

Traumatic events and psychopathological symptoms in university students

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Abstract: A non-experimental, cross-sectional and correlational study that aims to analyze the relationship between traumatic events and psychopathological symptoms in 286 university students (76.6% women and 23.4% men) between 18 and 59 years ($M = 24.03$; $SD 7.14$) by non-probabilistic convenience sampling. A large part of the sample did not present any traumatic event and those who presented them showed levels of neutral and/or negative affectation. The most frequent events are the death of a loved one, robbery or assault, divorce of the parents, nervous breakdown, school failure, rejection or failure in a relationship. The least reported events are severe or chronic illness, imprisonment or torture, loss of a child or second marriage. In general, the sample presented low scores in all the psychopathological dimensions. All the variables are related in a statistically significant way, which supports the interaction between traumatic events and various psychopathological symptoms.

Keywords: Traumatic events; psychopathological symptoms; anxiety; schizotypy; university students.

Eventos traumáticos y síntomas psicopatológicos en estudiantes universitarios

Resumen: Estudio no experimental, transversal y correlacional, que busca analizar la relación entre eventos traumáticos y síntomas psicopatológicos en 286 estudiantes universitarios (76.6% mujeres y 23.4% hombres) entre 18 y 59 años ($M = 24.03$; $DE. 7.14$) mediante muestreo por conveniencia. Gran parte de la muestra no presentó ningún evento traumático y quienes si los presentaron manifestaron niveles de afectación neutra y/o algo negativa. Los eventos más frecuentes son muerte de un ser querido, robo o asalto, divorcio de los padres, ataque de nervios, fracaso escolar, rechazo o fracaso en una relación. Los eventos menos reportados son enfermedad grave o crónica, encarcelamiento o tortura, pérdida de un hijo o segundo matrimonio. En general la muestra presentó puntuaciones bajas en todas las dimensiones psicopatológicas. Todas las variables se relacionan de manera estadísticamente significativa, con lo cual se soporta la interacción entre eventos traumáticos y diversos síntomas psicopatológicos.

Palabras Clave: Eventos traumáticos; síntomas psicopatológicos; ansiedad; esquizotipia; estudiantes universitarios.

Introduction

According to the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5, American Psychiatric Association, 2013), traumatic

events correspond to exposure to situations involving actual harm or threat to the security, integrity or life of a person, and are characterized by unusual circumstances that produce physiological alarms and defensive responses, highlighted by the strong impact they have, regardless of whether the person is directly affected or if it is a witness, especially if the event occurs to a member of the family or a loved one. These experiences have a negative impact when they overcome the individual's ability to cope, feeling emotionally, cognitively and

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physically overwhelmed (Luoni, Agosti, Crugnola, Rossi, & Termine, 2018; McLaughlin & Lambert, 2017; McLaughlin, Sheridan, & Lambert, 2014).

The characteristics of traumatic events vary according to type, chronicity, severity, timing, and assessment (Fink & Galea, 2015), and can be of two types: catastrophes of human origin (for example, war, rape, torture, murder, air or car accidents) and natural disasters (Schauer, Neuner, & Elbert, 2011). People who experience traumatic events can have mild discomfort and health recovery in a short time, however, many people experience great suffering for years, that alters mental health trajectories and increase the risk of psychopathology (Fink & Galea, 2015). In this regard Herman (1992) suggests two types of traumatic events according to their impact: Type I corresponds to those that have pathological consequences after a single exposure. And type II, which is more serious, and corresponds to repeated events over a long time. In these cases, people could anticipate that the experience will occur again, but they could not influence the moment, or escape except through the dissociation of consciousness, which leads to comorbid problems and clinical symptoms (Kira, Ashby, Odenat, & Lewandowsky, 2013; Robleset et al., 2009).

Research on the development of psychopathology has shown that the accumulation of traumatic events is often a stronger predictor than a single event, even if it is severe (Evans, Li, & Whipple, 2013; Karam et al., 2014). Epidemiological studies and clinical trials showed that the early experience of traumatic events is associated with psychopathological conditions in adulthood (Carr, Martins, Stingel, Lembruber, & Juruena, 2013; Fischer, Dölitzsch, Schmeck, Fegert, & Schmida, 2016; Keyes et al., 2012; Ordóñez-Cambolor et al., 2016), such as bipolar disorder, major depression, post-traumatic stress disorder, substance abuse, affective problems, anxiety, dissociative disorders, personality disorders, psychotic disorders, and suicide (Agorastos et al., 2014; Alvarez et al., 2011; Brietzke et al., 2012; Chu & Lieberman, 2010; Chu, Williams, Harris, Bryant, & Gatt, 2013; Falukozi & Addington, 2012; Ordóñez-Cambolor et al., 2014; Sala, Goldstein, Wang, & Blanco, 2014).

Although it is not yet clear how the traumatic events influence the mental health, research has shown that it has an important role in the vulnerability, onset, expression, and evolution of mental disorders (Houston, Shevlin, Adamson, & Murphy, 2011; Kessler et al., 2010; Varese et al., 2012). It has been suggested that traumatic experiences contribute to the development of intrusions and failures in interpretations, self-recognition and social cognition. For example, physical or sexual abuse can lead people to believe that the others are not reliable

and make paranoid interpretations of ambiguous events (Aas et al., 2012; Freeman et al., 2013). Such unusual interpretations may be developed as survival strategies in response to traumatic events, that is to say, a person sexually or physically abused may adopt hypervigilance towards the others and perceive them as threatening, as a way to minimize the risk of future abuse (Bedoya, 2015; Kleim, Ehlers, & Glucksman, 2012).

Moreover, traumatic experiences can also cause neurochemical abnormalities in the nervous system associated with subtle neurological signs, hypothalamic-pituitary axis dysregulation, decreased cortisol levels, reduced hippocampal volume and dopaminergic hyperactivity in the mesocorticolimbic system (Mccrory, De Brito, & Viding, 2011; Niwa et al., 2013). Additionally, it has been suggested that cumulative traumatic events increase psycho-somatic-sensory activation responsible for attribution errors and hallucinations, resulting from a failure to integrate perceptions with affective and cognitive representations (Daalman et al., 2012; Sheffield, Williams, Blackford, & Heckers, 2013).

On the other hand, to understand the importance of studying traumatic events as a possible risk factor for the development of psychological symptoms or disorders, it is necessary to keep in mind the hypothesis of the psychopathological continuum, which refers to the existence of a wide range or spectrum of dysfunctions that range from relative normality/health, going through subclinical deviations, until the manifest outbreak of a disorder and allows to detect subjects of the general population who share cognitive, emotional and behavioral characteristics with patients who have features, symptoms or a mental disorder (Tran The, 2018). This model suggests that the differences between health and disease are quantitative and non-qualitative, being similar at the phenotypic level and sharing etiopathogenic factors that are reflected as a psychopathological spectrum (Dell'Osso, Lorenzi, & Carpita, 2019). That is, psychopathological symptoms are distributed in the general population and constitute subtle expressions of vulnerability (Groen, Wichers, Wigman, & Hartman, 2019; Zarrella, Russolillo, Caviglia, & Perrella, 2017).

Considering the above, the present study aims to analyze the relationship between the frequency and affectation by traumatic events with the presence of psychopathological symptoms such as somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism, and schizotypy, since most trauma studies have focused on addressing types and numbers of traumatic events suffered by people with mental disorders,

however, the study of different traumatic experiences and psychological features or symptoms in the general population would provide additional information to understand their relationship with the development of psychopathology (Hagan, Sulik, & Lieberman, 2016), due to traumatic experiences can influence not only psychopathological complexity or severity but also various levels and dimensions of it (Etain et al., 2017).

Therefore, a screening of traumatic events in the general population can reveal information on the possible risk of psychopathology (Asselmann, Wittchen, Lieb, & Beesdo-Baum, 2018) avoiding complications and confusion generated by the effects of a disorder, such as hospitalization, medication, social stigma, etc., and it also allows to establish vulnerability markers for the detection, prevention, and early intervention on the development of possible future disorders associated with traumatic experiences (Lieberman, Chu, Van Horn, & Harris, 2011).

Method

Participants

286 adults of which 219 women (76.6%) and 67 men (23.4%), between 18 and 59 years ($M = 24.03$; $SD = 7.14$) being the type of sampling for convenience.

Instruments

Cumulative Trauma Scale (CTS; Kira et al., 2008; Spanish version of Robles et al., 2009). It contains 33 items that evaluate different types of traumatic events, scoring the frequency on a 5-point Likert scale (“never” to “many times”) and the intensity of affectation at a 7-point (“extremely positive” to “extremely negative”). The original version has a Cronbach’s alpha coefficient of reliability of .81 (Kira et al., 2013), and in the present study was of .77.

State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1982). It contains 40 items that assess the current level of anxiety and the person’s willingness to respond to stress. Half of the items correspond to the State subscale (how it feels at that time) and the Trait subscale (as it usually feels). It is scored on a Likert scale of 4 points (0 = “nothing” to 3 = “a lot”). The score for each subscale is 0 to 60, the higher the score, the higher the level of anxiety. For the Spanish version, internal consistency levels range between .84 and .93 (Fonseca-Pedrero, Paino, Lemos-Giráldez, & Muñiz, 2012). In the present study, Cronbach’s alpha coefficient for the total score was 0.76.

The Symptom Checklist-90- Revised (SCL-90-R; Derogatis, 1977; Spanish version of González de Rivera et al., 1989). Is composed of 90 items organized within 9 dimensions (Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism), with a Likert scale from 1 to 4 (Nothing, Very little, Pretty, Much). The Spanish version has shown a high internal consistency, varying from .81 to .90 (González de Rivera et al., 1989). In the present study, Cronbach’s alpha coefficient for the total score was .98.

Schizotypal Personality Questionnaire (SPQ; Raine, 1991; Spanish version of Fonseca-Pedrero et al., 2014). Is composed of 74 dichotomous items (Yes = 1 / No = 0). The higher the score, the greater the schizotypal symptomatology. The SPQ shows high internal consistency (Cronbach’s alpha = .83), and good test-retest reliability ($r = .83$) (Raine, 1991). In the present study, Cronbach’s alpha coefficient for the total score was .95.

Procedure

The project and request for sampling were presented to the different programs of a private university in Colombia with campus in several cities. Once the study was presented, to those who agreed to participate voluntarily were sent a link with the questionnaire in which the informed consent is found, since according to Resolution 8430 of 1993 of the Ministry of Health, the studies without risk or with a minimum risk, such as this Project, since the tests are not for diagnostic but for screening, they may not require the signature of the printed consent and the acceptance of the participant in this case is recorded in the digital questionnaire. This link contains the sociodemographic questionnaire and the scales that were answered using a computer with internet access.

Data analysis

They were carried out with the statistical package for the social sciences SPSS (version 25.0). These analyzes correspond to descriptive statistics of the sociodemographic data, scores on the scales (minimum and maximum, mean, standard deviation, frequencies and percentages). There were no missing data in any of the questionnaires. To explore whether there is a relationship between the different variables, normality tests were initially carried out to identify the type of distribution of each variable (Kolmogorov-Smirnov), finding that none presents a normal distribution so that Spearman correlations were carried out.

Results

In terms of the number of times the participants have experienced traumatic events, of the 286, the majority have never had one. The most frequent events are the death of a loved one, robbery or assault, parental divorce, nervous breakdown, school failure, rejection or failure in a relationship (all presented by almost half of the sample). The least reported events are imprisonment or torture, serious or chronic illness, loss of a child or second marriage. Although the experiences related to

sexual abuse were not very frequent in the sample, its presence in 11% is considerable. Regarding the level of affectation due to having experienced some of the traumatic events from one to several times, it is found that in the majority it ranges from neutral to something negative, however, in traumatic events such as gender discrimination within the family and the community, the degree of affectation is usually very negative. And in terms of imprisonment or torture and having been forced by a caregiver or parent to have sexual relations, extremely negative affectation occurs (See Table 1).

Table 1. Frequency and affectation of 33 traumatic events

Traumatic events	Frequency (%)		Affectation (%)	
	Never	One or more times	Neutral	Negative
1. In my life I witnessed or experienced natural disasters, for example, earthquake, hurricane, tornado, or flood	214 (74.6)	72 (25.4)	44 (15.2)	27 (9.3)
2. I have experienced life-threatening accidents, for example, motor vehicle accidents	204 (71.1)	82 (28.5)	46 (15.9)	35 (12.2)
3. I have been involved in or witnessed a war or combat	227 (79.1)	59 (20.5)	20 (6.9)	38 (13.2)
4. I have experienced sudden death of one of my parents, of close friend, or of loved ones	136 (47.4)	150 (52.2)	39 (13.5)	111 (38.7)
5. I have experienced a life-threatening or permanently disabling event for loved ones (e.g., parents, close friends)	190 (66.2)	96 (33.4)	32 (11)	63 (22)
6. I have experienced life-threatening illness or permanently disabling event (e.g., cancer, stroke, serious chronic illness, or major injury)	268 (93.4)	18 (6.2)	4 (13)	13 (4.5)
7. I have experienced robbery involving a weapon (robbed or mugged)	156 (54.4)	130 (45.3)	35 (12.1)	94 (32.8)
8. I have witnessed severe assault of acquaintance or stranger (e.g., got shot, stabbed, or severely beaten up)	222 (77.4)	64 (22.2)	21 (7.3)	42 (14.6)
9. I have been threatened to be killed or to be seriously harmed	238 (82.9)	48 (16.7)	18 (6.2)	31 (10.8)
10. I have been physically abused, pushed hard enough to cause injury, or beaten up by a caretaker, for example, by a parent	222 (77.4)	64 (22.3)	17 (5.8)	47 (16.4)
11. I have witnessed or heard one of my parents or caregivers hitting, hurting, and/or threatening to kill my other parent or caregiver	205 (71.4)	81 (28.1)	8 (2.6)	72 (25.1)
12. I was led to sexual contact by someone older than me	270 (94.1)	16 (5.4)	2 (0.7)	14 (4.8)
13. I was sexually abused, raped, or involved in unwanted sex with one or more persons	253 (88.2)	33 (11.4)	5 (1.7)	28 (9.7)
14. I have been jailed and/or tortured	284 (99.0)	2 (0.7)	0	2 (0.6)
15. My mother has abandoned or left me, or separated from me when I was young	256 (89.2)	30 (10.5)	17 (5.8)	13 (4.5)
16. My father has abandoned or left me, or separated from me when I was young	202 (70.4)	84 (29.3)	33 (11.5)	50 (17.4)
17. I was put down, threatened, or discriminated against by some others negative attitudes, stereotypes, or actions because of my ethnicity, race, culture, religion, or national origin	203 (70.7)	83 (28.9)	29 (10.1)	51 (17.7)
18. My parents went through divorce and/or separation	164 (57.1)	122 (42.4)	63 (21.9)	55 (19.2)
19. My race has history of being oppressed, discriminated against, or threatened by genocide	253 (88.2)	33 (11.5)	14 (4.8)	16 (5.5)

Table 1. Frequency and affectation of 33 traumatic events

Traumatic events	Frequency (%)		Affectation (%)	
	Never	One or more times	Neutral	Negative
20. I have experienced a nervous breakdown or felt that I was about to have one (e.g., about to lose control) due to seemingly small but recurrent or unremitting hassles or chronic stressors	135 (47.0)	151 (52.6)	23 (8)	123 (42.9)
21. At least one of my parents or siblings was involved in war, combat, or being tortured	257 (89.5)	29 (10)	12 (4.1)	15 (5.2)
22. I have experienced frequent failures in school	165 (57.5)	121 (42.2)	45 (15.7)	73 (25.5)
23. I was uprooted and forced to move from my favorite environment in town, village, or country	243 (84.7)	43 (14.9)	14 (4.7)	27 (9.4)
24. Have been physically attacked, beaten up by another stronger person or group of persons, and caused injury	237 (82.6)	49 (17)	14 (4.27)	33 (11.5)
25. I was led to sexual contact by one of my caregivers/parents	283 (98.6)	3 (1)	1 (0.3)	2 (0.7)
26. I was put down, denied my rights, or discriminated against in the society (not by family members), by some others' negative attitudes, stereotypes, or actions, or by institutions because of my gender (being a girl/woman or a boy/man).	229 (79.8)	57 (19.8)	18 (6.1)	36 (12.5)
27. I have experienced serious rejection or failure in my relationships	129 (44.9)	157 (54.6)	58 (20.3)	95 (33.1)
28. I have experienced loss of a child or spouse	272 (94.8)	14 (4.8)	4 (1.3)	10 (3.4)
29. I have experienced employment termination, been laid off, or failed in business	224 (78.0)	62 (21.6)	36 (12.4)	25 (8.6)
30. I have remarried	279 (97.2)	7 (2.4)	6 (2)	1 (0.3)
31. I have experienced being part of poor family with many hardships	242 (84.3)	44 (15.2)	31 (10.7)	12 (4.1)
32. I was put down, threatened, or discriminated against by some other family members (e.g., parents, siblings) negative attitudes, stereotypes, or actions because of my gender: being a boy or a girl	240 (83.6)	46 (16)	12 (4.1)	31 (10.7)
33. I have been discriminated against by people outside my family, institutions or community because of my gender	255 (88.9)	31 (10.7)	7 (2.4)	21 (7.2)

In general, the sample presented low frequency and affectation by traumatic events. In the state-trait anxiety scale, the original score goes up to 60, showing that the sample is located in medium-low scores. In the original SCL-90-R scale the range of somatization goes up to 48, interpersonal sensitivity up to 36, depression up to 52, anxiety up to 40, phobic anxiety up to 28, paranoid ideation up to 24 and psychoticism up to 40; therefore, the group presents low scores for each psychopathological dimension. Concerning the original SPQ scale of schizotypy, the maximum score is 74, with the group at a very low level for the total score and each subscale (See Table 2).

All variables are related in a statistically significant way. By correlating each of the scales with their respective subscales, a significant relationship ($p < .001$) was found in all of them. Among the different variables, it was found that the Anxiety State scale is not

related to any of the other variables, while Trait Anxiety correlates significantly with Frequency (.224; $p < .001$) and Affectation (.213; $p < .001$) by traumatic events, and with the other variables (See Tables 3 and 4).

Discussion

The results of the present study show that the majority of participants have never experienced traumatic events and have very few psychopathological symptoms. However, those who experienced a traumatic event even once, corresponding to around 54%, which is very similar to the 56% reported by Landolt, Schnyder, Maier, Schoenbucher, and Mohler-Kuo (2013) in a study with the general population, and close to another study with adolescents in residential care, of which 80.3% had at least one traumatic experience (Fischer et al., 2016).

Table 2. Descriptive statistics of the study variables

	Variables (subscales)	Mean	Standard deviation
Traumatic events	Frecuency	13.78	10.72
	Affectation	35.94	23.38
Anxiety	State	23.50	6.46
	Trait	24.48	6.59
Psychopathological symptoms	Somatization	10.75	10.34
	Obsessive Compulsive	11.17	9.35
	Interpersonal Sensitivity	7.50	7.30
	Depression	12.71	12.35
	Anxiety	7.74	8.31
	Hostility	3.91	4.55
	Phobic Anxiety	3.80	5.42
	Paranoid Ideation	4.55	5.09
	Psychoticism	6.19	7.36
Schizotypal personality	Ideas of Reference	2.16	2.24
	Odd Beliefs/Magical Thinking	1.05	1.44
	Excessive Social Anxiety	2.98	2.41
	Unusual Perceptual Experiences	1.65	1.96
	Odd or Eccentric Behavior	1.43	1.85
	No Close Friends	2.82	2.38
	Odd Speech	2.44	2.32
	Constricted Affect	2.47	2.06
	Suspiciousness	2.02	2.02
	Total Schizotypy	19.03	14.54

The least reported experiences were imprisonment or torture, serious or chronic illness, loss of a child or second marriage, which may be due to the type of population, since, being still so young, university students mostly have a good state of health, they have not started their marital life, and live in relatively protected environments. On the other hand, the most frequent traumatic events experienced were the death of a loved one, robbery or assault, parental divorce, nervous breakdown, school failure, rejection or failure in a relationship, similar to the study of Keyes et al. (2013), who reported in 62% of adults the presence of experiences such as assaultive violence, serious motor vehicle crash, sudden unexpected death of a close friend or relative, and the study of McLaughlin et al. (2013) reporting that at least one of five children or adolescent in the U.S. experience a traumatic event.

Regarding the level of affectation due to having experienced some traumatic event from one to several

times, it is found that in the majority it ranges from neutral to something negative, however, in traumatic events such as gender discrimination within the family and the community, the degree of affectation was very negative, and in terms of imprisonment or torture and having been forced by a caregiver or parent to have sexual relations, although these experiences were not very frequent in the sample, they generated an extremely negative affectation. In this regard, it should be noted that some traumatic events may not represent a vital threat, but they can significantly affect (Berzenski and Yates 2011), and according to what Kira et al. (2008) state, the negative evaluation of a traumatic event can be more predictive of its negative effects than the frequency in which it occurs, and the positive assessment can be more predictive of fewer symptoms.

Moreover, it is possible to suggest that the impact of traumatic events on the subclinical symptoms would depend on the intensity of the negative concepts about

Table 3. Relationship between traumatic events and trait anxiety with psychopathological and schizotypy dimensions

Psychopathological dimensions	Traumatic events		Anxiety trait
	Frequency	Affectation	
Somatization	.215**	.235**	.424**
Obsessive Compulsive	.259**	.297**	.496**
Interpersonal Sensitivity	.220**	.275**	.467**
Depression	.264**	.315**	.459**
Anxiety	.288**	.325**	.472**
Hostility	.230**	.283**	.392**
Phobic Anxiety	.149*	.196**	.442**
Paranoid Ideation	.293**	.325**	.466**
Psychoticism	.252**	.280**	.432**

Schizotypy dimensions	Traumatic Events		Anxiety trait
	Frequency	Affectation	
Ideas of Reference	.198**	.190**	.286**
Odd Beliefs/Magical Thinking	.173**	.170**	.200**
Excessive Social Anxiety	.219**	.199**	.369**
Unusual Perceptual Experiences	.274**	.290**	.314**
Odd or Eccentric Behavior	.297**	.253**	.307**
No Close Friends	.206**	.225**	.257**
Odd Speech	.299**	.259**	.326**
Constricted Affect	.205**	.207**	.232**
Suspiciousness	.242**	.256**	.353**
Total Schizotypy	.310**	.305**	.390**

** $p < .001$, * $p < .005$.

him/herself and others, which the subject has internalized. In other words, the impact of adverse experience would not be direct, but dependent on subjective psychological constructs (Bedoya, 2015), that is, negative beliefs about the self and others would imply a matrix of vulnerability for the subject to develop negative attribution responses to external causes, dysfunctional beliefs, distorted schemes and cognitive processes that could contribute to the genesis and/or maintenance of symptoms (Wilker et al., 2017). Besides, if the person that has a traumatic experience, has adequate care and support from its caregivers or social environment, the prevalence of the onset of mental illnesses is usually lower (Trickey, Siddaway, Meiser-Stedman, Serpell, & Field, 2012).

Although in the present study a statistically significant relationship was found between all the variables, which supports the initial premise of the interaction between the traumatic events and the presence of various psychopathological symptoms (Barzilay et al., 2019), low scores or no presence of them were also reported, with

which it should be borne in mind that the relationship between traumatic events and psychopathology that some have considered to be causal (Trauelsen et al., 2015; Varese et al., 2012), maybe due to adverse causality (Van Winkel, Van Nierop, Myin-Germeys, & van Os, 2013), which hypothesizes that psychopathological symptoms may already be present before exposure to the traumatic event, whereby the response to it could be influenced by the same symptoms (Seidenfaden et al., 2017).

Thus, it can be said that traumatic experiences can only explain part of the mental health risk, but psychopathological symptoms cannot be fully attributed to exposure to such events (McLaughlin & Sheridan, 2016). Furthermore, it is unlikely that the appearance of psychopathology associated with traumatic events is explained only by the occurrence or characteristics of the trauma, but that this may occur as a consequence of the complex accumulation and interaction of experiences and genetic, biological, developmental, social or environmental factors (Fink & Galea, 2015), as

Table 4. Relationship between the nine psychopathological and schizotypy dimensions

Schizotypy Dimensions	Psychopathological dimensions								
	Somatization	Obsessive Compulsive	Interpersonal Sensitivity	Depression	Anxiety	Hostility	Phobic Anxiety	Paranoid Ideation	Psychoticism
Ideas of Reference	.268**	.398**	.455**	.358**	.378**	.369**	.365**	.441**	.412**
Odd Beliefs/ Magical Thinking	.266**	.259**	.288**	.254**	.296**	.279**	.255**	.320**	.270**
Excessive Social Anxiety	.331**	.516**	.516**	.474**	.461**	.358**	.471**	.466**	.479**
Unusual Perceptual Experiences	.456**	.450**	.433**	.434**	.500**	.432**	.408**	.456**	.485**
Odd or Eccentric Behavior	.279**	.405**	.412**	.363**	.357**	.365**	.384**	.452**	.437**
No Close Friends	.339**	.450**	.447**	.447**	.404**	.401**	.393**	.461**	.458**
Odd Speech	.379**	.526**	.486**	.450**	.494**	.412**	.446**	.490**	.543**
Constricted Affect	.318**	.456**	.485**	.466**	.411**	.399**	.383**	.472**	.455**
Suspiciousness	.351**	.508**	.542**	.491**	.485**	.467**	.475**	.588**	.539**
Total Schizotypy	.426**	.589**	.595**	.550**	.554**	.501**	.518**	.604**	.600**

** $p < .001$.

McLaughlin and Lambert (2017) affirm that exposure to traumatic events can alter affective and neurobiological development, increasing the tendency to identify possible threats and magnify emotional responses to them.

The results of the present study should be interpreted with caution due to methodological limitations. First, the type of cross-sectional, retrospective and correlational design does not allow inferences about the temporal or causal relationship of the variables studied. Therefore, longitudinal designs and multivariate analyzes, with clinical and non-clinical samples, are necessary to determine whether traumatic events play a causal role in the pathway that leads to the development of psychopathological features or symptoms. Self-report questionnaires may be biased by social desirability, denial, omission or exaggeration of information, and possible difficulties in understanding or interpreting some items by participants, so it would be interesting for future research, to implement the complementary use of screening tests, external informants and/or structured interviews.

The sample was made up of university students who voluntarily participated, mostly women. It is then necessary to replicate this study in other types of samples

that are not limited only to young students since the generalization of the results is affected by a non-clinical sample. Also, having assumed psychopathological symptoms from a psychometric dimensional perspective implies that a high score does not necessarily mean that there is a diagnosis of a disorder since it has been possible to identify erroneously a tendency or psychopathological vulnerability. Despite these limitations, a correlation has been found among all the variables, consistent with previous theories and research, and is also one of the few studies carried out in the region that seek to address these variables.

To conclude, the results of the present study, although conducted with a non-clinical population, in psychotherapeutic practice can be used to understand that traumatic events can be related to the psychopathological manifestations, and thus be able to focus the interventions towards strategies that can improve the prognosis and avoid the transition from mere symptoms to a disorder. And, at the same time show where the plans and programs in prevention and promotion that seek to reduce adversity in university students should be directed (Waikamp & Barcellos Serralta, 2018; Walker et al., 2011).

Conflict of interest

The authors have no conflicts of interest to declare

References

- Aas, M., Steen, N. E., Aminoff, S. R., Lorentzen, S., Sundet, K., Andreassen, O. A., & Melle, I. (2012). Is cognitive impairment following early life stress in severe mental disorders based on specific or general cognitive functioning? *Psychiatry Research, 198*(3), 495-500. doi: 10.1016/j.psychres.2011.12.045
- Agorastos, A., Pittman, J. O., Angkaw, A. C., Nievergelt, C. M., Hansen, C. J., Aversa, L. H.,... Baker, D. G. (2014). The cumulative effect of different childhood trauma types on self-reported symptoms of adult male depression and PTSD, substance abuse and health-related quality of life in a large active-duty military cohort. *Journal of Psychiatric Research, 58*, 46-54. doi: 10.1016/j.jpsychires.014.07.014
- Alvarez, M. J., Roura, P., Oses, A., Foguet, Q., Sola, J., & Arrufat, F. X. (2011). Prevalence and clinical impact of childhood trauma in patients with severe mental disorders. *The Journal of Nervous and Mental Disease, 199*(3), 156-161. doi: 10.1097/NMD.0b013e31820c751c.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>
- Asselmann, E., Wittchen, H. U., Lieb, R., & Beesdo-Baum, K. (2018) Sociodemographic, clinical, and functional long term outcomes in adolescents and young adults with mental disorders. *Acta Psychiatrica Scandinavica 137*, 6-17. doi: 10.1111/acps.12792
- Barzilay, R., Calkins, M., Moore, T., Wolf, D., Satterthwaite, T., Cobb Scott, J., . . . Gur, R. (2019). Association between traumatic stress load, psychopathology, and cognition in the Philadelphia Neurodevelopmental Cohort. *Psychological Medicine, 49*(2), 325-334. doi:10.1017/S0033291718000880
- Bedoya, E. (2015). El estilo de apego adulto como moderador de la asociación entre trauma y experiencias pseudo-psicóticas. *Revista Estudios Sociohumanísticos. Facultad de Ciencias Sociales y Humanas, Universidad de Santander – UDES, 1*, 47-60.
- Berzenski, S. R. & Yates, T. M. (2011). Classes and consequences of multiple maltreatment: a person-centered analysis. *Child Maltreatment, 16*, 250-261. doi:10.1177/1077559511428353.
- Brietzke, E., Kauer-Sant'anna, M., Jackowski, A., Grassi-Oliveira, R., Buckner, J., Zugman, A.,... Affonseca Bressan, R. (2012). Impact of childhood stress on psychopathology. *Revista Brasileira de Psiquiatria, 34*, 480-488. doi: 10.1016/j.rbp.2012.04.009
- Carr, C. P., Martins, C. P., Stingel, A. M., Lembruber, V. B., & Jurueña, M. F. (2013). The role of early life stress in adult psychiatric disorders: A systematic review according to childhood trauma subtypes. *Journal of Nervous and Mental Disease, 201*(12), 1007-1020. doi:10.1097/NMD.0000000000000049
- Chu, A. T. & Lieberman, A. F. (2010). Clinical implications of traumatic stress from birth to age five. *Annual Review of Clinical Psychology, 6*, 469-494. doi: 10.1146/annurev.clinpsy.121208.131204.
- Chu, D. A., Williams, L. M., Harris, A.W., Bryant, R. A., & Gatt, J. M. (2013). Early life trauma predicts self-reported levels of depressive and anxiety symptoms in nonclinical community adults: Relative contributions of early life stressor types and adult trauma exposure. *Journal of Psychiatric Research, 47*(1), 23-32. doi: 10.1016/j.jpsychires.2012.08.006.
- Daalman, K., Diederer, K., Derks, E., Van Lutterveld, R., Kahn, R., & Sommer, I. (2012). Childhood trauma and auditory verbal hallucinations. *Psychological Medicine, 42*(12), 2475-2484. doi:10.1017/S0033291712000761
- Dell'Osso, L., Lorenzi, P., & Carpita, B. (2019). The neurodevelopmental continuum towards a neurodevelopmental gradient hypothesis. *Journal of Psychopathology, 25*, 179-182.
- Derogatis, L. R. (1977). *SCL-90-R: Administration, Scoring & Procedures. Manual II*. Clinical Psychometric Research.
- Etain, B., Lajnef, M., Henry, C., Aubin, V., Azorin, J. M., Bellivier, F.,...FACE-BD Clinical Coordinating Center (FondaMental Foundation). (2017). Childhood trauma, dimensions of psychopathology and the clinical expression of bipolar disorders: A pathway analysis. *Journal of Psychiatric Research, 95*, 37-45. doi: 10.1016/j.jpsychires.2017.07.013. hal-01760382
- Evans, G. W., Li, D., & Whipple, S. S. (2013). Cumulative risk and child development. *Psychological Bulletin, 139*, 1342-1396. doi: 10.1037/a0031808.
- Falukozi, E. & Addington, J. (2012). Impact of trauma on attenuated psychotic symptoms. *Psychosis, 4*(3), 203-212. Doi: 10.1080/17522439.2011.62686712
- Fink, D. S. & Galea, S. (2015). Life course epidemiology of trauma and related psychopathology in civilian populations. *Current Psychiatry Reports, 17*(5), 566. doi:10.1007/s11920-015-0566-0.
- Fischer, S., Döhlitzsch, C., Schmeck, K., Fegert, J. M., & Schmida, M. (2016). Interpersonal trauma and associated psychopathology in girls and boys living in residential care. *Children and Youth Services Review, 67*, 203-211. doi: 10.1016/j.childyouth.2016.06.013
- Fonseca-Pedrero, E., Fumero, A., Paino, M., de Miguel, A., Ortuño-Sierra, J., Lemos Giraldez, S., & Muñiz, J. (2014). Schizotypal Personality Questionnaire: New sources of validity evidence in college students. *Psychiatry Research, 219*, 214-220. doi:10.1016/j.psychres.2014.04.054
- Fonseca-Pedrero, E., Paino, M., Lemos-Giráldez, S., & Muñiz, J. (2012). Validación de la Escala para la Evaluación Comunitaria de las Experiencias Psíquicas-42 (CAPE-42) en universitarios y pacientes con psicosis. *Actas Españolas de Psiquiatria, 40*(4), 169-176.
- Freeman, D., Thompson, C., Vorontsova, N., Dunn, G., Carter, L. A., Garety, P., . . . Ehlers, A. (2013). Paranoia and posttraumatic stress disorder in the months after a physical assault: A longitudinal study examining shared and differential predictors. *Psychological Medicine, 43*, 2673-2684. doi:10.1017/S003329171300038X
- González de Rivera, J. L., Derogatis, L. R., de las Cuevas, C., Gracia Marco, R., Rodríguez-Pulido, F., Henry-Benitez, M., & Monterrey, A. L. (1989). *The Spanish version of the CSL-90-R. Normative data in the general population*. Clinical Psychometric Research, Towson.

- Groen, R. N., Wichers, M., Wigman, J. T. W., & Hartman, C. A. (2019). Specificity of psychopathology across levels of severity: a transdiagnostic network analysis. *Scientific Reports*, 9, 18298. doi: 10.1038/s41598-019-54801-y
- Hagan, M. J., Sulik, M. J., & Lieberman, A. F. (2016). Traumatic life events and psychopathology in a high risk, ethnically diverse sample of young children: A person-centered approach. *Journal of Abnormal Child Psychology*, 44, 833-844. doi: 10.1007/s10802-015-0078-8.
- Herman, J. L. (1992). *Trauma and recovery: The aftermath of violence-From domestic to political terror*. New York: Basic Books.
- Houston, J. E., Shevlin, M., Adamson, G., & Murphy, J. (2011). A person-centred approach to modelling population experiences of trauma and mental illness. *Social Psychiatry and Psychiatric Epidemiology*, 46(2), 149. doi: 10.1007/s00127-009-0176-4
- Karam, E. G., Friedman, M. J., Hill, E. D., Kessler, R. C., McLaughlin, K. A., Petukhova, M.,... Koenen, K. C. (2014). Cumulative traumas and risk thresholds: 12-month PTSD in the World Mental Health (WMH) surveys. *Depression and Anxiety*, 31(2), 130-142. https://doi.org/10.1002/da.22169
- Kessler, R., McLaughlin, K., Green, J., Gruber, M., Sampson, N., Zaslavsky, A., . . . Williams, D. (2010). Childhood adversities and adult psychopathology in the WHO World Mental Health Surveys. *British Journal of Psychiatry*, 197(5), 378-385. doi:10.1192/bjp.bp.110.080499
- Keyes, K. M., Eaton, N. R., Krueger, R. F., McLaughlin, K. A., Wall, M. M., Grant, B. F., & Hasin, D. S. (2012). Childhood maltreatment and the structure of common psychiatric disorders. *The British Journal of Psychiatry*, 200(2), 107-115. doi: 10.1192/bjp.bp.111.093062.
- Keyes, K. M., McLaughlin, K. A., Demmer, R. T., Cerda, M., Koenen, K. C., Uddin, M., & Galea, S. (2013). Potentially traumatic events and the risk of six physical health conditions in a population-based sample. *Depression and Anxiety*, 30(5), 451-460. https://doi.org/10.1002/da.22090
- Kira, I. A., Ashby, J. S., Odenat, L., & Lewandowsky, L. (2013). The mental health effects of torture trauma and its severity: A Replication and Extension. *Psychology*, 4(5), 472-482. doi:10.4236/psych.2013.45067
- Kira, I., Lewandowski, L., Templin, T., Ramaswamy, V., Ozkan, V., & Mohanesh, J. (2008). Measuring cumulative trauma dose, types, and profiles using a development-based taxonomy of traumas. *Traumatology*, 14(2), 62 - 87. doi:10.1177/1534765608319324
- Kleim, B., Ehlers, A., & Glucksman, E. (2012). Investigating cognitive pathways to psychopathology: Predicting depression and posttraumatic stress disorder from early responses after assault. *Psychological Trauma*, 4, 527-537. doi:10.1037/a0027006
- Landolt, M. A., Schnyder, U., Maier, T., Schoenbuecher, V., & Mohler-Kuo, M. (2013). Trauma exposure and posttraumatic stress disorder in adolescents: A national survey in Switzerland. *Journal of Traumatic Stress*, 26(2), 209-216. doi:10.1002/jts.21794
- Lieberman, A., Chu, A., Van Horn, P., & Harris, W. (2011). Trauma in early childhood: Empirical evidence and clinical implications. *Development and Psychopathology*, 23(2), 397-410. doi:10.1017/S0954579411000137
- Luoni, C., Agosti, M., Crugnola, S., Rossi, G., & Termine, C. (2018). Psychopathology, dissociation and somatic symptoms in adolescents who were exposed to traumatic experiences. *Frontiers in Psychology*, 9, 2390. doi: 10.3389/fpsyg.2018.02390
- Mccrory, E., De Brito, S. A., & Viding, E. (2011). The impact of childhood maltreatment: a review of neurobiological and genetic factors. *Frontiers in Psychiatry*, 2, 1-14, doi: 10.3389/fpsy.2011.00048.
- McLaughlin, K. A., Koenen, K. C., Hill, E. D., Petukhova, M., Sampson, N. A., Zaslavsky, A. M., & Kessler, R. C. (2013). Trauma exposure and posttraumatic stress disorder in a national sample of adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*, 52(8), 815-830. e14. doi: 10.1016/j.jaac.2013.05.011
- McLaughlin, K. A. & Lambert, H. K. (2017). Child trauma exposure and psychopathology: Mechanisms of risk and resilience. *Current Opinion in Psychology*, 14, 29-34. doi:10.1016/j.copsyc.2016.10.004.
- McLaughlin, K. A. & Sheridan, M. A. (2016). Beyond cumulative risk: A dimensional approach to childhood adversity. *Current Directions in Psychological Science*, 25(4), 239-245. doi: 10.1177/0963721416655883
- McLaughlin, K. A., Sheridan, M. A., & Lambert, H. K. (2014). Childhood adversity and neural development: Deprivation and threat as distinct dimensions of early experience. *Neuroscience and Biobehavioral Reviews*, 47, 578-591. doi: 10.1016/j.neubiorev.2014.10.012
- Niwa, M., Jaaro-Peled, H., Tankou, S., Seshadri, S., Hikida, T., Matsumoto, Y., ... Sawa, A. (2013). Adolescent stress-induced epigenetic control of dopaminergic neurons via glucocorticoids. *Science*, 339, 335-339. doi: 10.1126/science.1226931.
- Ordóñez-Cambor, N., Lemos-Giráldez, S., Paino, M., Fonseca-Pedrero, E., García-Álvarez, L., y Pizarro-Ruiz, J. P. (2014). Relación entre psicosis y experiencias traumáticas tempranas. *Anuario de Psicología/The UB Journal of Psychology*, 44(3), 283-294.
- Ordóñez-Cambor, N., Fonseca-Pedrero, E., Paino, M., García-Álvarez, L., Pizarro-Ruiz, J. P., y Lemos-Giráldez, S. (2016). Evaluación de experiencias traumáticas tempranas en adultos. *Papeles del Psicólogo*, 37(1), 36-44.
- Raine, A. (1991). The SPQ: A scale for the assessment of schizotypal personality based on DSM-III-R criteria. *Schizophrenia Bulletin*, 17, 555-564. doi:10.1093/schbul/17.4.555
- Robles, M. E., Badosa, J. M., Roig, A., Pina, B., & Feixas Viaplana, G. (2009). La evaluación del estrés y del trauma: Presentación de la versión española de la escala de trauma acumulativo (CTS). *Revista de Psicoterapia*, 20(80), 89-104.
- Sala, R., Goldstein, B. I., Wang, S., & Blanco, C. (2014). Childhood maltreatment and the course of bipolar disorders among adults: Epidemiologic evidence of dose response effects. *Journal of Affective Disorders*, 165, 74-80. doi: 10.1016/j.jad.2014.04.035.
- Schauer, M., Neuner, F., & Elbert, T. (2011). *Narrative Exposure Therapy. A short-term treatment for traumatic stress disorders. 2nd revised and expanded edition*. Canadá: Hogrefe. ISBN 978-0-88937-388-4

- Seidenfaden, D., Knorr, U., Greisen Soendergaard, M., Enghusen Poulsen, H., Fink-Jensen, A., Balslev Jorgensen, M., & Jorgensen, A. (2017). The relationship between self-reported childhood adversities, adulthood psychopathology and psychological stress markers in patients with schizophrenia. *Comprehensive Psychiatry*, *72*, 48-55. doi: 10.1016/j.comppsy.2016.09.009
- Sheffield, J. M., Williams, L. E., Blackford, J. U., & Heckers, S. (2013). Childhood sexual abuse increases risk of auditory hallucinations in psychotic disorders. *Comprehensive Psychiatry*, *54*, 1098-104. doi: 10.1016/j.comppsy.2013.05.013.
- Spielberger, C. D., Gorsuch, R. L., & Lushene, R. E. (1982). *Cuestionario de Ansiedad Estado/Rasgo*. Madrid: TEA.
- Tran The, J. (2018). The Continuum between Normal and Pathological in Psychopathology: Freud, Canguilhem and Neurosciences. *Research in Psychoanalysis*, *26*(2), 154-163. doi:10.3917/rep1.026.0154a.
- Trauelson, A. M., Bendall, S., Jansen, J. E., Nielsen, H. L., Pedersen, M. B., Trier, C. H.,... Simonsen, E. (2015). Childhood adversity specificity and dose-response effect in non-affective first-episode psychosis. *Schizophrenia Research*, *165*, 52-59, doi: 10.1016/j.schres.2015.03.014.
- Trickey, D., Siddaway, A. P., Meiser-Stedman, R., Serpell, L., & Field, A. P. (2012). A meta-analysis of risk factors for post-traumatic stress disorder in children and adolescents. *Clinical Psychology Review*, *32*, 122-138. doi:10.1016/j.cpr.2011.12.001
- Van Winkel, R., Van Nierop, M., Myin-Germeys, I., & van Os, J. (2013). Childhood trauma as a cause of psychosis: linking genes, psychology, and biology. *Psychiatry*, *58*, 44-51. doi: 10.1177/070674371305800109
- Varese, F., Smeets, F., Drukker, M., Lieverse, R., Lataster, T., Viechtbauer, W.,...Bentall, R. P. (2012). Childhood adversities increase the risk of psychosis: a meta-analysis of patient-control, prospective- and cross-sectional cohort studies. *Schizophrenia Bulletin*, *38*(4), 661-671. doi: 10.1093/schbul/sbs050
- Waikamp, V., & Barcellos Serralta, F. (2018). Repercussions of trauma in childhood in psychopathology of adult life. *Ciencias Psicológicas*, *12*(1), 137-144. doi: 10.22235/cp.v12i1.1603
- Walker, S. P., Wachs, T. D., Grantham-McGregor, S., Black, M. M., Nelson, C. A., Huffman, S. L.,...Richter, L. (2011). Inequality in early childhood: risk and protective factors for early child development. *Lancet*, *378*(9799), 1325-1338. doi: 10.1016/S0140-6736(11)60555-2.
- Wilker, S., Kleim, B., Geiling, A., Pfeiffer, A., Elbert, T., & Kolassa, I. T. (2017). Mental defeat and cumulative trauma experiences predict trauma-related psychopathology: Evidence from a postconflict population in Northern Uganda. *Clinical Psychological Science*, *5*(6), 974-984. doi: 10.1177/2167702617719946
- Zarrella, I., Russolillo, L. A., Caviglia, G., & Perrella, R. (2017). Continuity and discontinuity between psychopathology of childhood and adulthood: A review on retrospective and prospective studies. *Research in Psychotherapy: Psychopathology, Process and Outcome*, *20*(2), 101-109. doi: 10.4081/ripppo.2017.248