

THE RELATIONSHIP BETWEEN INTERPERSONAL ABUSE AND DEPERSONALIZATION EXPERIENCES*

LA RELACIÓN ENTRE ABUSO INTERPERSONAL Y EXPERIENCIAS DE DESPERSONALIZACIÓN

Recibido: 30 de enero de 2018 | Aceptado: 3 de mayo de 2019

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ABSTRACT

Depersonalization is a common psychiatric symptom that remains understudied amongst Latino/Hispanic populations. There is evidence that depersonalization is relatively common among persons with a history of psychological trauma and interpersonal abuse. In this study we compared the frequency of depersonalization experiences in two groups of adults: 40 patients with a history of interpersonal abuse (HIA), and a control community group (CCG) of 40 adults without HIA. Results indicated that the patients with HIA showed significantly higher scores on the Cambridge Depersonalization Scale (CDS). Moreover, 25% of the HIA group (vs. none of the CCG) obtained a score (>70) in the CDS that suggests the presence of a Depersonalization Disorder. Furthermore, as the frequency of abusive experiences increased, the scores on the CDS concomitantly increased, in many cases to clinical levels. Consistent with other international studies, we found a significant correlation between depersonalization and depressive symptoms as measured with the Patient Health Questionnaire-9. Results are consistent with the assertion that interpersonal abuse is intricately related with depersonalization and dissociative symptoms.

KEYWORDS: Depersonalization, dissociation, trauma, interpersonal abuse.

RESUMEN

La despersonalización es un síntoma psiquiátrico común que sigue sin estudiarse entre las poblaciones de latinos/hispanos. Existe evidencia de que la despersonalización es relativamente común entre personas con antecedentes de trauma psicológico y abuso interpersonal. En este estudio comparamos la frecuencia de experiencias de despersonalización en dos grupos de adultos: 40 pacientes con historial de abuso interpersonal (HAI) y un grupo de control comunitario (GCC) de 40 adultos sin HAI. Los resultados indicaron que los pacientes con HAI obtuvieron puntajes significativamente más altos en la Escala de Despersonalización de Cambridge (CDS). Además el 25% del grupo HAI (frente a ninguno de los GCC) obtuvo una puntuación (> 70) en el CDS lo que sugiere la presencia de un trastorno de despersonalización. Encontramos que a medida que aumentaba la frecuencia de experiencias abusivas, los puntajes en el CDS aumentaban concomitantemente, en muchos casos a niveles clínicos. De acuerdo con otros estudios internacionales, encontramos una correlación significativa entre la despersonalización y los síntomas depresivos medidos con el Cuestionario de Salud del Paciente (PHQ-9). Los resultados son consistentes con la afirmación de que el abuso interpersonal está íntimamente relacionado con la despersonalización y los síntomas disociativos.

PALABRAS CLAVE: Despersonalización, disociación, trauma, abuso interpersonal.

* This project was partially supported by The National Institute of Health: Award Number: HCTRECD R25MD007607 from the National Institute on Minority Health and Health Disparities. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. Correspondence concerning this article should be addressed to Michell Aponte-Soto. E-mail: maponte328@albizu.edu

A wealth of clinical and empirical evidence sustains the view that dissociative symptoms or disorders are frequent occurrences especially among individuals that encounter stressful or traumatic experiences (Martínez-Taboas, Dorahy, Sar, Middleton & Kruger, 2013; van der Hart, Nijenhuis, Steele & Brown, 2004). According to the most recent version of the Diagnostic and Statistical Manual of Mental Disorders [DSM] (American Psychiatric Association, 2013) dissociative disorders are conditions marked by a disruption in the normal integration of memory, consciousness, identity, motor control and body representation. The hallmarks of dissociation are intense and often unpredictable shifts in consciousness and the sense of self (Sierra, 2009).

One of the most common dissociative disorders is depersonalization/derealization disorder. Depersonalization is characterized by significant alterations in the experience of the self, feelings of detachment from bodily and mental processes, emotional numbing, and a breakdown of the experience of unity and identity. Despite a dearth of clinical and scientific publications until the 1990s, the last two decades have seen a surge of interest in depersonalization phenomena, as manifested in empirical (Colombetti & Ratcliffe, 2012; Michal, et al., 2016; Ross, Banik, Dedova, Mikulasková & Armour, 2018), epidemiological (Aderibigbe, Bloch & Walker, 2001; Michal, Wiltink & Subic-Wrana, 2009; Michal, et al., 2015), neurobiological (Daniels, Frewen, Theberge & Lanius, 2016; Daniels, Gaebler, Lamke & Walter, 2015; Giesbrecht, Merckelbach, Van Oorsouw & Simeon, 2010) and theoretical contributions (Sierra, 2009). Nevertheless, the majority of those studies have been conducted in Europe and North America. As depersonalization impinges on the construction of an individual self, it is an open question whether its frequency and correlates will be observed among individuals from cultures where the concept of self is understood in a collectivistic way (Sierra, 2009). In fact, in the only piece of research that directly compared individuals from a

predominantly collectivistic culture (Colombia) with two European counterpart examples (United Kingdom and Spain), depersonalization phenomena were manifested in 17.5%, 41.9% and 35.8% respectively. According to the authors, as individuals living in Colombia show a more collectivistic and less centered self, the experience of the self is more attuned to external rather than to internal proprioceptive experiences (Sierra, Gómez, Molina, Luque, Muñoz & David, 2006).

According to the DSM-5, to be classified as a disorder, the depersonalization experience should be persistent or recurrent and severe enough to cause impairment in functioning, distress or both. Additionally, the most recent version of the DSM includes a new sub-type that can be added to a diagnosis of post-traumatic stress disorder (PTSD): “with dissociative features”. The dissociated symptoms include either depersonalization or derealization (experience of unreality or distortion) in response to trauma-related cues. This new specifier has been added because individuals who exhibit a marked depersonalization reaction when confronted with traumatic events, tend to later have a high probability of developing PTSD. Also, the dissociative subtype is described as a distinct form of emotion dysregulation that involves emotional overmodulation mediated by midline prefrontal inhibition of the limbic regions (Lanius, Wolf, Miller, Frewen, Vermetten, Brand, & Spiegel, 2014).

A recent study using the Cambridge Depersonalization Scale in Puerto Rico (Aponte-Soto, Vélez-Pastrana, Martínez-Taboas and González, 2014) found that distressing depersonalization symptoms were infrequent (2%; N= 300) in a community sample. This is in accord with previous general population studies where the prevalence of depersonalization disorder is around 1% (Lee, Kwok, Hunter, Richards & Davis, 2012; Michal, et al., 2016) and distressing symptoms of depersonalization range from 0.8 to 3.8% (Hunter, Sierra & David, 2004; Michal, et al., 2009).

Evidence suggests that traumatic and abusive experiences are related to depersonalization experiences. Various types of traumatic events such as emotional abuse, negligence, physical abuse, and being a witness to interpersonal violence are found to increase risk for distressing depersonalization phenomena (Michal, et al., 2016; Michal, Beutel & Jordan, 2007; Simeon, Guralnik, Schmeidler, Sirof & Knutelska, 2001). For instance, Simeon et al (2001) found that patients with a depersonalization disorder reported more emotional abuse than their control group. Recently, Bradley, Karatzias and Coyle (2018) found that, among 109 child sexual abuse survivors, dissociative reactions were more frequent and severe among those participants that were having difficulties with their emotional regulation strategies. Results indicated that difficulties in regulating the emotions of sadness, disgust, and fear may result in more severe derealization and self-harm as coping strategies, which in turn lead to greater post-traumatic stress disorder (PTSD) severity.

In the current study we attempt to broaden existing knowledge of depersonalization by examining its frequency and correlates among two different groups of participants: a clinical sample with a history of interpersonal abuse (HIA) and a community sample without HIA. The present study broadens the empirical study of dissociative processes in Latino/Hispanic populations.

METHOD

Participants

Participants included 80 Hispanic adults who were voluntarily recruited in various clinics or community centers in San Juan, Puerto Rico. We compared 40 participants that reported a history of interpersonal abuse (HIA) with a control community group (CCG) of 40 participants without HIA. Inclusion criteria included having been born in Puerto Rico, to be aged 21-65, and to read and write in the Spanish language. The group of participants in the HIA were recruited if they reported at

least one interpersonal abusive experience, such as sexual, physical or emotional abuse. Participants in the CCG did not endorse any type of abusive interpersonal experiences in their lifetime.

Participants in the HIA were recruited by the first author (MA) in various mental health clinics located in the San Juan area. To identify if the individual reported a history of interpersonal abuse, we administered the Brief Scale of Abusive Experiences (BSAE; Martínez-Taboas & Bernal, 2000). The participants from the CCG were also recruited in various community centers in San Juan, Puerto Rico.

In general, the demographic composition of the two groups was similar, including their gender, age distribution and other variables (see Table 1). For example, in both groups, 65% of the participants were female, and their mean age was similar (38 years vs. 39 years). In the total sample ($n=80$), 52 (65%) were female and 28 (35%) were male. All participants were between 21 and 65 years of age ($M = 31.00$, $SD = 9.9$).

Instruments

Cambridge Depersonalization Scale (CDS). The CDS (Sierra & Berrios, 2000) is a 29-item questionnaire that describes different depersonalization experiences in the last six months. Each item is rated on two Likert scales for frequency and duration of the experience (range: 0–10). The global score of the scale is the arithmetic sum of all items (range: 0–290). A cut-off point of 70 has shown to yield a sensitivity of 75.5% and a specificity of 87.2% (Sierra, 2009). The CDS has evidenced to be a reliable instrument to measure depersonalization, with a good internal consistency (Cronbach's alpha 0.89) (Sierra & Berrios, 2000). The CDS has a Spanish (Molina, et al., 2006), an Italian (Fagioli, et al., 2015) and a Japanese version (Sugiura, et al., 2009). The Cronbach's alpha for the Spanish and Italian versions was .90 and .94 for the Japanese version. Recently, Aponte-Soto, et al., (2014) reported a

Cronbach's alpha of .89 for the Spanish version of the CDS, with a sample of 300 Puerto Rican community participants. In the current study, we found a Cronbach's alpha of .95.

Dissociative Experiences Scale (DES). The DES (Bernstein & Putnam, 1986) is a self-report measure that contains 28 items concerning dissociative experiences. Each item can be rated from 0 to 100, with higher scores suggesting different dissociative experiences. The DES has excellent internal consistency ($> .90$; Dubester & Braun, 1995). Martínez-Taboas (1995) translated the DES into Spanish and reported an internal consistency of .93 (Martínez-Taboas & Bernal, 2000). In the present study we obtained a Cronbach's alpha of .96. The DES has been used extensively in Puerto Rico, and has been able to differentiate patients with dissociative disorders from other psychiatric patients (Martínez-Taboas, 2005). Moreover, a factor analysis derived a subjective experiences Depersonalization/Derealization dimension from the DES (Ross, Ellason and Anderson, 1995). This factor contains eight items of the DES that are related to feelings of being unreal.

Brief Scale of Abusive Experiences (BSAE). The BSAE is a 21-item self-report measure that assesses different types of abusive interpersonal experiences (Martínez-Taboas & Bernal, 2000). The scale assesses domains consistent with emotional, sexual, physical and psychological abuse. Participants are asked to indicate the frequency of abusive experiences by circling a response of 1= never happened, 2=once or a few times, 3=sometimes, 4= often, and 5= very often. In previous studies we have categorized participant's responses to the BSAE in the following manner: No Abuse Group (the participant marked all the sentences Never Happened); Group with mild Abuse (the participant marked at least one sentence with a 2 or 3); Group with Frequent Abuse (the participant marked at least once sentence with a 4 or 5). The Cronbach's alpha in the present study was .81.

Patient Health Questionnaire-9 (PHQ-9). The PHQ-9 (Kroenke, Spitzer & Williams, 2001) was administered to assess depressive symptoms. This is a self-report instrument that contains 9 items related to depression, measured on a 4-point Likert scale ranging from 0= never, to 4= nearly daily. Scores range from 0 to 27, with 10-27 suggesting moderate/severe depressive symptoms. The PHQ-9 has good reliability (.80) with Hispanic populations, with a sensitivity to depression of 77% to 87%, and a specificity of 88% to 100% (Diez-Quevedo, Rangil, Sánchez- Planell, Kroenke & Spitzer, 2001; Wulsin, Somoza & Heck, 2002). In the present study we found an excellent internal reliability (Cronbach's alpha of .92).

Procedure

This study was approved by the Institutional Review Board (IRB) at the Carlos Albizu University, and all participants were ensured privacy and confidentiality. After the IRB approval, the first author personally visited community centers and various psychiatric clinics recruiting potential participants. The first author distributed a poster of the study, visited support groups that were located in various clinics, and explained the importance of this study to potential participants. Those participants that showed interest in the study signed the informed consent and completed the instruments. Participants were not paid for their participation.

Research design

We used a causal comparative approach to compare two groups of people who differ on organismic characteristics. Specifically, we compared a group of adult participants who reported a history of interpersonal abuse (HIA) with a comparison group of community adults without HIA (control community group, CCG). The outcome/response variables of interest included their scores on the CDS, DES, DES (DP) and PHQ-9.

Analytical plan

Absolute (n) and relative frequencies (%) were reported for all categorical variables. Contrasts for proportions of all demographic variables by history of interpersonal abuse (HIA) groups were performed via Chi square tests. Pearson (r) correlations were estimated between all response variables (scales): CDS, DES, DES (DP) and PHQ-9. Subsequently, t-tests were used for mean contrasts of CDS, DES, DES (DP) and PHQ-9 scores by HIA groups. Their effect sizes were estimated via Cohen's d. Student's t-tests were also calculated to contrast all scales between groups of mild v. frequent victimization.

We examined adjusted associations between victimization and depersonalization

(CDS) accounting for the concomitant effects of depression (PHQ-9). This regression model was adjusted for age and educational level.

An α level of < 0.05 was adopted throughout the study. All analyses were performed in STATA version 13 (StataCorp, 2013).

RESULTS

Table 1 shows all results for demographic characteristics in the sample. Individuals in the group with a history of interpersonal abuse (HIA) were significantly older ($p < 0.001$) and had a lower educational level ($p < 0.01$). The groups were equally distributed for gender. There were no significant differences on their employment status.

TABLE 1.
Sociodemographic Characteristics Contrasts by Groups Based on History of Interpersonal Abuse (HIA).

	No HIA ^a	HIA	t / χ^2	p
n	40 (50%)	40 (50%)		
Age	29.7 (6.8)	38.2 (10.8)	4.23 (78)	<0.001
Education	3 (2)	2 (2)	9.53 (1)	0.002
Gender				
Male	14 (35%)	14 (35%)	0.0 (1)	1.0
Female	26 (65%)	26 (65%)		
Employed				
Yes	21 (52.5)	29 (72.5)	3.41	0.07
No	19 (47.5)	11 (27.5)		
Sexual abuse history				
Yes	-	21 (52.5)	-	-
No	-	19 (47.5)		
BSAE severity				
None	40 (50%)	-		
Mild	-	14 (17.5)		
Frequent	-	26 (32.5)		

^aN=80

Note. BSAE= Brief Scale of Abusive Experiences

The correlations between all measures administered in the study are included in Table 2. Aside from the 0.91 correlation between the DES and its depersonalization

subscale, the correlation coefficients ranged from 0.40 to 0.73 (CDS with DES; all $p < 0.001$).

TABLE 2.
Correlations Between Depersonalization, Dissociation, Depression and Abuse Measures.

Measure	CDS ^a	DES	DES (DP)	PHQ-9	BSAE
CDS	1				
DES	.73*	1			
DES (DP)	.64*	.91*	1		
PHQ-9	.66*	.49*	.40*	1	
BSAE	.68*	.62*	.62*	.63*	1

^an=80

Note. CDS= Cambridge Depersonalization Scale, DES= Dissociative Experiences Scale, DES(DP)= Dissociative Experiences Scale, depersonalization sub-scale, PHQ-9= Patient Health Questionnaire, BSAE= Brief Scale of Abusive Experiences.

*p ≤ .001

The HIA group had significantly higher scores on all measures of dissociation (DES), depersonalization (CDS, DES-DP) and depression (PHQ-9) than the comparison

community group. The largest effect sizes were observed for the CDS and for the depression scores (Table 3).

TABLE 3.
Mean Score Contrasts on Depersonalization, Dissociation, Depression and Abuse Measures.

Measure	No HIA		HIA		t	df	r	Cohen's d
	M	SD	M	SD				
CDS	8.93	10.59	49.58	46.42	5.40*	78	.52	1.22
DES	7.86	10.76	22.79	19.70	4.21*	78	.43	.95
DES (DP)	4.13	6.33	16.32	20.12	3.66*	78	.38	.83
PHQ-9	3.23	3.75	9.65	7.30	4.95*	78	.48	1.12

Note. CDS= Cambridge Depersonalization Scale, DES= Dissociative Experiences Scale, DES(DP)= Dissociative Experiences Scale, Depersonalization Sub-scale, PHQ-9= Patient Health Questionnaire, BSAE= Brief Scale of Abusive Experiences

*p ≤ .001

Table 4 shows results for contrasts between groups based on the severity of abuse, based on BSAE, in their scores on all measures. Compared with the group with no abuse/victimization, those with mild victimization had significantly higher scores on CDS (p <0.01) and PHQ-9 (p <0.05). Those with frequent

victimization had significantly higher scores on all measures (all p <0.001). Model-based post-hoc contrasts revealed significant differences between the mild and frequent victimization groups only in terms of their depression scores (p <0.05).

TABLE 4.
Contrasts Between BSAES Severity Groups on Depersonalization, Dissociation, Depression and Abuse Measures.

Measure	Ref.	Mild (n=14)		Frequent (n=26)	
		beta	t	beta	t
CDS	-	29.4 (10.4)	2.8**	46.7 (8.4)	5.6***
DES	-	9.2 (4.9)	1.9	18.0 (4.0)	4.6***
DES (DP)	-	6.2 (4.6)	1.4	15.4 (3.7)	4.2***
PHQ-9	-	3.8 (1.8)	2.2*	7.8 (1.4)	5.5***†

Note. CDS= Cambridge Depersonalization Scale, DES= Dissociative Experiences Scale, DES(DP)= Dissociative Experiences Scale, depersonalization sub-scale, PHQ-9= Patient Health Questionnaire, BSAE = Brief Scale of Abusive Experiences

***p ≤ .001

†Contrast between moderate and severe groups on PHQ-9 scores was significant: b=4.0 (1.9), t 2.1, p < 0.001

We built a model to account for the variance on CDS scores, based on demographic characteristics, history of interpersonal violence group status and depression scores. Age and educational level were not significant factors (Table 5). On the second step we entered victimization group status ($b=-35.1$ (8.8), $p < 0.001$), with an explained variance of

$R^2 = 0.29$ ($p < 0.001$). On the third step we entered PHQ-9 ($b=3.1$ (0.58), $p < 0.001$), in addition to victimization group ($b=-17.6$ (8.2), $p < 0.05$), with an explained variance of $R^2 = 0.48$ ($p < 0.001$). Depression accounted for about half of the association of HIA group status on CDS scores.

TABLE 5.
Victimization and Mental Health Model Explaining Variance on CDS Scores.

	Model 1 Beta (SE)	Model 2 Beta (SE)	Model 3 Beta (SE)
Age	0.87 (0.46)	0.19 (0.46)	0.32 (0.39)
Education	-7.4 (3.9)	-4.2 (3.6)	-0.27 (3.2)
MH	-	-35.1 (8.8)***	-17.6 (8.2)*
PHQ-9	-	-	3.1 (0.58)***
Variance explained	R^2 0.13**	R^2 0.29***	R^2 0.48***

Note. CDS= Cambridge Depersonalization Scale, DES= Dissociative Experiences Scale, DES(DP)= Dissociative Experiences Scale, depersonalization sub-scale, PHQ-9= Patient Health Questionnaire, BSAE= Brief Scale of Abusive Experiences
* $p < .05$, ** $p < .01$, *** $p < .001$

Lastly, we compared how many participants in the HIA and CCG obtained a score above 70 in the CDS, which suggest the presence of a Depersonalization Disorder. Results indicated that 25% of the HIA group, versus none of the CCG, obtained a score above 70 in the CDS.

DISCUSSION

The primary results of this study demonstrate that participants who had frequent abusive experiences demonstrated significantly elevated depersonalization experiences, as compared with a control community group that did not report interpersonal abuse. Those differences were not only based on traditional statistical tests (e.g., p values), but also on large effect sizes (Cohen's $d = .83$ to 1.22). Also of interest was the fact that 25% of the participants in the HIA obtained a score above 70 on the CDS, which is the standard cut-off point to suspect the presence of a depersonalization disorder. None of the participants in the CCG obtained a score above 70.

We also examined the relationship between varying degrees of abusive experiences (none, some, frequent) and observed that a higher frequency of abusive experiences was related to increased scores on the CDS. This suggests that with more repeated abuse in the life of an individual, depersonalization-type experiences occur with a higher frequency. These marked differences support the notion that dissociative experiences are intricately related to abuse, victimization and trauma (Dalenberg, et al., 2012; Dalenberg & Palesh, 2004; Francia-Martínez, Roca, Alvarado, Martínez-Taboas & Sayers, 2003; Littlewood, 2002; Michal, Beutel, & Jordan, 2007; Schafer, et al., 2010; Simeon, 2004). The review by Lewis-Fernández, Martínez-Taboas, Sar, Patel and Boatín (2007), in which dissociative symptoms were assessed cross-culturally, indicates that dissociation is reliably related to a variety of traumatic experiences. The recent investigation by Stein, et al. (2013) with 25,018 respondents in 16 countries in the World Health Organization World Mental Health Surveys, documented

that dissociative symptoms were present in 14.4% of respondents and were linked with high exposure of traumatic events and childhood adversities.

The findings from the current study are consistent with those reported by Simeon and colleagues (2001). They used a clinical group of patients with a depersonalization disorder and a control group, and compared the frequency of different types of traumas. They found that patients with a depersonalization disorder obtained higher scores on the Childhood Trauma Interview. Similarly, Michal, Beutel and Jordan (2007) found a significant correlation between emotional victimization and depersonalization severity. More recently, Michal, et al., (2016) found that in a group of 223 patients with depersonalization-derealization syndrome, 44.7% reported emotional abuse, 12.3% physical abuse and 6.1% sexual abuse. In this study, 58% of the patients reported at least one significant traumatic childhood experience.

It is worth noting that the psychometric properties of the Spanish version of the CDS were excellent, not only in the present study, but also in a previous one conducted recently in Puerto Rico (Aponte, et al., 2014). The Aponte et al. study, reported an internal reliability coefficient of .89. In the present one we obtained an internal reliability coefficient of .95. Also, when we compared the Mean score of the community control group of both studies, we find very similar scores (16.28 and 10.59 in the present one).

As in other studies, we found a strong correlation between dissociative experiences and depression symptoms (Hunter, Sierra, & David, 2004; Mula, Pini & Cassano, 2007). In Puerto Rico, we have found such a relationship with a group of college students (Martínez-Taboas & Bernal, 2000), psychiatric inpatients (Francia-Martínez, et al., 2003) and in an epidemiological island-wide study (Martínez-Taboas, Canino, Wang, García & Bravo, 2006). Soffer-Dudek (2014) recently

reviewed this relationship and noted that an increasing number of studies have found medium to large correlations ($r = .38$ to $.56$) between dissociation and depression. Such results have been reported for clinical and non-clinical populations. Possible reasons for the observed relationship are that depersonalization and derealization symptoms share some similarities with depression, like feelings of detachment, restricted emotional responsiveness and emotional numbing. Also, Soffer-Dudek (2014) has suggested that changes in sleep associated with depression are hypothesized to bring about depersonalization, "which might in turn fuel and strengthen changes in mood, such as emotional numbing" (p.261).

With regard to clinical implications, this study suggests that the routine ongoing evaluation of dissociative symptoms and disorders should be encouraged in those persons that report frequent and severe traumatic and abusive experiences. As dissociation and depersonalization are eminently subjective experiences, and are often under-evaluated in clinical interviews, the clinician may miss the opportunity to address such experiences and help the client to understand and manage their dissociative symptoms. For example, in the study reported by Francia-Martínez, et al. (2003) 38% of 100 psychiatric inpatients reported high scores on various dissociative measures. But, when asked if their therapists had evaluated their dissociative symptoms, only one patient informed that she had discussed her dissociative symptoms with her therapist.

The present study has several limitations. First, the participants were relatively young, female and most were employed. We do not know whether these findings would generalize to a sample comprised of men, older persons or people who are unemployed. Another limitation was that we did not use measures of other potentially traumatic events, such as natural disasters or man-made disasters. Our findings can only be generalized to interpersonal abusive experiences. Third, we

used a convenience sample, which may limit the generalizability of our results. Lastly, our data were collected exclusively by self-report. A future study should include clinician-administered measures. Replication and extension of this study with a larger sample is an essential next step.

Despite these limitations, our findings yielded several important contributions to the empirical literature on dissociative and depersonalization experiences. We present evidence that shows interpersonal abuse is intricately related with depersonalization and dissociative symptoms in an understudied population, and that frequency of abuse is related to increased symptoms. In addition, this is one of the few studies which documents that depersonalization can be reliably assessed with the CDS in a Hispanic and Spanish-speaking country. Also, these findings support previous research with the CDS in Puerto Rico in which we also produced excellent psychometric properties for this instrument. Importantly, our results document the construct validity of CDS scores as they supported our hypothesis that individuals with abuse history experiment frequent depersonalization symptoms. Our results are strikingly similar to research conducted in Puerto Rico and in other countries, which points to the fact that dissociative symptoms are an integral part of many survivors of frequent and severe abusive experiences. This has important implications for the treatment of this patient population.

Financiamiento: Esta investigación no contó con ningún tipo de financiamiento.

Conflicto de intereses: No hay conflictos de intereses, relaciones económicas o de otra naturaleza que hayan influido en la realización de este proyecto o en la preparación del artículo para su publicación.

Aprobación de la Junta Institucional Para la Protección de Seres Humanos en la Investigación: Esta investigación fue aprobada por el Comité Institucional para la

Protección de los Seres Humanos en la Investigación (CIPSHI) de la Universidad Carlos Albizu, Recinto de San Juan, Puerto Rico. El número de autorización de protocolo de investigación es: 1415-180.

Consentimiento o Asentimiento Informado: La investigación utilizó consentimiento y asentimiento informado de los participantes, ambos aprobados por el CIPSHI de la Universidad Carlos Albizu.

REFERENCES

- Aderibigbe, Y., Bloch, R., & Walker, W. (2001). Prevalence of Depersonalization Derealization Experiences in a Rural Population. *Social Psychiatry and Psychiatric Epidemiology*, 36, 63-69.
- American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders (5th ed.)*. Washington, DC: APA Publisher.
- Aponte-Soto, M. R., Vélez-Pastrana, M., Martínez-Taboas, A., & González, R. A. (2014). Psychometric Properties of the Cambridge Depersonalization Scale in Puerto Rico. *Journal of Trauma & Dissociation*, 15(3), 348-363. doi:10.1080/15299732.2013.856370
- Bernstein, E., & Putnam, F. (1986). Development, Reliability and Validity of a Dissociation Scale. *The Journal of Nervous and Mental Disease*, 174, 727-735.
- Bradley, A., Karatzias, T., & Coyle, E. (2018). Derealization and Self-harm Strategies are used to Regulate Disgust, Fear, and Sadness in Adult Survivors of Childhood Sexual Abuse. *Clinical Psychology & Psychotherapy*, 26, 94-104.
- Colombetti, G., & Ratcliffe, M. (2012). Bodily Feeling in Depersonalization: A Phenomenological Account. *Emotion Review*, 4, 145-150.
- Dalenberg, C.J., Brand, B.L., Gleaves, D.H., Dorahy, M.J., Loewenstein, R.J., Cardeña, E... Spiegel, D. (2012). Evaluation of the Evidence for the Trauma and Fantasy Models of

- Dissociation. *Psychological Bulletin*, 138, 550-588.
- Dalenberg, C., & Palesh, O. (2004). Relationship between Child Abuse History, Trauma, and Dissociation in Russian College Students. *Child Abuse & Neglect*, 28, 461-474.
- Daniels, J. K., Frewen, P., Theberge, J., & Lanius, R. A. (2016). Structural Brain Aberrations associated with the Dissociative Subtype of Post-traumatic Stress Disorder. *Acta Psychiatrica Scandinavica*, 133, 232-240.
- Daniels, J. K., Gaebler, M., (2015). Grey Matter Alterations in Patients with Depersonalization Disorder: A Voxel-based Morphometry Study. *Journal of Psychiatry and Neuroscience*, 40, 19-27.
- Diez-Quevedo, C., Rangil, T., Sánchez-Planell, L. Kroenke, K., & Spitzer, R. (2001). Validation and Utility of the Patient Health Questionnaire in Diagnosing Mental Disorders in 1003 General Hospital Spanish Inpatients. *Psychosomatic Medicine*, 63, 679-686.
- Dubester, K., & Braun, B. (1995). Psychometric Properties of the Dissociative Experiences Scale. *Journal of Nervous and Mental Disease*, 183(4), 231-235.
- Fleming, J., Mullen, P., Sibthorpe, B., & Bammer, G. (1999). The Long-term Impact of Childhood Sexual Abuse in Australian Women. *Child Abuse and Neglect*, 23(2), 145-159.
- Fagioli, F., Telesforo, L., Dell'Erba, A., Consolazione, M., Migliorini, V., Patane, M.,...Fiori-Nastro, P. (2015). Depersonalization: An Exploratory Factor Analysis of the Italian Version of the Cambridge Depersonalization Scale. *Comprehensive Psychiatry*, 60, 161-167.
- Francia-Martínez, M., Roca, I., Alvarado, C., Martínez-Taboas, A., & Sayers, S. (2003). Dissociation, Depression and Trauma in Psychiatric Impatiens in Puerto Rico. *Journal of Trauma & Dissociation*, 4(4), 47-61.
- Giesbrecht, T., Merckelbach, H., van Oorsouw, K., & Simeon, D. (2010). Skin Conductance and Memory Fragmentation after Exposure to an Emotional Film in Depersonalization Disorder. *Psychiatry Research*, 177, 342-349.
- Hunter, E., Sierra, M., & David, A. (2004). The Epidemiology of Depersonalisation and Derealisation. A Systematic Review. *Social Psychiatry and Psychiatric Epidemiology*, 39, 9-18.
- Kroenke, K., Spitzer, R., & Williams, J. (2001). The PHQ-9 Validity of a Brief Depression Severity Measure. *Journal General Internal Medicine*, 16, 606-613.
- Lanius, R. A., Wolf, E. J., Miller, M. W., Frewen, P. A., Vermetten, E., Brand, B., & Spiegel, D. (2014). The Dissociative Subtype of PTSD. In M. J. Friedman, T. M. Keane, & P. A. Resick (Eds.), *Handbook of PTSD: Science and Practice* (pp. 234- 250). New York, NY, US: Guilford Press.
- Littlewood, R. (2002). *Pathologies of the West*. New York: Cornell University Press.
- Lee, W. E., Kwok, C. H., Hunter, E. C., Richards, M., & David, A. S. (2012). Prevalence and Childhood Antecedents of Depersonalization Syndrome in a UK Birth Cohort. *Social Psychiatry and Psychiatric Epidemiology*, 47, 253-261.
- Lewis-Fernández, R., Martínez-Taboas, A., & Sar, V., Patel, S., & Boatín, A. (2007). The Cross-cultural Assessment of Dissociation. In J. P. Wilson (Ed.), *Cross-cultural Assessment of Post-traumatic Stress Disorder and Trauma* (pp. 279-317). New York: Springer.
- Martínez-Taboas, A. (1995). The Use of the Dissociative Experiences Scale in Puerto Rico. *Dissociation*, 8, 13-17.
- Martínez-Taboas, A. (2005). From Obscurity to Daylight: The Study of Dissociation in Puerto Rico. In G. F. Rhoades & V. Sar (Eds.), *Trauma and Dissociation in a Cross-cultural Perspective* (pp. 271-286). New York: Haworth Press.
- Martínez-Taboas, A., & Bernal, G. (2000). Dissociation, Psychopathology, and Abusive Experiences in a Nonclinical

- Latino University Student Group. *Cultural Diversity and Ethnic Minority Psychology*, 6, 32-41.
- Martínez-Taboas, A., Canino, G., Wang, M., García, P., & Bravo, M. (2006). Prevalence and Victimization Correlates of Pathological Dissociation in a Community Sample of Youths. *Journal of Traumatic Stress*, 19(4), 439-448.
- Martínez-Taboas, A., Dorahy, M., Sar, V., Middleton, W., Kruger, C. (2013). Growing not Dwindling: International Research on the Worldwide Phenomenon of Dissociative Disorders. *Journal of Nervous and Mental Disease*, 201, 353.
- Michal, M., Adler, J., Wiltink, J., Renner, I., Tschan, R., Wolfing, K., Zwerenz, R. (2016). A Case Series of 223 Patients with Depersonalization-derealization Syndrome. *BMC Psychiatry*, 16, 203.
- Michal, M., Beutel, M., Jordan, J., (2007). Depersonalization, Mindfulness, and Childhood Trauma. *Journal of Nervous Mental Disorder*, 195, 693-696.
- Michal, M., Duven, E., Giral, S., Dreier, M., Müller, K., Adler, J., Wolfing, K. (2015). Prevalence and Correlates of Depersonalization in Students aged 12-18 years in Germany. *Social Psychiatry and Psychiatric Epidemiology*, 50, 995-1003.
- Michal, M., Wiltink, J., Subic-Wrana, C., Zwerenz, R., Tuin, I., Lichy, M., Braehler, E., Beutel, M. E. (2009). Prevalence, Correlates, and Predictors of Depersonalization Experiences in the German General Population. *Journal of Nervous and Mental Disease*, 197(7), 499-506.
- Michal, M., Wiltink, J., Subic-Wrana, C. (2009). Prevalence, Correlates and Predictors of Depersonalization Experiences in the German General Population. *Journal of Nervous and Mental Disease*, 197(7), 499-506.
- Molina, J., Martínez, J., Albert, G., Berrios, G., Sierra, M., & Luque, R. (2006). Adaptación y Validación al Castellano de la Escala de Despersonalización de Cambridge. *Actas Españolas de Psiquiatría*, 34(3), 185-192.
- Mula, M., Pini, S., & Cassano, G. B. (2007). The Neurobiology and Clinical Significance of Depersonalization in Mood and Anxiety Disorders. *Journal of Affective Disorders*, 99, 91-99.
- Ross, J., Baník, G., Dedova, M., Mikulasková, G., & Armour, C. (2018). Assessing the Structure and Meaningfulness of the Dissociative subtype of PTSD. *Social Psychiatry and Psychiatric Epidemiology*, 53, 87-97.
- Sierra, M. (2009). *Depersonalization: A New Look at a Neglected Syndrome*. New York: Cambridge University Press.
- Sierra, M., & Berrios, G. (2000). The Cambridge Depersonalisation Scale: A New Instrument for the Measurement of Depersonalisation. *Psychiatry Research*, 93, 153-164.
- Sierra, M., Gómez, J., Molina, J., Luque, R., Muñoz, J., & David, A. (2006). Depersonalization in Psychiatric Patients: A Transcultural Study. *The Journal of Nervous and Mental Disease*, 194(5), 356-361.
- Simeon, D. (2004). Depersonalisation Disorder: A Contemporary Overview. *CNS Drugs*, 18(6), 343-354.
- Simeon, D., Guralnik, O., Schmeidler, J., Sirof, B., & Knutelska, M. (2001). The Role of Childhood Interpersonal Trauma in Depersonalization Disorder. *American Journal of Psychiatry*, 158, 1027-1033.
- Soffer-Dudek, N. (2014). Dissociation and Dissociative Mechanisms in Panic Disorder, Obsessive-compulsive Disorder, and Depression: A Review and Heuristic Framework. *Psychology of Consciousness*, 1, 243-270.
- StataCorp. (2013). *Stata Statistical Software: Release 13*. College Station, TX: StataCorp LP.
- Stein, D. J., Koenen, K. C., Friedman, M. J., Hill, E., McLaughlin, K. A., Petukhola, M., ...Kessler, R. C. (2013). Dissociation in Posttraumatic Stress Disorder: Evidence from the World Mental Health

- Surveys. *Biological Psychiatry*, 73, 302-312.
- Sugiura, M., Hirose, M., Tanaka, S., Nishi, Y., Yamada, Y., & Mizuno, M. (2009). Reliability and Validity of a Japanese version of the Cambridge Depersonalization Scale as a Screening Instrument for Depersonalization Disorder. *Psychiatry and Clinical Neurosciences*, 63, 314-321.
- Van der Hart, O., Nijenhuis, E., Steele, K., & Brown, D. (2004). Trauma-related Dissociation: Conceptual Clarity Lost and Found. *Australian and New Zealand Journal of Psychiatry*, 38, 906-914.
- Wulsin, L., Somoza, E., & Heck, J. (2002). The Feasibility of using the Spanish PHQ-9 to Screen for Depression in Primary Care in Honduras. *Primary Care Companion Journal of Clinical Psychiatry*, 4(5), 191-195.