of sex, country of birth, socioeconomic status, and age. It would be interesting to examine which poly-victims are or are not identified by each method with respect to the victimization events experienced. As seen in this paper, the relevance of the LCA method might suggest that identifying distinct profiles of poly-victimization empirically is important in addition to identifying individuals who have experienced a variety of combinations of multiple types of victimization.

Therefore, after this first research approximation, it is clear that poly-victimization researchers should continue to take into account the whole spectrum of multiple victimization experiences among children and youth. It is also clear that further research is needed to identify the best method for clinicians and researchers to use in order to select the children and adoles- cents most at risk of victimization.

Limitations

The study presents certain limitations that should be mentioned. The fact that the sample is not nationally representative should be kept in mind when interpreting the results obtained, as should the retrospective nature of the study. The lack of representativeness may explain the range and distribution of the number of victimizations observed, which in turn may determine the cut-off point obtained with the one-above-the-mean number of victimiza- tions and the top 10% approaches. It should also be borne in mind that several versions of the JVQ are available with varying numbers of items (e.g., 36 in the adaptation by Pereda et al., 2014; and 34 in the adaptation by Cyr et al., 2013). The differences in the numbers of items and in the ways of counting the victimization experiences (i.e., Separate Item, Screener Sum, Separate Incident and Reduced Item Versions, see Finkelhor et al., 2005) may have a decisive influence on the results obtained.

The use of different methods to define poly-victimization may result in the identification of different groups of poly-victims. This situation has serious implications for research and clinical practice. From a research perspective, the fact that some authors identify different kinds and different numbers of victims as poly-victims may lead to variations in the outcomes obtained related to this phenomenon. As for the clinical implications, even when the agreement between methods seems to be high, some children and adolescents may be left out of the poly-victim group and may thus be deprived of much- needed intervention. This is a particularly serious problem given the high number of violent situations they may experience (Cyr, Clément, & Chamberland, 2013). Also, experiencing at least one type of victimization makes youths more vulnerable to future victimization (Widom et al., 2008) and to the development of mental health problems (Turner et al., 2010).

There is no question that major progress has been made in developmental victimology. Perhaps it is now time to reflect upon certain questions in order to guide future advances in the field. First, when assessing the multiple experiences a child has suffered, researchers and practitioners should bear in mind that poly-victimization is a complex phenomenon that requires further analysis. They should also be aware that the use of a particular method to identify a group of poly-victims may fail to detect certain seriously victimized children. In consequence, issues, such as defining the most adequate approach or/and method to identify poly-victims or establishing the impact of using different forms of the same questionnaire (or even different questionnaires) to assess victimization should be carefully discussed. Secondly, when agreement has been reached regarding the operational definition of poly-victimization, future long-itudinal studies should explore whether the power of these approaches for predicting the consequences in later life remains similar over time.

Conclusions

This article describes a preliminary approach to the complex study of poly-victimization, for both lifetime and past-year time periods. Our results high-light the need for a method to identify poly-victims that makes it clear that we are talking about the same victims. The use of the same method for assessing poly-victimization will also allow comparisons between groups from different studies and above all to ensure that no poly-victims in need of treatment are neglected.

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References

Álvarez-Lister, M. S., Pereda, N., Abad, J., & Guilera, G.; The GReVIA. (2014). Polyvictimization and its relationship to symptoms of psychopathology in a southern European sample of adolescent outpatients. *Child Abuse & Neglect*, *38*(4), 747–756.

Baldry, A. C. (2003). Bullying in schools and exposure to domestic violence. *Child Abuse & Neglect*, *27*, 713–732. doi:10.1016/S0145-2134(03)00114-5

Bernstein, D. P., Ahluvalia, T., Pogge, D., & Handelsman, L. (1997). Validity of the childhood trauma questionnaire in an adolescent psychiatric population. *Journal of the American Academy of Child & Adolescent Psychiatry*, *36*, 340–348. doi:10.1097/00004583-199703000-00012

Burrow, J., & Apel, R. (2008). Youth behavior, school structure, and student risk of victimization. *Justice Quarterly*, *25*(2), 349–380. doi:10.1080/07418820802025181

Carroll-Lind, J., Chapman, J. W., Gregory, J., & Maxwell, G. (2006). The key to the gate keepers: Passive consent to and other ethical issues surrounding the rights of children to speak on issues that concern them. *Child Abuse & Neglect*, *30*(9), 979–989. doi:10.1016/j.chiabu.2005.11.013

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. doi:10.1016/j.ypmed.2012.12.018

Col·legi Oficial de Psicòlegs de Catalunya, COPC. (1989). *(Code of ethics) Codi deontològic*. Barcelona, Spain: Author.

Cook, A., Spinazzola, J., Ford, J., Lanktree, C., Blaustein, M., Cloitre, M, . . . Van Der Kolk, B. (2005). Complex trauma in children and adolescents. *Psychiatric Annals*, *35*, 390–398. doi:10.3928/00485713-20050501-05

Cuevas, C. A., Finkelhor, D., Turner, H. A., & Ormrod, R. K. (2007). Juvenile delinquency and victimization: A theoretical typology. *Journal of Interpersonal Violence*, *22*, 1581–1602. doi:10.1177/0886260507306498

Cyr, K., Chamberland, C., Clément, M. E., Lessard, G., Wemmers, J. A., Collin-Vézina, D., . . . Damant, D. (2013). Polyvictimization and victimization of children and youth: Results from a populational survey. *Child Abuse & Neglect*, *37*(10), 814–820. doi:10.1016/j.chiabu.2013.03.009

Cyr, K., Chamberland, C., Lessard, G., Clément, M.-È., 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. doi: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. doi:10.1177/0886260513505220

Dong, F., Cao, F., Cheng, P., Cui, N., & Li, Y. (2013). Prevalence and associated factors of poly-victimization in Chinese adolescents. *Scandinavian Journal of Psychology*, *54*, 415–422. doi:10.1111/sjop.12059

Fagan, A. A., & Mazerolle, P. (2011). Repeat offending and repeat victimization: Assessing similarities and differences in psychosocial risk factors. *Crime & Delinquency*, *57*, 732–755. doi:10.1177/0011128708321322

Finkelhor, D., Hamby, S. L., Ormrod, R., & Turner, H. (2005). The juvenile victimization questionnaire: Reliability, validity and national norms. *Child Abuse & Neglect*, *29*(4), 383–412. doi:10.1016/j.chiabu.2004.11.001

Finkelhor, D., Ormrod, R., & Turner, H. (2009). Lifetime assessment of poly-victimization in a national sample of children and youth. *Child Abuse & Neglect*, *33*(7), 403–411. doi:10.1016/j.chiabu.2008.09.012

Finkelhor, D., Ormrod, R., Turner, H., & Hamby, S. L. (2005). Measuring poly-victimization using the juvenile victimization questionnaire. *Child Abuse & Neglect*, *29*(11), 1297–1312. doi:10.1016/j.chiabu.2005.06.005

Finkelhor, D., Ormrod, R. K., & Turner, H. A. (2007). Poly-victimization: A neglected component in child victimization. *Child Abuse & Neglect*, *31*, 7–26. doi:10.1016/j.chiabu.2006.06.008

Ford, J. D., Grasso, D. J., Hawke, J., & Chapman, J. F. (2013). Poly-victimization among juvenile justice-involved youths. *Child Abuse & Neglect*, *37*, 788–800. doi:10.1016/j.chiabu.2013.01.005

Gustafsson, P. E., Nilsson, D., & Svedin, C. G. (2009). Polytraumatization and psychological symptoms in children and adolescents. *European Child & Adolescent Psychiatry*, *18*, 274–283. doi:10.1007/s00787-008-0728-2

Hallgren, K. A. (2012). Computing inter-rater reliability for observational data: An overview and tutorial. *Tutorials in Quantitative Methods for Psychology*, *8*(1), 23–34. doi:10.20982/tqmp.08.1.p023

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. doi:10.1097/00004583-200007000-00011

Hamby, S., Finkelhor, D., Turner, H., & Ormrod, R. (2010). The overlap of witnessing partner violence with child maltreatment and other victimizations in a nationally representative survey of youth. *Child Abuse & Neglect*, *34*(10), 734–741. doi:10.1016/j.chiabu.2010.03.001

Hamby, S. L., & Grych, J. (2013). *The web of violence: Exploring connections among different forms of interpersonal violence and abuse*. New York, NY: Springer. doi:10.1007/978-94-007-5596-3

Higgins, D. L., & McCabe, M. P. (2000). Multi-type maltreatment and the long-term adjustment of adults. *Child Abuse Review*, *9*(1), 6–18. doi:10.1002/(SICI)1099-0852(200001/02)9:1<6::AID-CAR579>3.0.CO;2-W

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., Finkelhor, D., & Kaufman, G. (2007). Multiple experiences of urban elementary school students: Associations with psychological functioning and academic performance. *Child Abuse & Neglect*, *31*, 503–515. doi:10.1016/j.chiabu.2006.12.006

Jennings, W. G., Higgins, G. E., Tewksbury, R., Gover, A. R., & Piquero, A. R. (2010). A longitudinal assessment of the victim-offender overlap. *Journal of Interpersonal Violence*, *25*, 2147–2174. doi:10.1177/0886260509354888

Kendall-Tackett, K. A. (2003). *Treating the lifetime health effects of childhood victimization*. Kingston, NJ: Civic Research Institute, Inc.

Kretschmar, J. M., Tossone, K., Butcher, F., & Flannery, D. J. (2016). Patterns of poly-victimization in a sample of at-risk youth. *Journal of Child & Adolescent Trauma*, 1–13. doi:10.1007/s40653-016-0109-9

Le, M. T. H., Holton, S., Romero, L., & Fisher, J. (2016). Polyvictimization among children and adolescents in low- and lower-middle-income countries: A systematic review and meta-analysis. *Trauma, Violence, and Abuse*. doi:10.1177/1524838016659489

Linzer, D. A., & Lewis, J. B. (2011). poLCA: AN R package for polytomous variable latent class analysis. *Journal of Statistical Software*, *42*(10), 1–29. doi:10.18637/jss.v042.i10

Meier, R. F., & Miethe, T. D. (1993). Understanding theories of criminal victimization. *Crime & Justice*, *17*, 459–499. doi:10.1086/449218

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*. doi:10.1037/vio0000075

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. doi:10.1016/j.chiabu.2014.01.019

Radford, L., Corral, S., Bradley, C., & Fisher, H. L. (2013). The prevalence and impact of child maltreatment and other types of victimization in the UK: Findings from a population survey of caregivers, children and young people and young adults. *Child Abuse & Neglect*, *37*(10), 801–813. doi:10.1016/j.chiabu.2013.02.004

Reid, J. A., & Sullivan, C. J. (2009). A latent class typology of juvenile victims and exploration of risk factors and outcomes of victimization. *Criminal Justice and Behavior*, *36*, 1001–1024. doi:10.1177/0093854809340621

Schreck, C. J., Stewart, E. A., & Osgood, D. W. (2008). A reappraisal of the overlap of violent offenders and victims. *Criminology; an Interdisciplinary Journal*, *46*(4), 871–906. doi:10.1111/j.1745-9125.2008.00127.x

Smith, D. J., & Ecob, R. (2007). An investigation into causal links between victimization and offending in adolescents. *The British Journal of Sociology*, *58*(4), 633–659. doi:10.1111/j.1468-4446.2007.00169.x

Sterzing, P. R., Ratliff, G. A., Gartner, R. E., McGeough, B. L., & Johnson, K. C. (2017). Social ecological correlates of polyvictimization among a national sample of transgender, genderqueer, and cisgender sexual minority adolescents. *Child Abuse & Neglect*, *67*, 1–12. doi:10.1016/j.chiabu.2017.02.017

Turanovic, J. J., & Pratt, T. C. (2014). "Can't stop, won't stop": Self-Control, risky lifestyles, and repeat victimization. *Journal of Quantitative Criminology*, *30*(1), 29–56. doi:10.1007/s10940-012-9188-4

Turner, H. A., Finkelhor, D., & Ormrod, R. (2006). The effect of lifetime victimization on the mental health of children and adolescents. *Social Science and Medicine*, *62*(1), 13–27. doi:10.1016/j.socscimed.2005.05.030

Turner, H. A., Finkelhor, D., & Ormrod, R. (2010). Poly-victimization in a national sample of children and youth. *American Journal of Preventive Medicine*, *38*, 323–330. doi:10.1016/j.amepre.2009.11.012

Turner, H. A., Shattuck, A., Finkelhor, D., & Hamby, S. (2016). Polyvictimization and youth violence exposure across contexts. *Journal of Adolescent Health*, *58*, 208–214. doi:10.1016/j.jadohealth.2015.09.021

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_EPDRCLitReview_final_lowres.pdf

Vézina, J., Hébert, M., Poulin, F., Lavoie, F., Vitaro, F., & Tremblay, R. E. (2011). Risky lifestyle as a mediator of the relationship between deviant peer affiliation and dating violence victimization among adolescent girls. *Journal of Youth and Adolescence*, *40*(7), 814–824. doi:10.1007/s10964-010-9602-x

Viera, A. J., & Garrett, J. M. (2005). Understanding interobserver agreement: The Kappa statistic. *Family Medicine*, *37*(5), 360–363. Retrieved from http://www.stfm.org/FamilyMedicine/Vol37Issue5/Viera360

Walsh, C. A., MacMillan, H. L., Trocmé, N., Jamieson, E., & Boyle, M. H. (2008). Measurement of victimization in adolescence: Development and validation of the child- hood experiences of violence questionnaire. *Child Abuse & Neglect*, *32*, 1037–1057. doi:10.1016/j.chiabu.2008.05.003

Widom, C. S., Czaja, S. J., & Dutton, M. A. (2008). Childhood victimization and lifetime revictimization. *Child Abuse & Neglect*, *32*(8), 785–796. doi:10.1016/j.chiabu.2007.12.006

Widom, C. S., Raphael, K. G., & DuMont, K. A. (2004). The case for prospective longitudinal studies in child maltreatment research: Commentary on Dube, Williamson, Thompson, Felitti, and Anda (2004). *Child Abuse & Neglect*, *28*(7), 715–722. doi:10.1016/j. chiabu.2004.03.009

World Medical Association. (2008). *WMA declaration of helsinki. Ethical principles for medical research involving human subjects*. Seoul, Republic of Korea: 59th WMA General Assembly. Retrieved from http://www.wma.net/en/30publications/10policies/b3/

Zolotor, A. J., Runyan, D. K., Dunne, M. P., Jain, D., Ramirez, C., Volkova, C., . . . Isaeva, O. (2009). ISPCAN child abuse screening tool children's version (ICAST-C): Instrument development and multi-national pilot testing. *Child Abuse & Neglect*, *33*, 833–841. doi:10.1016/j.chiabu.2009.09.004