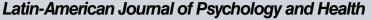


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Article

# Is the relation between news media information about violence and anxiety mediated by risk perception?

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## ARTICLE INFO

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# **ABSTRACT**

**Objective:** In the context of urban violence scenarios and the psychological consequences associated with them, a study was designed to study the mediating role that the risk perception of victimization of violence may play between the exposition to violence in news media and the anxiety associated to urban violence. **Method:** A non-experimental cross-sectional study was designed. A sample of 384 participants, aged from 18 to 25 years old (M = 21.4, SD = 1.89), 59.4% women and residents in the city of Obregón (Sonora, Mexico), the 31st most violent city in the world, was gathered. Participants answered to three psychometric scales measuring risk perception, news media consumption, and anxiety. **Results:** The results advertise that women perceive higher risk of victimization of violence; are more exposed to violence in new media; and report more anxiety associated to urban violence. Moreover, the results (structural equation model) confirmed the mediation role of risk perception of victimization of violence between the exposition to violence in news media ( $\beta = .36$ , p < .001) and anxiety associated to urban violence ( $\beta = .22$ , p < .001). **Conclusions:** The findings confirm the effects of news media on the anxiety associated to urban violence mediated by an increase in the risk perception. Thus, actions should be implemented on the contents exposing violence in news media to mitigate the direct and positive effect in risk perception, and, consequently, the adverse effects in anxiety.

# ¿Está la relación entre la información sobre violencia en los mass media y la ansiedad mediada por la percepción de riesgo?

# RESUMEN

Palabras clave:
Victimización a la violencia
Exposición a la violencia
Violencia urbana
Deterioro cognitivo
Somatización
Inhibición de la respuesta

Objetivo: En el contexto de escenarios de violencia urbana y las consecuencias psicológicas asociados a ésta, se planteó un estudio con el objetivo de estudiar el papel mediador que la percepción de riego de victimización de violencia puede desempeñar entre la exposición a la violencia en los medios de comunicación y la ansiedad asociada a la violencia urbana. **Método:** Se diseñó un estudio transversal no experimental. Se recabó una muestra de 384 participantes con un rango de edad de 18 a 25 años (M = 21.4, DE = 1.89), el 59.4% mujeres y residentes en la cuidad de Obregón (Sonora, México), la 31ª ciudad más violenta del mundo. Los participantes respondieron a tres medidas psicométricas que evaluaban percepción de riesgo, consumo de medios de comunicación y ansiedad. **Resultados:** Los resultados advierten que las mujeres perciben un mayor riesgo de victimización of violencia; están más expuestas a la violencia en los medios de comunicación; e informan de más ansiedad asociada a la violencia urbana. Además, los resultados (modelo de ecuaciones estructurales) confirmaron el papel de mediación de la role of percepción del riesgo entre la exposición a la violencia en los medios de comunicación ( $\beta = .36$ , p < .001) y la ansiedad asociada a la violencia urbana ( $\beta = .22$ , p < .001). **Conclusiones:** Los resultados confirman los efectos de la exposición a los medios de comunicación en la ansiedad asociada a la violencia urbana medidos por un incremento en la percepción de riesgo. De este modo, deberían implementarse acciones en los contenidos que exponen violencia en los medios de comunicación para mitigar el efecto directo y positivo sobre la percepción de riesgo y, subsecuentemente, los efectos adversos sobre la ansiedad.

#### Introduction

Violence in urban settings is one of the most important health problems worldwide, because of the high levels of death and morbidity consequence of this kind of violence; being the Latin American region one of the most prevalence (Jaitman, 2015). Urban violence can be understood as all that violence with psychological, physical, and patrimonial damages generated under the context of a city, which is variable and dynamic at the socio-spatial level (Pavoni & Tulumello, 2020). In addition to the direct damages for victims of urban violence, literature has pointed out that there is an indirect psychological damage on people living in violent settings where crime and insecurity rates are high, manifesting these damages in nervousness, emotional instability, sleeping problems, stress and anxiety (Gutiérrez & Portillo, 2014; Pupo et al., 2015; Teche et al., 2017). Regarding the above, scientific evidence has found that news media play a fundamental role in the development of anxiety associated violence and urban insecurity presented by the inhabitants of a given context (Hafeez, 2017; Rodríguez & Quinde, 2016). Likewise, it has been identified that the reproduction in mass media of violent events that happened in a community is related with the prevalence of anxiety disorders in its population and with long-term effects (Thompson et al., 2019).

Theories such as Social Amplification theory or Cultivation Theory (Gerbner, 1969) have tried to explain the relationship between news media exposure and anxiety. The second one postulates that long-term exposure to news media influences how people perceive their contexts by the symbolic function of media as a provider of information that works as bases for perception, believes and attitudes for viewers (Mosharafa, 2015). However, Wahlberg and Sjöberg (2000) warned that these aren't psychological theories, and that evidence could be understood as a sociological framework related to cognitive and psychosocial processes underneath the news media and risk perception phenomenon. As for understanding the perceptual processes underlying the relationship between the exposition to news media and anxiety, the risk perception theories have theorized that there is an objective risk that manifests as a tangible event that potentially represent a threat to people's integrity. However, these events are subjectively interpreted from the cognitive evaluation that individuals make towards said threats (Sjöberg, 1998; Slovic, 1987; Slovic et al., 2004). From the psychometric paradigm of risk perception, it has been assumed that the cognitive component of risk perception lies in the subjective estimation of the probability of the threatening event occurring and the severity it has for perceiver (Kouabenan et al., 2015). About this, Slovic (1987) proposed that contact with adverse events leads individuals to interpret these and assume the impact they may have. This may suggest that the level of risk perception may depend on the frequency or intensity people are exposed to these events. Although these events have different origins, they all serve as an input of information from which people judge the risk. From the heuristics perspective theories, risk perception can be understood as the result of a frugal cognition process based on the bias of information and cognitive shortcuts (Kahneman, 2011). The cognitive shortcuts are known as heuristics and they can explain how people estimate risk. Thus, the availability heuristic, that is is the tendency of estimate an event based on how easy is for a person to recall it (Folkes, 1988), explains how people overestimate risk (Di Baldassarre et al., 2021). Another cognitive heuristic associated with risk perception is the affect heuristic: Perceived risk rest on personal emotional state at that moment. Thus, triggering emotional states like fear can make people overestimate risk (Västfjäll et al., 2014). Proximity heuristic have been also related to risk perception (Jon et al., 2019). Proximity heuristic is a cognitive shortcut where people estimate judgments monitoring an event or target by temporal or spatial distance; consequently, risk perception could depend on how close or recent a hazard event has been (Teigen, 2005). Bodemer and Gaissmaier (2015) suggested that the cognitive processes of risk perception are strongly related to news media. Succinctly, news media elicits the availability heuristic by reproducing frequently an event and making more easily for people to recall it; and the affect heuristic via the emotional connotations of news presentation.

Most of the literature approaching news media and risk perception phenomenon focused on traditional news media (e.g., radio, television, newspapers); meanwhile, modern news media (informal and non-professional media as Facebook, Twitter or Instagram) have been also associated with risk perception (Yang et al., 2016; Zeballos et al., 2021; Zhu & Liu, 2021). The relevance of the modern news media was related with: a) it is quicker for spreading the news; b) it has been gaining more diffusion; c) it has more space for diverse news sources; and d) it has fewer restrictions regarding sensible content, and can assure digital spaces for local news (Oh et al., 2021; Tsoy et al., 2021).

Literature has related high levels of risk perception with anxiety disorders, specifically against catastrophic events such as climate threats (Lemée et al., 2019), against viral pathogens such as SARS-COV2 (Liu et al., 2020) and threatening social events such as terrorism (Alarcón et al., 2017). As stated Slovic (1987), risk perception has an emotional connotation; and, because of this, consequences as anxiety are more likely related to it. Because of the characteristics of risk perception as a cognitive process influenced by news media and also a possible explanatory factor for anxiety, it has been suggested its mediating role between exposition to news media and anxiety (Guo et al., 2020).

Due to the foregoing, a study was designed to study the mediating role that the risk perception of victimization of violence may play between the exposition to violence through news media and anxiety.

# Method

# **Participants**

A non-probabilistic sample of 384 individuals from Obregón city in the state of Sonora (Mexico), which is the 31st most violent city in the world (Statista, 2021), was obtained. The sample size was computed for a 95% of confidence level and 5% of error. The sample was targeted to young adults, aged from 18 to 25 years old (M = 21.4, SD = 1.89), and 59.4% were women. The inclusion criteria were to be over the legal age of majority ( $\geq$  18 years old); having lived at least 1 year consecutively in the city of Obregon (Sonora, Mexico); and being willing to participate in the study.

# **Measure instruments**

A sociodemographic questionnaire was created ad hoc to measure variables (e.g., age, gender, time living in the city) of

relevance for the study and sample description. For the measure anxiety, risk perception of victimization of violence, and exposure to violence in news media, an adaptation of other scales was proceeded. A pool of scales was submitted to a content validation by 4 experimented researchers in this topic of research, based on the validity of the instrument to measure the proposed dimension, the clarity of the items, coherence, relevance and adequacy for the study purposes. Researchers reached consensus the following scales as the most appropriate.

To measure anxiety, the Escala Reducida de Ansiedad [Reduced Anxiety Scale] (Martínez-Sánchez et al., 1995) was administered (Annex 1). This consists of 17 items assessed on a 5-point Likert-type frequency scale, with a range from rarely (1) to frequently (5). It is structured into 3 dimensions: cognitive responses to anxiety (5 items), physiological responses (8 items), and motor responses (4 items). The reported internal consistency was excellent ( $\alpha = .942$ ).

Regarding the measure of the risk perception of victimization by local violence, a scale was designed based on two underlying dimensions: estimation of the probability and of the severity of the victimization of violence (Rundmo, 2000). 8 items were generated (e.g., "How serious do you think it would be if you or someone close to you were injured in a cross-over shooting?"; "How serious do you think it would be if you or someone close to you were a victim of an armed robbery?") to measure the estimation of severity of the victimization of violence ( $\alpha = .958$ ; thus items are measuring the same construct). The scale is scored on a 5-point Likert scale ranging from not serious (1) to very serious (5). Likewise, 8 items (e.g., "How likely do you consider it is that you or someone close to you would be injured in a cross shooting?"; "How likely is it that you or someone close to you was the victim of an armed robbery?") were created to measure the estimation of the probability of victimization of violence ( $\alpha = .910$ ; thus items are measuring the same construct) The items are scored in a 5-point Likert scale ranging from very unlikely (1) to very likely (5) (Annex 2).

Finally, the Exposure to Violence through News Media Scale was constructed based on the Scale of Frequency of Exposure to News of Criminal and Violent Acts scale (Orue & Calvete, 2010). As for the adaptation, 10 items were considered ( $\alpha = .922$ ; so they are measuring the same construct): 5 items referring to the frequency with which violent and criminal events (e.g., attacks with firearms, assaults, kidnappings, murders, housebreaking and theft) in the city they live have been known through traditional news media (e.g., television, radio, newspapers); and 5 items addressing the frequency of contact with these kinds of news in modern news media (e.g., Facebook, Twitter, Instagram). The scale is responded on a 5-point Likert scale ranging from never (1) to always (5) (Annex 3).

# Procedure

Participants were contacted personally following a snowball procedure, and invited, after being informed about the study aims, to participate in the study (voluntary participation). Participants signed an informed consent form and filled the sociodemographic questionnaire. Then, the Anxiety Scale; the Risk Perception of Victimization of Violence Scale and the Scale of Frequency of Exposure to News of Criminal and Violent Acts were administered

to participants. The instructions for the Risk Perception of Victimization of Violence and Exposure to Violence through News Media scales were focused to the city of Obregón (Sonora, Mexico); and for the anxiety, that associated to the violence in the city of Obregón i.e., anxiety associated to urban violence. The order of presentation of the scales was rotated (standard rotation procedure) to counterbalance interactions among variables (Vilariño et al., 2022). The bioethics committee of the Technological Institute of Sonora (Obregón, Sonora, Mexico) approved the study.

# Design of data analysis

The design of the present study has a quantitative non-experimental transactional approach based on a community sample. With the purpose to contrast the validity of each scale, it was performed an exploratory factor analysis (EFA) (construct validity). EFAs are appropriate for scales where structure or number of items can't be assumed, as is the case of all those scales that have been designed for the first time, modified or subjected to a new population (Izquierdo et al., 2014). The Kaiser-Meyer-Olking (KMO) indices and Bartlett's sphericity test were obtained before each analysis to corroborate the sample adequacy and the correlation matrix is an identity one. Likewise, evidence of reliability was obtained from the Cronbach's Alpha index for the internal consistency of each of the scales, being interpreted with the following criteria:  $\alpha < .7$  (poor);  $0.7 \le \alpha < 0.9$  (good); and  $\alpha \ge .90$  (excellent) (George & Mallery, 2003).

In order to identify the effect of the attributive variables on anxiety associated to urban violence, risk perception of victimization of violence, and exposure to violence in news media variables, hypothesis tests were performed. As for marginally significant results (p < .10) and to control type II error (false acceptance of the null hypothesis), the significance of the effect size: if the 95% confidence interval has no 0, the effect is significant and vice versa (Fandiño et al., 2021). The magnitude of the effect was measured in Cohen's d. The statistical model error was estimated by the Probability of an Inferiority Score (PIS; Gancedo et al., 2021). Finally, the dataset was modeled using structural equations (AMOS version 23), evaluating the model fit with the following indexes and criteria for a good fit (Hu & Bentler, 1999):  $\chi^2$  (ns), CFI (> .95), RMSEA (< .06), and SRMR (<.08).

# Results

For the validation of the scales used (construct validity), it was proceeded with an EFA of each of the scales. For the anxiety scale, the sample adequacy was satisfactory (KMO = .926), and the correlation matrix is an identity matrix as confirmed by the Bartlett test of sphericity,  $\chi^2$  (120) = 4394.30, p < .001. Thus, the database is valid to run an exploratory factor analysis. The results of an EFA (extraction method: principal component analysis; rotation method: varimax with Kaiser normalization) supported a structure composed of three factors that explained 69.76 percent of the variance. The item "My head hurts" was removed as the factorial load was lower than .4. The first factor composed of 4 items corresponded to the motor response; the second consisted of 5 items to the cognitive responses of anxiety; and the third made up of 7 items to the physiological responses (see Table 1).

For the risk perception scale, the sample adequacy was satisfactory (KMO = .875), and the correlation matrix is an identity matrix as confirmed by the Bartlett test of sphericity,  $\chi^2$  (120) = 6319.28, p < .001. Then, an EFA (extraction method: principal component analysis; rotation method: varimax with Kaiser normalization) was performed exhibiting a factorial structure composed of two dimensions accounting for 69.5% of the total variance. The first factor (8 items) corresponded to the estimation of severity when being a victim of violence, and the second (8 items) to the estimation of the probability of being a victim of violence (see Table 2).

**Table 1.** Factorial matrix rotated of the Anxiety Scale.

| Item                            | Factor |      |      |  |  |
|---------------------------------|--------|------|------|--|--|
|                                 | 1      | 2    | 3    |  |  |
| Motor Response: item 16         | .839   |      |      |  |  |
| Motor Response: item 15         | .808   |      |      |  |  |
| Motor Response: item 17         | .755   |      |      |  |  |
| Motor Response: item 14         | .654   |      |      |  |  |
| Cognitive Response: item 2      |        | .852 |      |  |  |
| Cognitive Response: item 4      |        | .798 |      |  |  |
| Cognitive Response: item 3      |        | .788 |      |  |  |
| Cognitive Response: item 5      | .745   |      |      |  |  |
| Cognitive Response: item 1      | .695   |      |      |  |  |
| Physiological Response: item 7  |        |      | .747 |  |  |
| Physiological Response: item 6  |        |      | .709 |  |  |
| Physiological Response: item 10 |        |      | .650 |  |  |
| Physiological Response: item 9  |        |      | .642 |  |  |
| Physiological Response: item 11 |        |      | .608 |  |  |
| Physiological Response: item 13 |        |      | .525 |  |  |
| Physiological Response: item 12 |        |      | .502 |  |  |
| % of variance explained         | 25.1   | 23.7 | 20.8 |  |  |
| Cronbach's Alpha                | .871   | .897 | .907 |  |  |

 Table 2.

 Factorial matrix rotated of the Risk Perception of Victimization of Violence Scale.

| Item                                 | Factor             |      |  |  |
|--------------------------------------|--------------------|------|--|--|
|                                      | 1                  | 2    |  |  |
| Severity of victimization: item 15   | .906               |      |  |  |
| Severity of victimization: item 16   | .893               |      |  |  |
| Severity of victimization: item 12   | .891               |      |  |  |
| Severity of victimization: item 11   | .889               |      |  |  |
| Severity of victimization: item 13   | .888               |      |  |  |
| Severity of victimization: item 9    | .850               |      |  |  |
| Severity of victimization: item 10   | .821               |      |  |  |
| Severity of victimization: item 14   | .741               |      |  |  |
| Probability of victimization: item 7 |                    | .815 |  |  |
| Probability of victimization: item 1 |                    | .814 |  |  |
| Probability of victimization: item 8 |                    |      |  |  |
| Probability of victimization: item 4 | n: item 4 .780     |      |  |  |
| Probability of victimization: item 3 |                    |      |  |  |
| Probability of victimization: item 5 |                    |      |  |  |
| Probability of victimization: item 2 |                    |      |  |  |
| Probability of victimization: item 6 |                    | .699 |  |  |
| % of variance explained              | 38.4               | 31.1 |  |  |
| Cronbach's Alpha                     | abach's Alpha .958 |      |  |  |

Tested that the sample adequacy was satisfactory, KMO = .888, and that the correlation matrix is an identity matrix as confirmed the Bartlett test of sphericity,  $\chi^2(120) = 2966.43$ , p < .001, an exploratory factor analysis (EFA) was run. An EFA (extraction method: principal component analysis; rotation method: varimax with Kaiser normalization) with varimax rotation grouped variables in two dimensions accounting for 72.8% of the variance (see Table 3). The first factor grouped 5 items corresponding to exposure to violence through traditional news media and the second factor 5 items corresponding to exposure through modern news media.

Once the latent variables (factors) were identified, descriptive statistics i.e., central tendency, dispersion, and distribution were computed (see Table 4). The results exhibited that the means of the distributions of the anxiety measures are positioned in the lower range of the measurement scale (< 3). Meanwhile, the means of the distributions of risk perception measures are into the middle range of the measurement scale ( $\approx$  3); and in the higher range of the measurement scale (> 4), the means of the distributions of the exposition to violence through news media variables. In turn, the population reported a lower level of anxiety associated to urban violence; a middle perception of risk of victimization of violence in the city of Obregón (31st in the world ranking); and a high exposition to violence in news media. Finally, according to George and Mallery (2010), skewness and kurtosis in a range from -2 to 2 are sufficient to assume a normal univariate distribution, which was the case for all the study variables.

 Table 3.

 Factorial matrix rotated of the Exposure to Violence through News Media Scale.

| Item                            | Fac  | tors |  |  |
|---------------------------------|------|------|--|--|
|                                 | 1    | 2    |  |  |
| Traditional news media: item 9  | .893 |      |  |  |
| Traditional news media: item 6  | .882 |      |  |  |
| Traditional news media: item 7  | .879 |      |  |  |
| Traditional news media: item 8  | .864 |      |  |  |
| Traditional news media: item 10 | .534 |      |  |  |
| Modern news media: item 2       |      | .864 |  |  |
| Modern news media: item 3       |      | .847 |  |  |
| Modern news media: item 5       |      | .775 |  |  |
| Modern news media: item 1       | .653 |      |  |  |
| Modern news media: item 4       |      | .646 |  |  |
| % of variance explained         | 37.9 | 34.8 |  |  |
| Cronbach's Alpha                | .922 | .863 |  |  |

**Table 4.**Descriptive statistics and normality test for anxiety, risk perception and news media exposure to violence variables.

| exposure to violence variables.                  |      |      |      |          |          |
|--|------|------|------|----------|----------|
| Variables  | M    | SD   | Mdn  | Skewness | Kurtosis |
| Cognitive response                               | 2.56 | 1.19 | 2.40 | 0.373    | -0.948   |
| Physiological response                           | 1.91 | 1.01 | 1.57 | 1.199    | 0.818    |
| Motor response                                   | 1.99 | 1.00 | 1.50 | 0.947    | -0.105   |
| Severity of victimization                        | 3.39 | 0.77 | 3.75 | -1.199   | 0.511    |
| Probability of victimization                     | 2.79 | 0.71 | 2.75 | -0.112   | -0.325   |
| Exposition to violence in traditional news media | 4.33 | 0.91 | 4.80 | -1.547   | 1.947    |
| Exposition to violence in modern news media      | 4.41 | 0.77 | 4.80 | -1.460   | 1.985    |

Since normality of all the variables can be assumed, parametric tests were run for the mean comparison by the factor gender. The results (see Table 5) showed that cognitive (impair of cognitive performance) and motor responses (i.e., response inhibition) of anxiety are significantly higher in women than in men with a magnitude of the effect moderate and small, respectively. Marginally significant differences were observed in physiological responses (i.e., somatization) with a significant (the 95% CI[0.02, 0.38] has no 0) and small effect size ( $\geq 0.20$ ), reporting women higher physiological responses of anxiety. It was also found that females estimate significantly greater severity of the victimization of violence than men, with a magnitude of the effect between small and moderate. No differences moderated by gender were observed in the estimation of the probability of victimization of violence. Last, significant differences were detected in the exposition to violence through modern news media for the factor gender, with a magnitude of the effect between small and moderate. In relation to the exposition to violence through traditional news media, the results revealed marginally significant differences, informing women of a higher exposition with a significant (the 95% CI[0.01, 0.39] has no 0) and small effect size ( $\approx$  0.20). As for the errors of the statistical models, the results displayed a probability of error (estimation of the probability of cases of women with a score under the mean of the group of men) ranging, for significant models (see PIS in Table 5), from 28.1% (cognitive responses of anxiety) to 42.5% (exposure to traditional news media).

As for performing a structural equation model, the assumption of multivariate normality must be met. According to Bollen (1989), it is possible to assume that there is multivariate normality if the Mardia's Kurtosis coefficient is less than p (p  $\pm$  2), where p is the number of observed variables in the study. For the present analysis, the Mardia's Kurtosis value was 15.37 ( $\leq$  63).

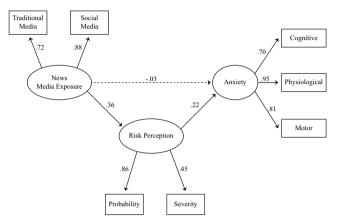
**Table 5.**Two-sample t-test for the anxiety, risk perception and news media exposure to violence variables with the gender factor.

|  | 1/                 |                      | 4    |      |      | DIC  |
|--|--------------------|----------------------|------|------|------|------|
| Variables  | M <sub>males</sub> | M <sub>females</sub> | t    | p    | d    | PIS  |
| Cognitive responses                              | 2.15               | 2.84                 | 5.94 | .000 | 0.58 | .281 |
| Physiological responses                          | 1.79               | 1.99                 | 1.86 | .063 | 0.20 | .421 |
| Motor responses                                  | 1.84               | 2.08                 | 2.13 | .034 | 0.22 | .413 |
| Estimation of severity of victimization          | 3.21               | 3.52                 | 3.98 | .000 | 0.41 | .341 |
| Estimation of probability of victimization       | 2.77               | 2.81                 | 0.56 | .573 | 0.06 | .476 |
| Exposition to violence in traditional news media | 4.23               | 4.40                 | 1.77 | .078 | 0.19 | .425 |
| Exposition to violence in modern news media      | 4.24               | 4.52                 | 3.41 | .001 | 0.38 | .352 |

Note. df(382); d: Cohen's d; PIS: probability of an inferiority score.

When running the model (maximum likelihood method), the exposition to violence in news media latent variable was identified and was constituted by the observable variables of traditional and modern news media. Later, the risk perception of victimization of violence latent variable was defined, consisting of the observable variables of estimation of the probability and severity of victimization of violence. Finally, the anxiety associated to urban violence latent variable was constructed from the three types of

response: cognitive, physiological, and motor. A good fit between the model and data (see Figure 1) was observed:  $\chi^2(11) = 40.46$ , p < .01; CFI = .967, RMSEA = .084, and SRMR = .0491. The model shows that the exposition to news media has a positive and direct relation with risk perception ( $\beta$  = .36, p < .001), which in turn has a positive and direct relation with anxiety ( $\beta$  = .22, p < .001). Additionally, the model provides a non-relation between the news media exposition and anxiety. Consequently, the model highlights the mediating role of risk perception of victimization of violence between the exposition to violence in news media and anxiety associated to urban violence.



**Figure 1.**Model of risk perception of violence as a mediator between anxiety and exposure to violence through news media.

# Discussion

The psychometric properties tested in the study for the measurement scales employed corroborate an excellent reliability and validity. However, the psychometric properties should be generalized with caution to other samples and studies. Thus, the measures in other studies should be submitted to new analysis of the psychometric properties as confirmatory analysis and factorial invariance was no tested. Although heuristics could explain the consumption of new media and the risk perception, it is difficult to identify when or how heuristics are used by people to determine their risk perception. In consequence, heuristics must be taken with caution to explain risk perception (Siegrist & Arvai, 2020). Another limitation comes from the sample was not probabilistic and was only centered in young adults, which as it has been advertised previously, tends to show a lower perception of risk of suffering violence in urban settings (Rundmo & Nordfjærn, 2017). Likewise, the generalization of the results and model to other contexts different of urban violence may be done with caution (Slovic, 1987).

Regarding the findings, women were more sensitive to develop anxiety associated to urban violence as in cognitive as in motor and physiological responses. Likewise, women estimate more severity in victimization or urban violence, and are more exposed to violence in news media. Gustafson (1998) had suggested that this difference could be associated not only with the fact that men and women perceive the same risk differently, but also that the same scenarios may imply different risks for men than for women. These findings are in line with Rundmo's and Nordfjærn's (2017) results who

advertised that women tend to report a higher risk perception of victimization of violence than men. In conclusion and in application of the model confirmed in the study, women consume more news about violence increasing the risk perception of victimization of violence and, subsequently, the anxiety associated to urban violence (i.e., impair of cognitive performance; response inhibition; somatization). Thus, prevention and intervention models to cope with the anxiety associated to urban violence (adverse effect) should have women as a target population.

In relation to the structural equation model derived from data, it supports an indirect effect of the exposition to violence in new media on the anxiety through a positive and direct effect on risk perception of victimization which has a direct and positive effect in anxiety. No direct effect of exposition to violence in news media in anxiety associated to urban violence is supported by the model. In conclusion, the consume of news about violence increases the risk perception of victimization of violence and, by extension, the anxiety associated to urban violence.

Lastly, it is suggested the future development of studies that allows corroborating the findings in a broader population, contemplating broader age ranges, as well as the inclusion of more attributive variables such as the personal experience of urban violence to identify what other factors can influence the phenomenon.

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# Annexes

Annex 1.

Items of the Reduced Anxiety Scale (Martínez-Sánchez et al., 1995)

| No. of<br>Item | Subscale                  | Item  |
|----------------|---------------------------|---|
| 1              | Cognitive                 | Me preocupo facilmente  |
| 2              | Response                  | Tengo pensamientos o sentimientos negativos                       |
| 3              |                           | Me siento inseguro de mí mismo                                    |
| 4              |                           | Doy demasiadas vueltas a las cosas sin llegar a<br>decidirme      |
| 5              |                           | Siento miedo  |
| 6              | Physiological<br>Response | Me sudan las manos u otra parte del cuerpo hasta en<br>días fríos |
| 7              |                           | Me tiemblan las manos o las piernas                               |
| 8              |                           | Me duele la cabeza  |
| 9              |                           | Mi cuerpo está en tensión   |
| 10             |                           | Tengo palpitaciones, el corazón me late muy deprisa               |
| 11             |                           | Me falta el aire y mi respiración es muy agitada                  |
| 12             |                           | Siento mareo  |
| 13             |                           | Tengo escalofríos y tirito aunque no haga mucho frío              |
| 14             | Motor                     | Trato de rehuir o evitar alguna situación                         |
| 15             | Response                  | Me muevo y hago cosas sin una finalidad concreta                  |
| 16             |                           | Quedo paralizado o mis movimientos son torpes                     |
| 17             |                           | Tartamudeo o tengo otras dificultades de expresión<br>verbal      |

**Annex 2.** Items of the Risk perception of victimization by local violence scale.

| No. of Item | Subscale       | Item   |
|-------------|----------------|--|
| 1           | Probability of | ¿Qué tan probable consideras que tú, algún familiar o amigo pueda ser víctima de un asalto con arma de fuego?                          |
| 2           | victimization  | ¿Qué tan probable consideras que tú, algún familiar o amigo pueda ser víctima de un asalto con arma blanca (navaja, cuchillo, etc)?    |
| 3           |                | ¿Qué tan probable consideras que tú, algún familiar o amigo pueda ser víctima de un secuestro o "levantón"?                            |
| 4           |                | ¿Qué tan probable consideras que tú, algún familiar o amigo pueda ser víctima de un atentado de asesinato?                             |
| 5           |                | ¿Qué tan probable consideras que tú, algún familiar o amigo pueda ser víctima de una amenaza de agresión o muerte?                     |
| 6           |                | ¿Qué tan probable consideras que tú, algún familiar o amigo pueda ser víctima de un robo a casa-habitación?                            |
| 7           |                | ¿Qué tan probable consideras que tú, algún familiar o amigo pueda ser víctima de una herida por fuego cruzado?                         |
| 8           |                | ¿Qué tan probable consideras que tú, algún familiar o amigo pueda ser víctima de muerte por fuego cruzado?                             |
| 9           | Severity of    | ¿Qué tan grave consideras que sería si tú, algún familiar o amigo fueran víctima de un asalto con arma de fuego?                       |
| 10          | victimization  | ¿Qué tan grave consideras que sería si tú, algún familiar o amigo fueran víctima de un asalto con arma blanca (navaja, cuchillo, etc)? |
| 11          |                | ¿Qué tan grave consideras que sería si tú, algún familiar o amigo fueran víctima de un secuestro o "levantón"?                         |
| 12          |                | ¿Qué tan grave consideras que sería si tú, algún familiar o amigo fueran víctima de un atentado de asesinato?                          |
| 13          |                | ¿Qué tan grave consideras que sería si tú, algún familiar o amigo fueran víctima de una amenaza de agresión o muerte?                  |
| 14          |                | ¿Qué tan grave consideras que sería si tú, algún familiar o amigo fueran víctima de un robo a casa-habitación?                         |
| 15          |                | ¿Qué tan grave consideras que sería si tú, algún familiar o amigo fueran víctima de una herida por fuego cruzado?                      |
| 16          |                | ¿Qué tan grave consideras que sería si tú, algún familiar o amigo fueran víctima de muerte por fuego cruzado?                          |

**Annex 3.** Items of the Exposure to Violence through News Media Scale.

| No. of Item | Subscale         | Item  |
|-------------|------------------|---|
| 1           | Modern news      | ¿Qué tan frecuentemente has visto publicaciones en redes sociales sobre atentados en tu ciudad?         |
| 2           | media            | ¿Qué tan frecuentemente has visto publicaciones en redes sociales sobre asaltos en tu ciudad?           |
| 3           |                  | ¿Qué tan frecuentemente has visto publicaciones en redes sociales sobre secuestros en tu ciudad?        |
| 4           |                  | ¿Qué tan frecuentemente has visto publicaciones en redes sociales sobre asesinatos en tu ciudad?        |
| 5           |                  | ¿Qué tan frecuentemente has visto publicaciones en redes sociales sobre robos a viviendas en tu ciudad? |
| 6           | Traditional news | iQué tan frecuentemente has visto noticias en la tele o en la radio sobre atentados?                    |
| 7           | media            | ¿Qué tan frecuentemente has visto noticias en la tele o en la radio sobre asaltos?                      |
| 8           |                  | ¿Qué tan frecuentemente has visto noticias en la tele o en la radio sobre secuestros?                   |
| 9           |                  | ¿Qué tan frecuentemente has visto noticias en la tele o en la radio sobre asesinatos?                   |
| 10          |                  | ¿Qué tan frecuentemente has visto noticias en la tele o en la radio sobre robos a vivienda?             |