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## Original Article

# Depression, Anxiety and Comorbid Anxiety–Depression and its Relation to Social Capital and Resilience in Young People From Deprived Urban Areas: A Cross-sectional Study in South America



Juan Camilo Castro Martinez<sup>a,c,d</sup>, Francisco Diez-Canseco<sup>e</sup>, Luis Ignacio Brusco<sup>f</sup>,  
Nelcy Rodríguez Malagón<sup>b</sup>, Catherine Fung<sup>g</sup>, Magda Cepeda-Gil<sup>b</sup>,  
Fernando Luis Carbonetti<sup>f</sup>, Daniela Ramirez-Meneses<sup>e</sup>, Fernando Esnal<sup>f</sup>,  
Adriana Carbonel<sup>e</sup>, Victoria Bird<sup>g</sup>, Stefan Priebe<sup>h</sup>, Carlos Gómez-Restrepo<sup>a,b,c,\*</sup>

<sup>a</sup> Department of Psychiatry and Mental Health, Pontificia Universidad Javeriana, Bogotá, Colombia

<sup>b</sup> Department of Clinical Epidemiology and Biostatistics, Pontificia Universidad Javeriana, Bogotá, Colombia

<sup>c</sup> Hospital Universitario San Ignacio, Bogotá, Colombia

<sup>d</sup> Centro de Memoria y Cognición, Intellectus, Bogotá, Colombia

<sup>e</sup> CRONICAS Center of Excellence in Chronic Diseases, Universidad Peruana Cayetano Heredia, Lima, Peru

<sup>f</sup> Department of Psychiatry and Mental, School of Medicine, University of Buenos Aires, Argentina

<sup>g</sup> Unit for Social and Community Psychiatry, Wolfson Institute of Population Health, Queen Mary University of London, London, United Kingdom

<sup>h</sup> Centre for Psychosocial Medicine, University of Hamburg, Hamburg, Germany

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## ABSTRACT

**Introduction:** Youth is a critical period for the development of anxiety and depression, contributing to the disease burden in this population. Psychosocial resources (resilience and social capital) are important in coping with this burden but are under-researched in urban areas of low- and middle-income countries (LMICs). This study describes the sociodemographic characteristics, psychosocial resources, psychopathological symptoms and quality of life, and examines the relationship between psychopathological symptoms with psychosocial resources in a multi-country Latin American sample.

**Methods:** Using data from the OLA research program, this cross-sectional study involved youth aged 15–16 and 20–24 years from vulnerable urban areas in Latin America. Participants completed sociodemographic questionnaires and assessments for anxiety (GAD-7), depression (PHQ-8), social capital (ASCAT), and resilience (CD-RISC 10). Multinomial regression analyzed the relationships between psychopathology and psychosocial resources.

**Abbreviations:** PHQ-8, Patient Health Questionnaire-8; GAD-7, Generalized Anxiety Disorder-7; ASCAT, Adapted Social Capital Assessment Tool; CD-RISC-10, Connor-Davidson Resilience Scale; MANSA, Manchester Short Assessment of Quality of Life; CI, confidence intervals; CONSORT, Consolidated Standards of Reporting Trials.

\* Corresponding author.

E-mail address: [cgomez@javeriana.edu.co](mailto:cgomez@javeriana.edu.co) (C. Gómez-Restrepo).

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**Results:** Out of 2402 participants, 59.8% reported psychopathology: 6.8% with only anxiety, 18.9% with only depression, and 34.1% with comorbid anxiety–depression. Participants with comorbid anxiety–depression had the highest percentage of low cognitive social capital (92.4%) and the lowest resilience scores (median = 21, IQR = 11). Resilience showed a protective role across all psychopathological groups. High cognitive social capital was protective for those with depression and comorbid anxiety–depression.

**Conclusion:** Comorbidity was most prevalent and associated with lower resilience and quality of life. Resilience and cognitive social capital emerged as protective factors, suggesting potential targets for interventions in the population studied. These findings highlight the need for further research.

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## Depresión, ansiedad y comorbilidad ansiedad-depresión y su relación con el capital social y la resiliencia en jóvenes de áreas urbanas desfavorecidas: un estudio transversal en América del Sur

### R E S U M E N

#### Palabras clave:

Comorbilidad  
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Contexto urbano

**Introducción:** La juventud es un período crítico para el desarrollo de la ansiedad y la depresión, lo que contribuye a la carga de enfermedad en esta población. Los recursos psicosociales (resiliencia y capital social) son importantes para afrontar esta carga, pero son poco investigados en áreas urbanas de países de bajos y medianos ingresos. Este estudio describe las características sociodemográficas, los recursos psicosociales, síntomas psicopatológicos y la calidad de vida, junto a examinar la relación entre síntomas psicopatológicos con los recursos psicosociales en una muestra multinacional de América Latina.

**Métodos:** Utilizando datos del programa de investigación OLA, este estudio transversal incluyó a jóvenes de 15-16 y 20-24 años de áreas urbanas vulnerables en América Latina. Los participantes completaron cuestionarios sociodemográficos y evaluaciones de ansiedad (GAD-7), depresión (PHQ-8), capital social (ASCAT) y resiliencia (CD-RISC 10). La regresión multinomial analizó las relaciones entre la psicopatología y los recursos psicosociales.

**Resultados:** De los 2,402 participantes, el 59.8% reportó psicopatología: 6.8% solo ansiedad, 18.9% solo depresión y 34.1% comorbilidad de ansiedad y depresión. Los participantes con comorbilidad de ansiedad y depresión presentaron el mayor porcentaje de bajo capital social cognitivo (92.4%) y las puntuaciones más bajas de resiliencia (mediana = 21, IQR = 11). La resiliencia mostró un rol protector en todos los grupos psicopatológicos. El alto capital social cognitivo fue protector para los que presentaban depresión y comorbilidad de ansiedad y depresión.

**Conclusión:** La comorbilidad fue la condición más prevalente y se asoció con menor resiliencia y calidad de vida. La resiliencia y el capital social cognitivo emergieron como factores protectores en la población estudiada, sugiriendo posibles objetivos para intervenciones. Estos hallazgos refuerzan la necesidad de mayor investigación.

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## Introduction

Mental disorders are a major contributor to the global burden of disease, accounting for significant disability-adjusted life-years (DALYs) lost worldwide,<sup>1</sup> with depression and anxiety being among the leading causes.<sup>2</sup> The impact of these conditions has worsened in recent years, exacerbated by global crises such as the COVID-19 pandemic.<sup>3</sup> Young people are particularly vulnerable to these challenges,<sup>4</sup> as mental

disorders emerging during adolescence and early adulthood can have long-lasting consequences for health, education, employment, and social functioning.<sup>4-9</sup> This developmental stage is not only marked by heightened risk for mental illness but also by critical opportunities for prevention and early intervention.<sup>7,10</sup>

While mental health problems are a global concern, the distribution, determinants, and consequences of these conditions differ across regions, particularly between high-income countries (HICs) and low- and middle-income countries

(LMICs).<sup>1,2,4,11</sup> Research from LMICs remains limited, despite evidence suggesting that youth in these settings face unique risks due to social and economic inequalities.<sup>11–14</sup> Latin America, with its high levels of urban poverty, violence, and social exclusion, exemplifies such vulnerable settings.<sup>15</sup> However, the region is highly heterogeneous, with substantial variation across countries and within disadvantaged areas that should be acknowledged in research efforts.<sup>16</sup>

In addition to the high prevalence of depression and anxiety, comorbidity between these disorders is particularly concerning,<sup>17</sup> given its association with increased symptom severity, functional impairment, and poorer long-term outcomes.<sup>18–22</sup> Despite this, few studies have explored shared and distinct factors contributing to comorbid versus isolated presentations of depression and anxiety,<sup>23–25</sup> especially among youth in LMICs.

Mental disorders result from the complex interaction between individual and environmental factors, as described by the biopsychosocial model.<sup>26</sup> In this framework, psychosocial resources,<sup>27,28</sup> such as social capital and resilience, are considered protective elements that can buffer the effects of adversity, particularly during critical developmental periods,<sup>29–34</sup> and in nuanced forms.<sup>35</sup> Social capital refers to the quality of social relationships and participation in networks, often conceptualized as comprising structural (social networks and participation) and cognitive (perceived trust and support) dimensions.<sup>36,37</sup> Resilience, meanwhile, can be understood both as an individual capacity to adapt positively to adversity and as a socially influenced process shaped by one's environment and the use of available resources.<sup>38,39</sup>

Although resilience and social capital are recognized as important for mental health,<sup>40</sup> research on these constructs often remains fragmented, with few studies examine their joint association with psychopathology.<sup>35,41,42</sup> Moreover, definitions of these constructs vary, creating challenges for developing unified models to explain their role in mental health.<sup>36,37,39</sup> Most research has focused on resilience and social capital in the context of disaster recovery.<sup>35,43</sup> or well-being,<sup>42</sup> with limited attention to their specific contribution to the presence of mental disorders in youth.

Addressing these gaps is particularly relevant in Latin America, where psychosocial adversity is prevalent and resources for mental health promotion are limited.<sup>14,15,44</sup> Furthermore, existing studies often fail to account for the heterogeneity of urban disadvantaged areas within the region, which may influence both the availability and effectiveness of psychosocial resources.

Therefore, this study aimed to examine the association between social capital, resilience, and mental health symptoms – specifically depression, anxiety, and comorbid anxiety–depression – among young people living in vulnerable urban areas across three Latin American cities. We hypothesized that higher levels of resilience and cognitive social capital would be associated with a lower likelihood of psychopathological symptoms. By simultaneously considering both individual and social factors linked to mental health within diverse urban contexts in Latin America, this study seeks to contribute to a better understanding of the complex interplay between social environment, psychosocial resources, and youth mental health. In addition to exploring

these associations, the study also provides a descriptive analysis of the prevalence of mental health symptoms (depression, anxiety and comorbid anxiety–depression) and the distribution of psychosocial resources and quality of life within this young population.

## Materials and methods

### Study design

This cross-sectional analysis used data from the “Building resilience and resources to reduce depression and anxiety in young people from urban neighborhoods in Latin America – OLA” research program. OLA is a multi-country program that aims to identify resources supporting young people in preventing and recovering from mental distress in three Latin American cities: Bogotá (Colombia), Lima (Peru), and Buenos Aires (Argentina).<sup>45</sup> The aim of this study was to determine the relationship between social capital and resilience, and the presence of comorbid anxiety–depression, only anxiety, and only depression.

### Participants

The study recruited participants aged 15–16 and 20–24 years old from economically disadvantaged urban neighborhoods, according to city's urban development indicators and unmet basic needs criteria defined in the OLA protocol.<sup>45</sup> Exclusion criteria were any severe mental illness (psychosis, bipolar disorder, schizophrenia), cognitive impairment and illiteracy. Informed consent was obtained from all recruited participants, with assent from participants under 18 years old. The recruitment strategy varied across the three cities. These differences are described elsewhere.<sup>46</sup> Data was collected between April 2021 and November 2022.

Collected data spanned sociodemographic variables, mental health metrics (assessed with validated self-report tools), perceived social support, resilience, and social capital. These data were pseudonymized, handled and stored in line with the Data Protection Act 2018, General Data Protection Regulation, and national data protection laws in each partner country. Details on the instruments used are outlined elsewhere.<sup>45</sup> This analysis included participants from the OLA cross-sectional database who completed all required assessments.

### Measurements

Data were collected through case report forms (CRF), adapted to each country through language variations. Participants were divided according to the mental symptoms reported at the time of the evaluation. For this division, mental symptoms were measured using self-rated scales the Patient Health Questionnaire-8 (PHQ-8) for depression<sup>47,48</sup> and the Generalized Anxiety Disorder (GAD-7) scales,<sup>49</sup> defining as having clinically significant scores by a score of greater than ten on either the PHQ-8 or GAD-7.<sup>45</sup> In both scales participants scored 0 to 3 according to the frequency of experiencing depression or anxiety in the last two weeks, respectively. For the comorbidity group, we took the participants with both scores greater than

ten, and we excluded these participants for the other groups to avoid duplication of data. Sociodemographic data included gender (female, male, other), age (15–16 years old, 20–24 years old), having children (yes, no), main occupation (employed or independent, student, homemaker, other, no occupation), and employment status as having a current job (yes, no). Also, participants reported whether they had engaged in sports and arts activities, on a regular basis, in the last 30 days (yes or no).

The psychosocial resources assessed were social capital and resilience. Social capital social following its definition as the degree of connectedness and the quality and quantity of social relations in a given population divided in the structural component (extent and intensity of associational links or activity), and the cognitive component (perceptions of support, reciprocity, sharing and trust), assessed using the Adapted Social Capital Assessment Tool (ASCAT),<sup>37</sup> which has been validated in Spanish.<sup>46</sup> In this study, scores were categorized as follows: structural social capital (low/medium/high) and cognitive social support (low/high). Resilience (measured by the Connor-Davidson Resilience Scale (CD-RISC 10)),<sup>50</sup> total scores range between 0 and 40 with higher scores indicating higher resilience, which has been validated in Spanish.<sup>51</sup>

Substance use was assessed using questions regarding previous use of tobacco, alcohol, marijuana, amphetamines, sedatives, hallucinogens from the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) scale.<sup>52</sup> In this study, we composed a dichotomic variable using the union of all these questions (yes in any of these questions, no in all the questions). Stressful life events were rated using an adaptation of the Adolescent Appropriate Life Events Scale<sup>53</sup> by the Risk, Resilience, Ethnicity and Adolescent Mental Health (REACH) research program.<sup>54</sup> Participants were asked if they have experienced any of 30 life events in the last year and more than a year ago. In the study, we used the median number of life events reported in each instance. Quality of life (evaluated through the Manchester Short Assessment of Quality of Life (MANSA)<sup>55</sup>), which is the average of the twelve questions using the Likert scale, with higher scores indicating higher quality of life.

### Statistical analysis

Sociodemographic characteristics, as well as psychosocial resources, substance use, stressful life events and participation in sports and arts activities, were described and compared according to participants' psychopathological status, dividing the participants in four groups: no symptoms, anxiety only, depression only, comorbid anxiety–depression. This status was categorized into four groups: anxiety only, depression only, comorbidity (anxiety and depression), and no symptoms. Results are presented in tables, using frequencies and percentages for categorical variables, while medians and interquartile ranges (IQR) are used for discrete numeric variables.

To assess the potential association between psychosocial resources (social capital and resilience) and psychopathological status, a multinomial logistic regression model was used, with the “no symptoms” category set as the reference group. Potential confounding factors included in the model were age, gender, having children, current employment status, par-

ticipation in sports or artistic activities, substance use, and experience of life events within the past year or more than a year ago. The model's results were reported as odds ratios (OR), along with their corresponding 95% confidence intervals (CI). However, the interaction between resilience and social capital with other variables was not considered, because the inclusion of these interactions increases the complexity of the model with a limited sample, which can lead to imprecise estimates.

No data imputation was performed, as overall missing data were below 6%. Data processing and model implementation were conducted using the R programming language via the RStudio Interface.<sup>56</sup>

## Results

A total of 2402 young participants were included in the study. The sample was predominantly female (64.9%), with the majority aged 20–24 years (55.0%), and most were students (75.4%) at the time of recruitment. The most common form of psychopathological symptoms was absence of symptoms (40.0%) and comorbid anxiety–depression (34.0%), while depression only (18.0%) and anxiety only (7.0%) were less frequent (Table 1).

Differences in the distribution of psychopathological symptoms were observed by gender and age (Table 2). Female participants had a higher prevalence of comorbid anxiety–depression (39.7%) compared to the male participants (22.1%), while male participants showed a greater proportion of individuals with no symptoms (52.5%) compared to the female group (34.2%, respectively). However, comorbid anxiety–depression remained the most prevalent form of psychopathology in both groups. Additionally, young adults aged 20–24 years showed a higher prevalence of anxiety only (8.5%) compared to adolescents aged 15–16 years (4.7%). Despite these variations, comorbid anxiety–depression was consistently the most frequent condition across age groups.

Engagement in activities in sports in the past 30 days varied between psychopathological status, with a decreasing trend from no symptoms to anxiety only, depression only to comorbid anxiety–depression. Meanwhile, the engagement in arts activities in the past 30 days showed an increasing trend from no symptoms to anxiety only, depression only to comorbid anxiety–depression.

Changes in social capital were described according to the psychopathological group only in the cognitive dimension (Table 1). Participants with comorbid anxiety–depression reported the highest proportions of low cognitive social capital (92.4%) with similar proportions for the anxiety only and depression only groups (89% and 91.4%, respectively), while those without symptoms had the highest prevalence of high cognitive social capital (82.7%). In contrast, structural social capital showed similar distributions of low, medium and high structural social capital across psychopathological groups.

Both resilience and quality of life followed a downward trend according to psychopathological status. Participants without symptoms reported the highest median scores for both indicators, followed by those with anxiety only, depression only, and the lowest levels were observed in individuals with comorbid anxiety–depression for both measures.

**Table 1 – Description of sociodemographic variables and psychosocial scores according to psychopathological symptoms.**

| Characteristic                                               | No symptoms<br>(n = 965) | Anxiety<br>(n = 163) | Depression<br>(n = 454) | Comorbidity<br>(n = 820) |
|--------------------------------------------------------------|--------------------------|----------------------|-------------------------|--------------------------|
| Age group, n (%)                                             |                          |                      |                         |                          |
| 15–16                                                        | 435 (45.1)               | 51 (31.3)            | 212 (46.7)              | 382 (46.6)               |
| 20–24                                                        | 530 (54.9)               | 112 (68.7)           | 242 (53.3)              | 438 (53.4)               |
| Gender, n (%)                                                |                          |                      |                         |                          |
| Male                                                         | 428 (44.4)               | 59 (36.2)            | 148 (32.6)              | 180 (22.0)               |
| Female                                                       | 533 (55.2)               | 104 (63.8)           | 303 (66.7)              | 620 (75.9)               |
| Other                                                        | 4 (0.4)                  | 0 (0.0)              | 3 (0.7)                 | 17 (2.1)                 |
| Have children, n (%)                                         |                          |                      |                         |                          |
| Yes                                                          | 105 (10.9)               | 36 (22.1)            | 27 (6.0)                | 69 (8.4)                 |
| No                                                           | 859 (89.1)               | 127 (77.9)           | 426 (94.0)              | 751 (91.6)               |
| Main occupation, n (%)                                       |                          |                      |                         |                          |
| Employed or independent                                      | 161 (16.7)               | 33 (20.2)            | 40 (8.8)                | 89 (10.9)                |
| Student                                                      | 701 (72.6)               | 105 (64.4)           | 367 (80.8)              | 637 (77.7)               |
| Homemaker                                                    | 31 (3.2)                 | 17 (10.4)            | 11 (2.4)                | 42 (5.1)                 |
| Other                                                        | 4 (0.4)                  | 0 (0.0)              | 1 (0.2)                 | 3 (0.4)                  |
| No occupation                                                | 68 (7.0)                 | 8 (4.9)              | 35 (7.7)                | 49 (6.0)                 |
| Current job, n (%)                                           |                          |                      |                         |                          |
| No                                                           | 267 (27.7)               | 57 (35.0)            | 110 (24.2)              | 206 (25.2)               |
| Yes                                                          | 698 (72.3)               | 106 (65.0)           | 344 (75.8)              | 613 (74.8)               |
| Engagement in sports activities over the past 30 days, n (%) |                          |                      |                         |                          |
| Yes                                                          | 506 (52.5)               | 77 (47.2)            | 212 (46.7)              | 337 (41.1)               |
| No                                                           | 458 (47.5)               | 86 (52.8)            | 242 (53.3)              | 482 (58.9)               |
| Engagement in arts activities over the past 30 days, n (%)   |                          |                      |                         |                          |
| Yes                                                          | 275 (28.5)               | 50 (30.7)            | 156 (34.4)              | 296 (36.1)               |
| No                                                           | 690 (71.5)               | 113 (69.3)           | 298 (65.6)              | 523 (63.9)               |
| Structural social capital category, n (%)                    |                          |                      |                         |                          |
| Low                                                          | 197 (20.9)               | 27 (16.7)            | 81 (18.4)               | 169 (21.0)               |
| Medium                                                       | 513 (54.5)               | 92 (56.8)            | 255 (58.0)              | 473 (58.8)               |
| High                                                         | 231 (24.5)               | 43 (26.5)            | 104 (23.6)              | 163 (20.2)               |
| Cognitive social capital category, n (%)                     |                          |                      |                         |                          |
| Low                                                          | 796 (82.7)               | 145 (89.0)           | 415 (91.4)              | 753 (92.4)               |
| High                                                         | 167 (17.3)               | 18 (11.0)            | 39 (8.6)                | 62 (7.6)                 |
| Substance use, n (%)                                         |                          |                      |                         |                          |
| No                                                           | 310 (32.1)               | 39 (23.9)            | 88 (19.4)               | 171 (20.9)               |
| Yes                                                          | 655 (67.9)               | 124 (76.1)           | 366 (80.6)              | 648 (79.1)               |
| Number life events in the last year, median (IQR)            | 2 (2)                    | 2 (4)                | 2 (3)                   | 3 (4)                    |
| Number life events more than one year, median (IQR)          | 6 (6)                    | 7 (6)                | 7 (5)                   | 7 (5)                    |
| CD-RISC 10 score, median (IQR)                               | 27 (10)                  | 24 (10)              | 23 (9)                  | 21 (11)                  |
| MANSA score, median (IQR)                                    | 5.25 (1.25)              | 4.92 (1.17)          | 4.58 (1.25)             | 4.00 (1.42)              |

**Table 2 – Description of sociodemographic variables and psychosocial scores according to psychopathological symptoms.**

| Characteristic   | No symptoms | Anxiety   | Depression | Comorbidity |
|------------------|-------------|-----------|------------|-------------|
| Age group, n (%) |             |           |            |             |
| 15–16            | 435 (40.3)  | 51 (4.7)  | 212 (19.6) | 382 (35.4)  |
| 20–24            | 530 (40.1)  | 112 (8.5) | 242 (18.3) | 438 (33.1)  |
| Overall          | 965 (40.2)  | 163 (6.8) | 454 (18.9) | 820 (34.1)  |
| Gender, n (%)    |             |           |            |             |
| Male             | 428 (52.5)  | 59 (7.2)  | 148 (18.2) | 180 (22.1)  |
| Female           | 533 (34.2)  | 104 (6.7) | 303 (19.4) | 620 (39.7)  |
| Other            | 4 (16.7)    | 0 (0.0)   | 3 (12.5)   | 17 (70.8)   |
| Overall          | 965 (40.2)  | 163 (6.8) | 454 (18.9) | 817 (34.1)  |

n (%): percentages are calculated row-wise, summing to 100% within each row.

**Table 3 – Association between sociodemographic and psychosocial factors and psychopathological symptoms (regression model).**

| Reference category: no symptoms<br>Characteristic                            | Anxiety<br>OR (95% CI) | Depression<br>OR (95% CI) | Comorbidity<br>OR (95% CI) |
|------------------------------------------------------------------------------|------------------------|---------------------------|----------------------------|
| <i>Age group</i>                                                             |                        |                           |                            |
| 15–16                                                                        | 1                      | 1                         | 1                          |
| 20–24                                                                        | 1.48 (0.96, 2.26)      | 0.96 (0.73, 1.27)         | 0.96 (0.75, 1.24)          |
| <i>Gender</i>                                                                |                        |                           |                            |
| Male                                                                         | 1                      | 1                         | 1                          |
| Female                                                                       | 1.22 (0.84, 1.76)      | 1.56 (1.20, 2.02)         | 2.39 (1.88, 3.04)          |
| <i>Have children</i>                                                         |                        |                           |                            |
| Yes                                                                          | 1                      | 1                         | 1                          |
| No                                                                           | 0.57 (0.35, 0.91)      | 2.51 (1.54, 4.09)         | 1.69 (1.16, 2.46)          |
| <i>Current job</i>                                                           |                        |                           |                            |
| No                                                                           | 1                      | 1                         | 1                          |
| Yes                                                                          | 0.90 (0.62, 1.32)      | 1.14 (0.86, 1.52)         | 1.11 (0.86, 1.43)          |
| <i>Engagement in sports activities over the past 30 days</i>                 |                        |                           |                            |
| Yes                                                                          | 1                      | 1                         | 1                          |
| No                                                                           | 0.99 (0.69, 1.42)      | 1.08 (0.84, 1.39)         | 1.10 (0.88, 1.37)          |
| <i>Engagement in arts activities over the past 30 days</i>                   |                        |                           |                            |
| Yes                                                                          | 1                      | 1                         | 1                          |
| No                                                                           | 0.89 (0.60, 1.30)      | 0.89 (0.68, 1.16)         | 0.81 (0.64, 1.02)          |
| <i>Structural social capital</i>                                             |                        |                           |                            |
| Low                                                                          | 1                      | 1                         | 1                          |
| Medium                                                                       | 1.16 (0.72, 1.86)      | 1.14 (0.83, 1.57)         | 0.88 (0.67, 1.16)          |
| High                                                                         | 1.29 (0.75, 2.22)      | 1.08 (0.74, 1.57)         | 0.72 (0.51, 1.00)          |
| <i>Cognitive social capital</i>                                              |                        |                           |                            |
| Low                                                                          | 1                      | 1                         | 1                          |
| High                                                                         | 0.72 (0.43, 1.23)      | 0.56 (0.38, 0.82)         | 0.58 (0.41, 0.82)          |
| <i>Substance use</i>                                                         |                        |                           |                            |
| No                                                                           | 1                      | 1                         | 1                          |
| Yes                                                                          | 1.08 (0.71, 1.65)      | 1.94 (1.43, 2.63)         | 1.60 (1.23, 2.08)          |
| <i>Life event last year</i>                                                  | 1.13 (1.06, 1.20)      | 1.07 (1.02, 1.13)         | 1.19 (1.14, 1.24)          |
| <i>Life event more than a year</i>                                           | 1.05 (1.00, 1.10)      | 1.05 (1.02, 1.09)         | 1.10 (1.07, 1.13)          |
| <i>CD-RISC 10 score (resilience)</i>                                         | 0.96 (0.94, 0.99)      | 0.95 (0.94, 0.97)         | 0.92 (0.90, 0.93)          |
| OR: odds ratio; CI: confidence interval; total number of observations: 2260. |                        |                           |                            |

Table 3 presents the results of the regression analysis. Resilience showed a protective role across psychopathological groups, with similar associations between psychopathological symptom groups: anxiety only (OR 0.96, 95% CI: 0.94–0.99), depression only (OR 0.95, 95% CI: 0.94–0.97), and comorbid anxiety–depression (OR 0.92, 95% CI: 0.90–0.93). Regarding social capital, the cognitive dimension in its high category showed decreased risk in depression only (OR 0.56, 95% CI: 0.38–0.82) and comorbid anxiety–depression groups (OR 0.58, 95% CI: 0.41–0.82). Meanwhile, structural social capital did not have a protective role in either psychopathological group. Participants who were young adults, female, had low cognitive social capital, had previously used substances, and had experienced life events in the last year or more were more likely to exhibit comorbid anxiety–depression symptoms.

## Discussion

This multi-country study examined the relationship between psychosocial resources – specifically resilience and cognitive

social capital – and the presence of depression, anxiety, and comorbid anxiety–depression, among young people living in deprived urban areas of Bogotá, Lima, and Buenos Aires. Additionally, it described the sociodemographic characteristics, psychosocial resources, and quality of life of this population. Three key findings emerged: comorbid anxiety–depression was the most prevalent psychopathological presentation, low cognitive social capital and reduced resilience were associated with psychopathological symptoms, particularly comorbidity, and structural social capital showed no significant association with psychopathological status.

The high prevalence of comorbid anxiety–depression, consistent across age and sex groups aligns with evidence highlighting this condition's greater severity and functional impact compared to isolated anxiety or depression.<sup>18,57</sup> Importantly, our findings build upon prior research in Latin America by explicitly differentiating comorbidity,<sup>46</sup> an area often overlooked despite its relevance for prognosis.<sup>18,57</sup>

Interestingly, a substantial proportion of participants reported no psychopathological symptoms despite living in structurally disadvantaged urban contexts.<sup>58</sup> This suggests

the presence of individual or social protective mechanisms mitigating mental health risks in these environments.<sup>58</sup> This can be partly explained by a high rate of recovery as encountered in previous research done by our group.<sup>59</sup> This underscores the importance for the consideration of factors associated with the absence of symptoms to better understand how young individual adapt to adverse contexts. Another relevant point is that this adaptation in most cases is not through mental health interventions coming from health services.<sup>59</sup> Our study contributes to this literature by identifying cognitive social capital and resilience as potential protective factors in urban Latin American settings.

Notably, arts participation increased among individuals with psychopathological symptoms, while sports participation declined. These contrasting patterns may reflect both coping strategies and barriers to engagement. While arts-based activities have been linked to emotional expression and identity development among youth,<sup>60,61</sup> depressive and anxious symptoms may reduce motivation for physical activity. This underscores the importance of considering both barriers and facilitators when designing community-based interventions.

Our results confirm the protective role of resilience across all psychopathological groups, with the strongest association observed for comorbid anxiety–depression. Thus, the descending trend seen in our data can be explained by shared cognitive vulnerabilities between depression and anxiety<sup>62</sup> with additive or synergic effects, which in turn could modulate resilience.<sup>38</sup> This could point to possible interdependence between these variables. Although the majority of studies have focused on pathway models.<sup>41</sup> These findings are consistent with conceptualizations of resilience as both an individual capacity and a socially influenced process shaped by environmental factors.<sup>38</sup> However, our study relied on CD-RISC 10, which primarily capture individual traits,<sup>39,63</sup> potentially overlooking relational and contextual dimensions of resilience.

Cognitive social capital, reflecting perceptions of trust, reciprocity, and social cohesion,<sup>36</sup> was associated with a lower likelihood of depression and comorbid anxiety–depression, but no anxiety alone. These findings align with previous studies identifying cognitive social capital as a key protective factor for mental health.<sup>31</sup> However, potential biases, such as depressive cognitive distortions, warrant consideration as the values of social networks could be changed by depressive beliefs. In contrast, structural social capital showed no significant association with psychopathology, highlighting the importance of subjective social perceptions over mere network size or participation.<sup>46</sup> Thus, even though social capital has been linked to both the onset and course of psychopathology,<sup>32,64,65</sup> there is a need to differentiate between dimensions to determine dynamics in the interaction of these variables.

Framing our findings within the biopsychosocial model underscores the complex interplay between individual, social, and structural determinants of mental health.<sup>26</sup> Resilience and social capital do not operate in isolation but are embedded within socioeconomic and cultural contexts.<sup>35,43</sup> While our study controlled for some sociodemographic variables and the exposure to adverse vital events, and the recruitment was

carried out in areas of the cities identified by socioeconomic variables, these measures can have variation between individuals not accounted by the measurements done, limiting our ability to fully account for contextual influences. Furthermore, the lack of cultural adaptation studies for the resilience and social capital instruments used raises questions about the cross-cultural validity of these constructs in Latin American urban settings.

The ecological model of resilience provides an alternative lens to interpret these findings,<sup>35</sup> emphasizing the dynamic interaction between individuals and their environments in shaping resilience and mental health. Furthermore, previous research has shown that recovery in young people, in most cases, is not through mental health interventions coming from health services.<sup>59</sup> Thus, our results highlight the need for future research that integrates individual, relational, and structural dimensions of psychosocial resources to better understand their role in mental health outcomes in culturally diverse settings.

This study has several limitations. First, its cross-sectional design precludes establishing causal relationships. Second, the use of self-reported symptom scales may introduce reporting biases and does not replace clinical diagnoses. Moreover, the assessment was limited to anxiety, depression, and their comorbidity, leaving other relevant psychopathological symptoms unexamined. Third, comorbidity with mental disorders beyond anxiety and depression was not assessed, limiting the comprehensiveness of our mental health characterization. Additionally, substance use was evaluated as a dichotomous variable, without differentiating between occasional use and substance use disorders. Another relevant limitation is the impossibility of analyzing potential interactions between structural variables, psychosocial resources, and mental health outcomes. Due to the limited sample size, conducting stratified or moderated analyses would have compromised the precision of the estimates.

Despite these limitations, this study provides novel insights into the mental health of young people in vulnerable urban areas of Latin America, with new characterizations of psychopathological symptoms. The identification of cognitive social capital and resilience as potential protective factors suggests avenues for intervention development. Community-based strategies that foster social cohesion, trust, and resilience-building may contribute to reducing the burden of mental health disorders in this population. Nonetheless, as these constructs described highly interrelated processes, the effect seen can be represented in the cognitive and relational dimensions, meriting further research evaluating the interaction between dimension and modulating factors.

Future research should employ longitudinal designs with larger and more diverse samples to clarify causal pathways, incorporate comprehensive assessments of contextual variables and the use of dimensional measures of psychopathology, and prioritize the cultural adaptation and validation of measurement tools that provide a more ecologically valid understanding of individuals' social environments. Moreover, integrating qualitative approaches could deepen understanding of how youth in diverse Latin American con-

texts conceptualize and mobilize psychosocial resources in response to adversity.<sup>60,66</sup>

## Conclusion

This study provides new evidence on the relationship between resilience, social capital, and mental health symptoms among young people living in deprived urban areas of Latin America. Notably, comorbidity was the most prevalent and severe form of psychopathology, reinforcing the need to address it as a distinct and high-risk condition. These results emphasize that psychosocial resources, particularly cognitive social capital and resilience, may serve as protective factors against mental health problems in vulnerable urban contexts. However, these resources are shaped by broader structural, social, and cultural environments, which must be considered when designing and implementing interventions. Our study underscores the importance of adopting a comprehensive, context-sensitive approach to youth mental health in Latin America. Future research should incorporate longitudinal designs, culturally adapted measurement tools, and a broader set of contextual variables to deepen our understanding of how young people navigate adversity and mobilize psychosocial resources over time.

## Ethical approval

The study protocol for the OLA project and all procedures were approved by the Institutional Review Board (IRB) of the University of Buenos Aires on (02-10-2020), of the Pontificia Universidad Javeriana on November 20, 2020 (FM-CIE-1138-20), and from the Universidad Peruana Cayetano Heredia on November 16, 2020 (Constancia 581-33-20). Furthermore, this study was approved by the Research Ethics Committee of Queen Mary University of London on November 16, 2020 (QMERC2020/02). All methods were carried out in accordance with the guidelines set forth by the Declaration of Helsinki and Resolution 8430 of 1993. Study registration: ISRCTN99961401 (16/12/2020). Informed consent was obtained from young adults, or assent from 15 to 16 years old with written informed consent from their legal guardian. The informed consent was obtained at the initial assessment and at the 24-month follow-up.

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## Conflict of interests

None to declare.

## REFERENCES

1. Ferrari AJ, Santomauro DF, Mantilla AM, Shadid J, Ashbaugh C, Erskine HE, et al. Global, regional, and national burden of 12 mental disorders in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. *Lancet Psychiatry*. 2022;9:137–50.
2. Ferrari AJ, Charlson FJ, Norman RE, Patten SB, Freedman G, Murray CJL, et al. Burden of depressive disorders by country, sex age, and year: findings from the global burden of disease study 2010. *PLoS Med*. 2013;10:e1001547.
3. Santomauro DF, Mantilla Herrera AM, Shadid J, Zheng P, Ashbaugh C, Pigott DM, et al. Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic. *Lancet*. 2021;398:1700–12.
4. Erskine HE, Moffitt TE, Copeland WE, Costello EJ, Ferrari AJ, Patton G, et al. A heavy burden on young minds: the global burden of mental and substance use disorders in children and youth. *Psychol Med*. 2015;45:1561–3.
5. Copeland WE, Wolke D, Shanahan L, Costello J. Adult functional outcomes of common childhood psychiatric problems: a prospective, longitudinal study. *JAMA Psychiatry*. 2015;72:892–9.
6. Hohls JK, König HH, Quirke E, Hajek A. Anxiety, depression and quality of life – a systematic review of evidence from longitudinal observational studies. *Int J Environ Res Public Health*. 2021;18:12022.
7. Schlack R, Peerenboom N, Neuperdt L, Junker S, Beyer AK. The effects of mental health problems in childhood and adolescence in young adults: results of the KiGGS cohort. *J Health Monit*. 2021;6:3–19 [cited 2025 Jan 20]. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/35146318>
8. Agnafors S, Norman Kjellström A, Torgerson J, Rusner M. Somatic comorbidity in children and adolescents with psychiatric disorders. *Eur Child Adolesc Psychiatry*. 2019;28:1517–25.
9. Larsen B, Luna B. Adolescence as a neurobiological critical period for the development of higher-order cognition. *Neurosci Biobehav Rev*. 2018;94:179–95.
10. Uhlhaas PJ, Davey CG, Mehta UM, Shah J, Torous J, Allen NB, et al. Towards a youth mental health paradigm: a perspective and roadmap. *Mol Psychiatry*. 2023;28:3171–81.
11. Maselko J. Social epidemiology and global mental health: expanding the evidence from high-income to low- and middle-income countries. *Curr Epidemiol Rep*. 2017;4:166–73.
12. Patel V, Araya R, Chatterjee S, Chisholm D, Cohen A, De Silva M, et al. Treatment and prevention of mental disorders in low-income and middle-income countries. *Lancet*. 2007;370:991–1005.
13. Saraceno B, Van Ommeren M, Batniji R, Cohen A, Gureje O, Mahoney J, et al. Barriers to improvement of mental health services in low-income and middle-income countries. *Lancet*. 2007;370:1164–74 [cited 2025 Jan 10]. Available from: [www.thelancet.com](http://www.thelancet.com)
14. Sharan P, Gallo C, Gureje O, Lamberte E, Mari JJ, Mazzotti G, et al. Mental health research priorities in low- and middle-income countries of Africa, Asia Latin America and the Caribbean. *Br J Psychiatry*. 2009;195:354–63.
15. Duarte C, Hoven C, Berganza C, Bird H, Miranda CT. Child mental health in Latin America: present and future epidemiologic research. *Int J Psychiatry Med*. 2003;33:203–22.
16. Visser K, Bolt G, Finkenauer C, Jonker M, Weinberg D, Stevens GWJM. Neighbourhood deprivation effects on young people's mental health and well-being: a systematic review of the literature. *Soc Sci Med*. 2021;270:113542.

17. Maj M. "Psychiatric comorbidity": an artefact of current diagnostic systems? *Br J Psychiatry*. 2005;186:182-4.
18. Cummings CM, Caporino NE, Kendall PC. Comorbidity of anxiety and depression in children and adolescents: 20 years after. *Psychol Bull*. 2014;140:816-45.
19. Iorfino F, Hickie IB, Lee RSC, Lagopoulos J, Hermens DF. The underlying neurobiology of key functional domains in young people with mood and anxiety disorders: a systematic review. *BMC Psychiatry*. 2016;16:156.
20. ter Meulen WG, Draisma S, van Hemert AM, Schoevers RA, Kupka RW, Beekman ATF, et al. Depressive and anxiety disorders in concert – a synthesis of findings on comorbidity in the NESDA study. *J Affect Disord*. 2021;284:85-97.
21. Melton TH, Croarkin PE, Strawn JR, McClintock SM. Comorbid anxiety and depressive symptoms in children and adolescents: a systematic review and analysis. *J Psychiatr Pract*. 2016;22:84-98.
22. Morales-Muñoz I, Mallikarjun PK, Chandan JS, Thayakaran R, Upthegrove R, Marwaha S. Impact of anxiety and depression across childhood and adolescence on adverse outcomes in young adulthood: a UK birth cohort study. *Br J Psychiatry*. 2023;45:212-20.
23. Wolk CB, Carper MM, Kendall PC, Olino TM, Marcus SC, Beidas RS. Pathways to anxiety-depression comorbidity: a longitudinal examination of childhood anxiety disorders. *Depress Anxiety*. 2016;33:978-86.
24. Jenkins PE, Ducker I, Gooding R, James M, Rutter-Eley E. Anxiety and depression in a sample of UK college students: a study of prevalence, comorbidity, and quality of life. *J Am Coll Health*. 2021;69:813-9.
25. Caron C, Rutter M. Comorbidity in child psychopathology: concepts, issues and research strategies. *J Child Psychol Psychiatry*. 1991;32:1063-80.
26. Álvarez AS, Pagani M, Meucci P. The clinical application of the biopsychosocial model in mental health: a research critique. *Am J Phys Med Rehabil*. 2012;91:S173-80.
27. Velez G, Gibbs T, Fortuna L, Adam B, De Faria L, Elmaghraby R, et al. Social determinants of mental health in children and youth. Presidential task force on social determinants of mental health; 2022.
28. Yang P, Hernandez BS, Plastino KA. Social determinants of mental health and adolescent anxiety and depression: findings from the 2018 to 2019 National Survey of Children's Health. *Int J Soc Psychiatry*. 2023;69:795-8.
29. Shucksmith J, Spratt J, Philip K, McNaughton R. A critical review of the literature on children and young people's views of the factors that influence their mental health. Edinburgh: NHS Health Scotland; 2009.
30. Hirota T, Paksarian D, He JP, Inoue S, Stapp EK, Van Meter A, et al. Associations of social capital with mental disorder prevalence, severity, and comorbidity among U.S. adolescents. *J Clin Child Adolesc Psychol*. 2022;51:970-81.
31. Ehsan AM, De Silva MJ. Social capital and common mental disorder: a systematic review. *J Epidemiol Community Health*. 2015;0:1-8, <http://dx.doi.org/10.1136/jech-2015-205868>.
32. Daskalakis NP, Bagot RC, Parker KJ, Vinkers CH, de Kloet ER. The three-hit concept of vulnerability and resilience: toward understanding adaptation to early-life adversity outcome. *Psychoneuroendocrinology*. 2013;38:1858-73.
33. Rakesh G, Fellow P, Zannas AS, Malik Z, Clausen A, Marx CE, et al. Resilience as a translational endpoint in the treatment of PTSD. *Mol Psychiatry*. 2019;24:1268-83.
34. Weitzel EC, Löbner M, Glaesmer H, Hinz A, Zeynalova S, Henger S, et al. The association of resilience with mental health in a large population-based sample (LIFE-Adult-Study). *Int J Environ Res Public Health*. 2022;19:9601.
35. Ungar M. The social ecology of resilience: addressing contextual and cultural ambiguity of a nascent construct. *Am J Orthopsychiatry*. 2011;81:1-17.
36. Claridge T. Dimensions of social capital – structural, cognitive and relational. Social Capital Research; 2018.
37. Harphan T, Grant E, Thomas E. Measuring social capital within health surveys: key issues. *Health Policy Plan*. 2002;17:106-11.
38. Southwick SM, Bonanno GA, Masten AS, Panter-Brick C, Yehuda R. Resilience definitions, theory, and challenges: interdisciplinary perspectives. *Eur J Psychotraumatol*. 2014;5:25338.
39. Windle G. What is resilience? A review and concept analysis. *Rev Clin Gerontol*. 2011;21:152-69.
40. Ledogar RJ, Fleming J. Social capital and resilience: a review of concepts and selected literature relevant to aboriginal youth resilience research. *Pimatisiwin*. 2008;6:25-46.
41. Masten AS, Lucke CM, Nelson KM, Stallworthy IC. Resilience in development and psychopathology: multisystem perspectives. *Annu Rev Clin Psychol*. 2025;55:23, <http://dx.doi.org/10.1146/annurev-clinpsy-081219>.
42. De Silva MJ, Huttly SR, Harphan T, Kenward MG. Social capital and mental health: a comparative analysis of four low income countries. *Soc Sci Med*. 2007;64:5-20.
43. Pfefferbaum B, Van Horn RL, Pfefferbaum RL. A conceptual framework to enhance community resilience using social capital. *Clin Soc Work J*. 2017;45:102-10.
44. Caldas de Almeida JM. Mental health services development in Latin America and the Caribbean: achievements, barriers and facilitating factors. *Int Health*. 2013;5:15-8.
45. Priebe S, Fung C, Brusco LI, Carbonetti F, Gómez-Restrepo C, Uribe M, et al. Which resources help young people to prevent and overcome mental distress in deprived urban areas in Latin America? A protocol for a prospective cohort study. *BMJ Open*. 2021;11:e052339.
46. Gomez-Restrepo C, Diez-Canseco F, Brusco LI, Jassir Acosta MP, Olivar N, Carbonetti FL, et al. Risk and protective factors for depression and anxiety among young people from deprived urban neighbourhoods in South America: a case-control study in Bogotá, Buenos Aires and Lima [Internet]; 2023 [cited 2025 Jan 15]. Available from: <https://www.ssrn.com/abstract=4671831>
47. Wu Y, Levis B, Riehm KE, Saadat N, Levis AW, Azar M, et al. Equivalency of the diagnostic accuracy of the PHQ-8 and PHQ-9: a systematic review and individual participant data meta-analysis. *Psychol Med*. 2020;50:1368-80.
48. Kroenke K, Strine TW, Spitzer RL, Williams JBW, Berry JT, Mokdad AH. The PHQ-8 as a measure of current depression in the general population. *J Affect Disord*. 2009;114:163-73.
49. Johnson SU, Ulvenes PG, Øktdalen T, Hoffart A. Psychometric properties of the GAD-7 in a heterogeneous psychiatric sample. *Front Psychol*. 2019;10:01713.
50. Soler Sánchez MI, Meseguer de Pedro M, García Izquierdo M. Propiedades psicométricas de la versión española de la escala de resiliencia de 10 ítems de Connor-Davidson (CD-RISC 10) en una muestra multiocupacional. *Rev Latinoam Psicol*. 2016;48:159-66.
51. Blanco V, Guisande MA, Sánchez MT, Otero P, Vázquez FL. Spanish validation of the 10-item Connor-Davidson Resilience Scale (CD-RISC 10) with non-professional caregivers. *Aging Ment Health*. 2019;23:183-8.
52. Ali R, Awwad E, Babor TF, Bradley F, Butau T, Farrell M, et al. The Alcohol Smoking and Substance Involvement Screening Test (ASSIST): development, reliability and feasibility. *Addiction*. 2002;97:1183-94.
53. Heubeck B, O'Sullivan C. An exploration into the nature, frequency and impact of school hassles in the middle school years. *Aust Psychol*. 1998;33:130-7.

54. Knowles G, Gayer-Anderson C, Beards S, Blakey R, Davis S, Lewis K, et al. Mental distress among young people in inner cities: the Resilience Ethnicity and AdolesCent Mental Health (REACH) study. *J Epidemiol Community Health* (1978). 2021;75:515–22.
55. Priebe S, Huxley P, Knight S, Evans S. Application and results of the Manchester Short Assessment of Quality of Life (MANSA). *Int J Soc Psychiatry*. 1999;45:7–12.
56. RStudio Team. Rstudio: integrated development for R; 2020.
57. Garber J, Weersing VR. Comorbidity of anxiety and depression in youth: implications for treatment and prevention. *Clin Psychol Sci Pract*. 2010;17:293–306.
58. Kasturi S, Oguoma VM, Grant JB, Niyonsenga T, Mohanty I. Prevalence rates of depression and anxiety among young rural and urban australians: a systematic review and meta-analysis. *Int J Environ Res Public Health*. 2023;20(800):1–16.
59. Roach A, Stanislaus Sureshkumar D, Elliot K, Hidalgo-Padilla L, Van Loggerenberg F, Hounsell L, et al. One-year recovery rates for young people with depression and/or anxiety not receiving treatment: a systematic review and meta-analysis. *BMJ Open*. 2023;13:e072093.
60. Gómez-Restrepo C, Casasbuenas NG, Ortiz-Hernández N, Bird VJ, Acosta MPJ, Restrepo JMU, et al. Role of the arts in the life and mental health of young people that participate in artistic organizations in Colombia: a qualitative study. *BMC Psychiatry*. 2022;22(757):1–11.
61. Hidalgo-Padilla L, Vilela-Estrada AL, Toyama M, Flores S, Ramirez-Meneses D, Steffen M, et al. Using arts-based methodologies to understand adolescent and youth manifestations representations, and potential causes of depression and anxiety in low-income urban settings in Peru. *Int J Environ Res Public Health*. 2022;19:15517.
62. Hong RY, Cheung MWL. The structure of cognitive vulnerabilities to depression and anxiety: evidence for a common core etiologic process based on a meta-analytic review. *Clin Psychol Sci*. 2015;3:892–912.
63. Connor KM, Davidson JRT. Development of a new Resilience scale: the Connor-Davidson Resilience scale (CD-RISC). *Depress Anxiety*. 2003;18:76–82.
64. Holz NE, Berhe O, Sacu S, Schwarz E, Tesarz J, Heim CM, et al. Early social adversity, altered brain functional connectivity and mental health. *Biol Psychiatry*. 2023;93:430–41.
65. Wickrama KAS, O'Neal CW, Lee TK. Cumulative socioeconomic adversity developmental pathways, and mental health risks during the early life course. *Emerging Adulthood*. 2016;4:378–90.
66. Giebel C, Gabbay M, Shrestha N, Saldarriaga G, Reilly S, White R, et al. Community-based mental health interventions in low- and middle-income countries: a qualitative study with international experts. *Int J Equity Health*. 2024;23(19):1–12.