



## Validation of an events exposure questionnaire for individuals living in major cities of Argentina

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### ABSTRACT

Most of the validated 'events exposure' questionnaires are focused on lifetime burden and are hardly applicable to Argentina owing to its sociocultural and natural conditions, where corruption and economic crises have been hitting middle-class people's lives in a cyclic manner. This prompted us to develop a new questionnaire, validated in Argentina, to assess the occurrence of exposure to events and their severity over a limited period. Deductive (bibliographic search) and inductive (by a Delphi group) selection was used to create an initial group of 24 questions, which were condensed into a final 14-item questionnaire. After administration to 512 inhabitants of the metropolitan area of Buenos Aires and other major cities in Argentina, the questionnaire was shown to have an intraclass correlation coefficient of 0.996 and an internal consistency, measured by the omega coefficient, of 0.86. Because this study was conducted during the coronavirus disease 2019 (COVID-19) pandemic, an additional question on how this situation affected individuals was included. The time span used to measure event exposure was 1 year prior to the study. In the case of an affirmative event exposure, the responder selected the severity of the stress perception generated on a Likert-like scale, ranging from 0 (nothing) to 5 (severe). Fifty-eight per cent of the responders were women, and the mean age was 47.14 years (SD: 13.97). The average annual event incidence per person was 2.5 events (SD: 1.88). Thirty-two per cent (164/512) reported at least one 5-point event on the severity scale. Ten per cent (51/512) responded that the COVID-19 pandemic affected them in a different manner than events related to personal or family disease, or the death of a close family member or friend.

### Validación de un Cuestionario de Exposición a Eventos para Personas Habitantes de las principales ciudades de Argentina

La mayoría de los cuestionarios validados de 'exposición a eventos' se centran en la carga durante la vida y son difícilmente aplicables a la Argentina debido a las diferentes condiciones socioculturales y naturales, donde la corrupción y la crisis económica han estado golpeando la vida de las personas de clase media de una manera cíclica. Esto nos impulsó a desarrollar un nuevo cuestionario, validado en Argentina para evaluar la ocurrencia de exposición a eventos y su severidad en un período de tiempo determinado. Se utilizó selección deductiva (búsqueda bibliográfica) e inductiva (por un grupo Delphi) para crear un grupo inicial de 24 preguntas, que se condensaron en un cuestionario final de 14 ítems con un coeficiente de correlación intraclass de 0.996 y una consistencia interna medida por el coeficiente Omega de 0.86, luego de la administración a 512 habitantes del área metropolitana de Buenos Aires y otras ciudades importantes de Argentina. Teniendo en cuenta que este estudio se realizó durante la situación de pandemia de COVID-19, se incluyó una pregunta adicional sobre cómo esta situación afectó a las personas. El intervalo de tiempo utilizado para medir la exposición a eventos fue el último año. En caso de una exposición de evento afirmativa, el respondedor tenía que seleccionar la severidad de la percepción del estrés generado en una escala tipo Likert, que va de 0 (nada) a 5 (grave). Cincuenta y ocho por ciento de los que respondieron eran mujeres, y la edad promedio fue de 47,14 años (DE = 13,97). La incidencia anual promedio de 'eventos' por persona fue de 2.5 eventos (DE = 1.88). Treinta y dos por ciento (164/512) informaron al menos un evento de 5 puntos en la escala de severidad. Diez por ciento (51/512) respondió que la pandemia de COVID-19 los afectó de manera diferente que la relacionada con la enfermedad personal o familiar o la muerte de un familiar cercano o amigo.

### 对居住在阿根廷主要城市个体的事件暴露问卷的验证

大多数经过验证的'事件暴露'问卷都关注生活负担, 由于社会文化和自然条件不同, 腐败和经济危机都在周期性地冲击中产阶级的生活, 很难适用于阿根廷。这促使我们开发了一份新的

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### 关键词

问卷; 创伤; 应激的; 事件; 南美洲

### HIGHLIGHTS

- Stressful or potentially traumatic events in Argentina's middle class are different from those reported in other countries, which drove us to create and validate a specific 14-item event exposure questionnaire with the addition, in the current context, of a COVID-19-related question.

问卷,并在阿根廷进行了验证,以评估事件暴露的发生及其在有限时间内的严重程度。演绎(文献搜索)和归纳选择(由德尔菲组)被用来创建一个包含24个问题的初始组,被浓缩成最终的14条目问卷,其组内相关系数为0.996, Omega系数测量的内部一致性为0.86,在阿根廷布宜诺斯艾利斯大都市区和其他主要城市的512名居民。考虑到这项研究在COVID-19疫情期间进行,额外纳入了一个关于这种情况如何影响个人的问题。用于衡量事件曝光的时间跨度是一年。在肯定事件暴露的情况下,响应者必须选择在里克特量表表中产生的应激感知的严重程度,范围从0(无)到5(严重)。58%的响应者是女性,平均年龄为47.14岁(标准差:13.97)。每人平均每年的‘事件’发生率为2.5次(标准差:1.88)。32%(164/512)报告了至少一个严重程度为5分的事件。10%(51/512)表示COVID-19疫情对他们的影响与个人或家庭疾病或亲密家庭成员或朋友的死亡不同。

Several questionnaires have been developed to assess the effects of exposure to stressful or potentially traumatic events in different populations (Cochrane & Robertson, 1973; Holmes & Rahe, 1967; Laboratory for the Study of Stress, Immunity, and Disease, 2016; Sarason et al., 1978; Schnurr et al., 1999; Slavich & Shields, 2018; Spurgeon et al., 2001; Sturmbauer et al., 2019; Weathers et al., 2013). The use of such tools, however, cannot be generalized, given the significant variations in regional idiosyncrasies and socioeconomic conditions. While war and natural disasters are frequently included in most published scales, these have occurred less often in Argentina compared to other potential sources of stress or trauma directly or indirectly related to corruption, crime, cyclic economic crises, and inflation (Acemoglu & Robinson, 2012; Nino, 2005), impoverishing the middle class, exposing people to downgrading moves, robbery, bankruptcy, and job losses, among other things. We therefore developed a local questionnaire on event exposure centred on events that may potentially affect the Argentinian population over a one-year span.

A comprehensive and structured search in PubMed-MEDLINE, SciELO, and LILACS, following the PRISMA guidelines, was conducted in English, Spanish, and Portuguese, with the objective of identifying comprehensive screening questionnaires on stressful or potentially traumatic life events. No restrictions were set on publication date/status, and duplicate articles and publications covering the paediatric population were excluded. Of the 1290 articles identified in PubMed-MEDLINE, only six were ultimately selected (Cochrane & Robertson, 1973; Holmes & Rahe, 1967; Sarason et al., 1978; Slavich & Shields, 2018; Spurgeon et al., 2001; Sturmbauer et al., 2019), in addition to three web-based scales [; Schnurr et al., 1999; Weathers et al., 2013] (Supplementary Material 1).

A seven-participant Delphi group, including neurologists, psychiatrists, and physical therapists from a tertiary neurology clinic and two public major general hospitals, was created. Selected manuscripts were shared and discussed, and appropriate scale items were identified. After a second round of evaluation, each Delphi participant was asked to delete inappropriate items, and to rank those considered relevant according to the potential severity of stress/trauma

and frequency, within the context of local sociocultural and economic conditions. In this way, a deductive (literature search) and inductive (individual responses from Delphi group members) selection method was used to create an initial pool of 24 questions (Supplementary Material 2).

Responses were dichotomous, depending on the presence or absence of each event in the past year. The one-year time span was chosen with the objective of focusing on the occurrence of events over a limited period during adulthood. In the case of a positive answer, events were assigned a score from 0 (nothing) to 5 (severe) according to the stress severity perception, applying a Likert-like scale. Bearing in mind that this protocol was developed during the coronavirus disease 2019 (COVID-19) pandemic, an extra item that could be applied to current stress-related circumstances, but disassociated from standard questionnaire analysis, was added. As we expect the validity of the scale to last longer than the COVID-19 pandemic, the analysis of that specific question was performed independently without affecting the clinometric properties of the rest of the scale.

The questionnaire was sent to the Delphi group participants for corrections and drafting of the final version, and later submitted together with the study protocol for approval by our institutional review board. To evaluate intrarater validity, the questionnaire was first administered to three unselected individuals on two separate occasions, 180 days apart, after which the intraclass correlation coefficient was estimated at 0.996 (95% confidence interval 0.989–0.998).

Subsequently, 512 inhabitants from Buenos Aires and six other principal cities of different regions of Argentina completed the questionnaire electronically. The distribution list used contained people who fell into the AB, C1, and C2 social classification groups (Mora y Araujo, 2002). Of these, 58% were women, and the mean age of responders was 47.14 years (range: 17–90 years; SD: 13.97). The average annual ‘event’ incidence per person (cumulative exposure) was 2.5 events (SD: 1.88). Thirty-two per cent (164/512) reported at least one 5-point event on the severity scale including the pandemic question and 30.3% (155/512) without this question.

**Table 1.** Events ordered by frequency, severity, and relevance.

	Most frequent	Most severe	Most relevant
1.	Caregiver burden	Loss of home	Death of a relative
2.	Death of a relative	Workplace harassment	Diagnosis of severe illness in a relative
3.	Diagnosis of severe illness in a relative	Unwanted pregnancy	Caregiver burden
4.	Death of a close friend	Severe traffic accident	Death of a close friend
5.	Diagnosis of severe illness or injury	Divorce	Diagnosis of severe illness or injury
6.	Moving	Diagnosis of severe illness in a relative	Moving
7.	Family member or close friend moved abroad (migration)	Death of a relative	Family member or close friend moved abroad (migration)
8.	Bankruptcy	Job loss	Bankruptcy
9.	Severe vision and/or hearing impairment	Pet death	Divorce
10.	Divorce	Death of a close friend	Job loss
11.	Crime (robbery, theft, or kidnapping)	Pregnancy loss	Crime (robbery, theft, or kidnapping)
12.	Job loss	Caregiver burden	Severe vision and/or hearing impairment
13.	Childcare delegated to other	Prison sentence	Pet death
14.	Pet death	Infidelity	Childcare delegated to other

The internal consistency of the 24-item questionnaire, measured using McDonald's omega coefficient, was 0.92, allowing room for it to be further condensed to 14 items, selecting the most relevant events (omega coefficient 0.86) (Supplementary Material 3). **Table 1** displays the 14 events reported in the questionnaire ordered by frequency, severity, and relevance (arbitrarily defined as frequency of presentation and severity marked by the individual in the Likert-like scale). Supplementary Material 4 shows the event frequency segregated by severity distribution in each one of the 14 (and pandemic) items.

When an extra question on how the COVID-19 pandemic affected individuals, 'Has the COVID-19 pandemic been stressful or potentially traumatic, in a manner not covered by the questions answered above?', was analysed, the event ranked third on the frequency scale and ninth on the severity scale. This response was therefore analysed separately (Supplementary Material 5).

Potentially stressful events are subjective experiences that impact individuals in very different ways depending on multiple factors, including parameters of the stressor; subjective perception of the stressor linked to varying personality traits; different personal coping strategies; and environmental, sociocultural, and economic factors (Richter-Levin & Sandi, 2021). For this reason, comparisons between individuals and between populations are difficult. The same stressor can trigger an adaptive response in one individual and a non-adaptive response in another, predisposing to pathology. Traumatic events, on the other hand, are

experienced as physically and emotionally harmful or threatening, causing lasting adverse effects on physical, social, emotional, and spiritual well-being. Unlike stressful experiences, traumatic experiences induce lasting alterations, which trigger pathological change in individual responses to a variety of future experiences, compromising functional capacity, and including the possible development of post-traumatic stress disorder (PTSD). Further investigation of the distinction between stressful and traumatic events, and the subsequent development of PTSD, however, was beyond the objective of this study. Unlike previous scales, ours was limited to a one-year span, and investigated only the subjective perception of the event and not the effect on an individual's chronic mental health.

Argentina is less prone than other regions to natural disorders or religious conflicts, whereas corruption, crime, and cyclic economic crises are major factors disrupting people's lives in this country, which drove us to create and validate to a 14-item events exposure questionnaire specific for this region. Limitations of the current scale are the lack of inclusion of marginally illiterate people without internet access and the Delphi group's unexpected omission of not assessing intimate partner violence, which could be corrected in future versions. Although the COVID-19-related question, when included, was the third most frequent potentially traumatic event, highlighting the impact of the pandemic, no other conclusions could be drawn for this question. On the other hand, running this study during the pandemic would have made it difficult to isolate independent subjective stress perceptions for the general context (Asmundson & Taylor, 2021; Norrholm et al., 2021; O'Donnell & Greene, 2021).

In conclusion, reported stressful or potentially traumatic events in Argentina's middle class over a one-year time span are slightly different from those interrogated by previous scales developed in other countries. Specific idiosyncratic characteristics prevalent among South American populations indicated bankruptcy, job loss, migration, and exposure to crime as being frequent and prominent events leading to potential stress/trauma. This suggests a need for the use of more specific regional questionnaires when investigating stressful life events and their future health consequences. However, whether the questionnaire could be applicable to other countries in South America will require further validation. When a question related to the COVID-19 pandemic was included in the analysis, it ranked as the third most frequent and ninth most stressful event during the past year.

### Disclosure statement

No potential conflict of interest was reported by the authors.

## Data availability statement

The data that support the findings of this study are openly available in figshare at

- (1) Doi:10.6084/m9.figshare.17429870  
 (2) Link: <https://figshare.com/s/8a2b28665911168bfb84>.

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