Brief interventions in adolescents and young adults in Latin America: a scoping review

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Abstract. Evidence indicates that Brief Interventions (BIs) are an effective method for reducing alcohol consumption and related problems among adolescents and young adults. Most previous research has come from high-income countries with different cultural backgrounds and drinking practices from those of Latin-America, while the extent of evidence for BI efficacy among the latter remains unexplored. **Objective:** In this scoping review, we describe Latin-American research on BI among adolescents and young adults. **Methods:** Data was compiled for each Latin-American country in the Medline, Lilacs, and Cochrane databases, without temporal or language restrictions. Database searches were complemented by hand-searches. After eliminating repeated and unrelated articles, 22 articles were included and analyzed separately by two investigators. **Results:** The selected articles were published between 2004 and 2020, and were from Brazil, Colombia, Mexico, and Argentina. Most were empirical studies, and near half were experimental with adequate randomization. Most of the studies were carried out in educational contexts, such as universities and schools. The Alcohol Use Disorder Identification Test (AUDIT) was the most used screening tool, although a wide variety of measures were used. **Discussion:** The main limitations of these articles were small sample sizes, as well as a lack of unified outcome criteria. The effectiveness and the mechanisms underlying efficacy are areas in need of further research. Since 2004, there has been steady but still scarce research on BI among adolescents and young adults. Advancement of public health will require prioritizing efforts to further our understanding of BI in Latin-American contexts.

Keywords: Brief Intervention; Young Adults; Adolescents; Latin America; Alcohol.

Introduction

Alcohol drinking constitutes a complex public health challenge for Latin American countries (LAC), which have high levels of per capita consumption (World Health Organization [WHO], 2018) but scarce resources with which to face this problem. In particular, the rates of high-risk drinking and its negative consequences are increasing among adolescents and young adults (Conde et al., 2016; Linden-Carmichael & Lanza, 2018).

Brief Interventions (BIs) have shown to be a helpful method for reducing harmful drinking among various populations worldwide (Carey et al., 2007). In the last few years, new lines of research have aimed to understand which components of BI (such as normative feedback) are responsible for its efficacy in reducing alcohol consumption (Vallentin-Holbech et al., 2018), as well as the personal or social characteristics that moderate or mediate BI effects (Gaume et al., 2014).

Because this is an emerging area of research, literature reviews are needed to compile, overview, and synthesize the evidence, and identify gaps in the research. However, most of the available literature reviews have focused on North American and European publications (Fachini, 2012; Reid & Carey, 2015; Samson & Tanner-smith, 2015; Tanner-Smith & Lipsey, 2015). Characterizing BI research in LAC remains a necessity since these countries present different patterns of alcohol consumption and sociodemographic characteristics that may require different and culturally tailored approaches (Savic et al., 2016). As far as we know, only two literature reviews have focused on research from LAC (Marques & Furtado, 2004; Ronzani et al, 2019), the most recent of which comprises literature up to 2016, and neither of which targets adolescents or young adults. Assessing the current evidence for BI among LAC is of uttermost importance given the large proportion of young people in these countries, and the increasing rates of alcohol consumption and related problems (Pan American Health Organization [PAHO], 2018; WHO, 2018). An assessment of the literature on BI among this population will identify research gaps and the various forms of available evidence to inform practice and policy-making.

In this scoping review, we will provide an overview of research on BI efficacy for adolescents and young adults in Latin-American countries. We will analyze: (1) Publication characteristics, including country, year, language, and journal of publication; (2) Article characteristics, including study design (e.g. experimental), control group modalities (e.g. screening), any moderators or mediators analyzed, screening tool(s), outcomes, number and length of follow-ups, sample sizes, and main limitations reported in articles; (3) BI characteristics, including the population (e.g. university students), level of alcohol consumption targeted (e.g. risky consumption), whether they target only alcohol consumption or both alcohol and other drugs, modality of the interventions (group or individual sessions, were

face-to-face or virtual), the number of sessions, and the BI approach used (e.g. motivational interview).

Methods

Eligibility criteria

All articles addressing BI among adolescents and young adults in LAC were eligible for inclusion in the study. There were no restrictions on language or year of publication. Both empirical and non-empirical articles were included. When there was more than one article derived from a study, all of them were included. Articles not focusing on our target population and repeated articles were excluded. Articles assessing BI for other drug use were included only if they also targeted alcohol use.

Information sources

Data searches were conducted for each LA country in the Medline, Lilacs and Cochrane databases, and complemented by hand-searches (e.g., looking at articles' references). Structured and systematic searches were conducted through June 2020. The searches were conducted within the full text, using the following terms: ("brief intervention" OR "motivational interview") AND ("teenagers" OR "adolescents" OR "young adults" OR "students") AND "alcohol".

Procedure

All searches, title and abstract screenings, as well as the selection of the articles, were performed independently by two investigators (PVG and TS). Firstly, investigators selected a total of 80 articles based on their titles and abstracts. The two investigators then compared these articles and discussed final inclusions. Articles were excluded if they did not report results from Latin-American studies, were not BI studies, or the BI target population was not specifically adolescents or young adults. Hand-searches were also done by screening the references of the included articles, and 19 articles were thereby added according to the same inclusion and exclusion criteria. Articles deemed potentially eligible were retrieved for full-text review, and discrepancies were resolved by consensus. Finally, 22 articles were chosen for the scoping review (see PRISMA flow diagram in figure 1). Categories were developed to analyze articles by the two investigators together.

Categories

The included articles were classified on the following characteristics:
- Publication characteristics: country, year, language, and journal of publication.
- Article characteristics: (1) study design, which was divided into secondary sources analyses (e.g., meta-analysis, systematic review or narrative review) or empirical quantitative studies (e.g., experimental, quasi-experimental, non-experimental,

longitudinal), (2) control groups' modalities (e.g. screening, waiting list, brochure), (3) whether moderator/mediators evaluations were included, (4) screening tool(s) used, (5) outcomes, (6) number and length of follow-ups, (7) sample sizes, and (8) main limitations reported.

- BI characteristics: (1) population (e.g. university students), (2) level of alcohol consumption targeted (e.g. risky consumption), (3) whether they targeted only alcohol or included other drugs, (4) modality of the interventions (individual or group setting, face-to-face or virtual), (5) quantity of sessions, and (6) the BI approach used (e.g. motivational interview).

The two researchers classified articles separately, and final decisions were made by consensus.

Figure 1
PRISMA Flow Diagram
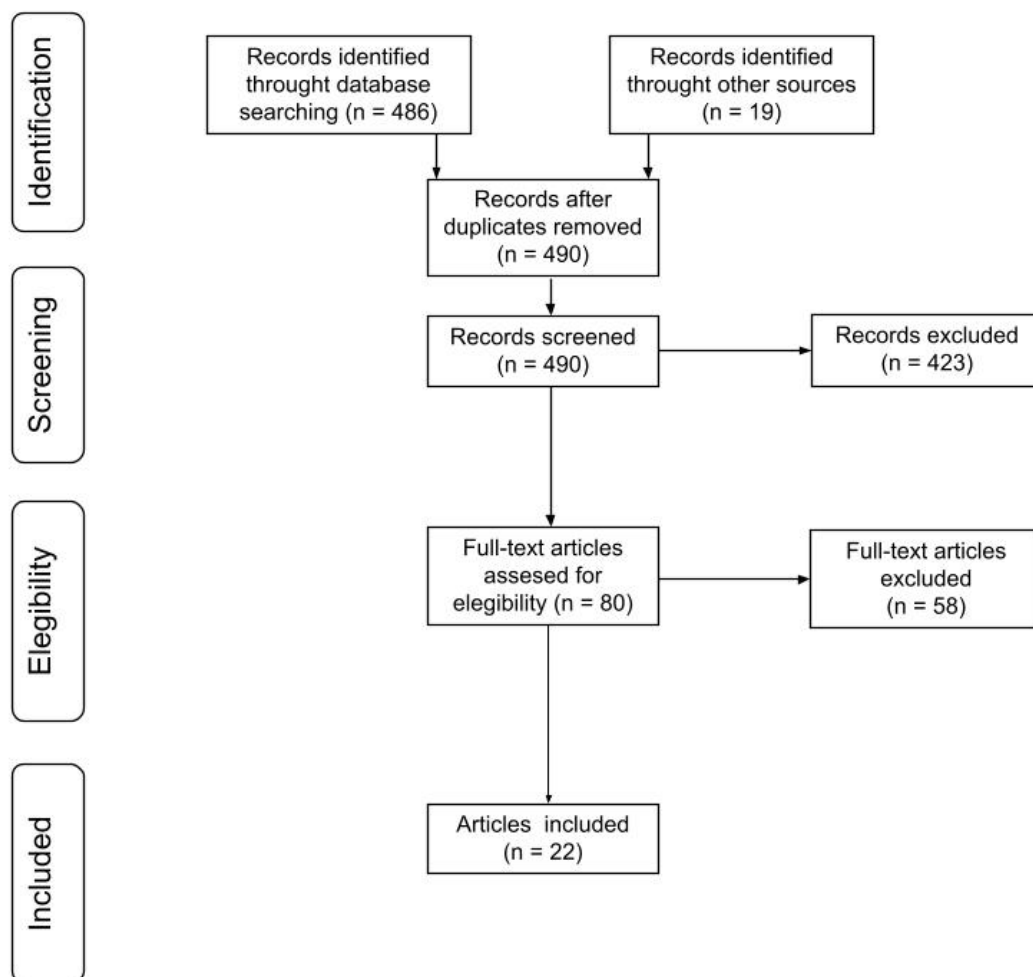
Results

Publication characteristics

Publication of research on BI among adolescents and young adults in LAC spanned from 2004 to 2020. Publication has been steady, with small peaks in some years, such as 2008 (4 articles), 2015 (4 articles), 2012 (3 articles), and 2018 (3 articles).

The 22 articles included in this review were from Brazil, Argentina, Mexico, and Colombia. Most articles come from Brazil, comprising twelve of the 22 articles included in this review (54.5%), followed by Mexico with seven (31.8%). Meanwhile, only two were from Colombia, and one from Argentina. Eleven of the articles were published in English (50%), eight in Spanish (36.4%), and three in Portuguese (13.3%). Table 1 summarizes the articles in terms of their year of publication, first author, language, country, and journal of publication.

Table 1

Latin American research on BI among adolescents and young adults.

Publication Date	Authors	Language	Country	Journal
2004	De Micheli, Fisberg, & Formigoni	Portuguese	Brazil	Revista da Associação Médica Brasileira
2008	Martínez Martínez, Pedroza Cabrera et al	Spanish	Mexico	Revista Mexicana de Análisis de la Conducta
2008	Simao et al.	English	Brazil	Alcohol & Alcoholism
2008	Matínez Martínez, Salazar Garza et al.	Spanish	Mexico	Salud Mental
2008	Martínez Martínez, Pedroza Cabrera & Salazar Garza	Spanish	Mexico	Anuario de Investigación en Adicciones
2009	Salazar Garza, Martínez Martínez & Barrientos Casarrubias	Spanish	Mexico	Salud Mental
2011	Salazar Garza et al.	Spanish	Mexico	Universitas Psychologica

2011	Segatto et al.	English	Brazil	Revista Brasileira de Psiquiatria
2012	Fachini et al.	English	Brazil	Substance Abuse Treatment, Prevention, and Policy
2012	Flórez-Alarcón et al.	Spanish	Colombia	Rev. Salud Pública
2012	Martínez Martínez et al.	Spanish	Mexico	Salud Mental
2015	Bárcenas Meléndez et al.	Spanish	Mexico	Anuario de Investigación de Adicciones
2015	Barros Junqueira et al.	English	Brazil	Journal of Addictions Nursing
2015	Oliveira Christoff et al.	English	Brazil	Addictive Behaviours
2015	Silva & Tucci	Portuguese	Brazil	Psicologia: Reflexão e Crítica
2016	D'Souza-Li & Harris	English	Brazil	Current Opinion in Pediatrics
2017	Reyes-Rodríguez et al.	English	Colombia	Psicologia: Teoria e Pesquisa
2018	Sawicki et al.	English	Brazil	Revista Brasileira de Enfermagem
2018	Conde et al.	English	Argentina	Revista Ciencias de la Salud
2018	Bedendo, Andrade & Noto	Portuguese	Brazil	Revista Panamericana de Salud Pública
2019	Bedendo, Ferri et al.	English	Brazil	Drug and Alcohol Dependence
2020	Bedendo, McCambridge & Gaume	English	Brazil	Addiction

Article characteristics

   Of the 22 articles, three were secondary source analyses: one meta-analysis, one systematic review, and one narrative review. The other 19 were empirical studies: thirteen experimental, two quasi-experimental, one

longitudinal, one case study, one descriptive study, and one using mixed-methods. Six of the experimental studies were randomized controlled trials (RCTs), summarized in Table 2.

Four experimental studies were considered between-subject studies (they compared two or more groups before and after the interventions). Although these studies used randomization to assign participants to each condition, they did not fulfill all of the characteristics of an RCT (e.g., small sample size, large rates of desertion across the follow-ups, or other factors contaminated the results; Critical Appraisal Skills Programme, 2020). Finally, three were within-subject studies evaluating outcomes in the same participants before and after the intervention.

All but three studies were designed to test BI efficacy. One tested a Brazilian nursing education program to assess knowledge and attitudes towards patients with alcohol use disorders and towards BI, and two assessed coping styles, consumption, and participation in a BI program.

Table 2

Characteristics of the RCTs

Article	Lang.	Screening	Comparison	Control group	Outcome	Results	Follow up	Sample sizes
Martínez-Martínez, Pedroza Cabrera, Vacío Muro et al., 2008	SPA	POSIT, initial interview, LIBARE	Face-to-face BI and control group	Waiting list	SU of alcohol consumption in the last 3 months and level of risk	Reduction of SU average and high-risk consumption	One, three, and six months	Baseline: 52; last follow-up: 40
Segatto et al., 2011	ENG	A scale developed by the researchers to assess alcohol consumption in the six hours before ER visit	Face-to-face BI and control group	Brochure	Days of alcohol consumption, alcohol-related problems, risk level, perception of future risk, and readiness to change	Significant reduction in alcohol-related problems and alcohol abuse in both groups	Three months	Baseline: 186; last follow-up: 149
Oliveira Christoff	ENG	ASSIST (computeri	Face-to-face BI, web BI	Screening	ASSIST scores by substance, by total	ASSIST involvement scores decreased in all groups. For alcohol,	Three months	Baseline: 815; last

et al., 2015		zed or face to face)	and control group		scores, and by each item	web BI showed better results than control in specific involvement scores, and both interventions showed a higher reduction in every item scores		follow-up: 333
Conde et al., 2018	ENG	AUDIT	Face-to-face BI and two control groups	Screening	Consumption´s reduction or abstinence maintenance, risk level reduction or maintenance for those low or no risk, alcohol-related problems reduction, or maintenance without them	Quantity of consumption and high-risk consumption lower in the intervention group.	Four months	Baseline: 167; last follow-up: 150
Bedendo et al., 2019	ENG	AUDIT	Personalized NF and control group.	Screening	AUDIT scores, number of consequences, SU by occasion	Personalized NF reduced the number of typical drinks, compared to the control group. The motivation for receiving the BI moderated the intervention effects	One, three, and six months	Baseline: 30.012; last follow-up: 826

| Bedendo et al., 2020 | ENG | AUDIT | Three types of web-based NF: Personalized NF full intervention, NF only, and Consequences Feedback only | None | AUDIT scores, number of consequences, frequency of consumption, and SU by occasion | NF only and Consequences Feedback Only were more effective compared with full intervention. The motivation for receiving the BI moderated the intervention effects | One, three, and six months | Baseline: 5476; last follow-up: 1576 |

Notes. BI = Brief Intervention; NF = Normative Feedback; SU = Standard Units; AUDIT= Alcohol Use Disorder Identification Test; ASSIST = Alcohol, Smoking, and Substance Involvement Test. Lang= Language; SPA= Spanish; ENG= English.

Including the RCT studies, a total of ten studies compared BI to a control group. Five of them compared the intervention group with a screening group, three compared the BI group to a group in a waiting list, and two used an informational brochure for the control group.

Only two of the six RCTs included a possible moderator of BI efficacy: participant motivation to receive information about their alcohol consumption (Bedendo et al, 2018; Bedendo et al, 2019). None of the studies examined possible mediators for BI.

The instruments used to measure consumption of alcohol or other drugs were heterogeneous. However, the Alcohol Use Disorder Identification Test (AUDIT; Babor et al., 2001) was utilized in six studies and was the most used screening instrument, followed by five articles using the LIBARE (in Spanish, Retrospective Base Line of Alcohol Consumption; Sobell et al., 1979), and four articles using the POSIT (Problem Oriented Screening Instrument for Teenagers; Mariño et al, 1998).

The outcome measures were also heterogeneous, varying among AUDIT, ASSIST (Alcohol, Smoking, and other Substance Involvement Screening Test; WHO, 2011), and RAPI scores (Rutgers Alcohol Problem Index; White & Labouvie, 1989), consequences of alcohol consumption, frequency of consumption, number of SU (standard units) consumed per occasion, day or month, level of risk, days of alcohol consumption, and relapses. Other related outcomes included achieving the proposed goal, self-efficacy, patterns of alcohol consumption, perception of future risk, readiness to change, motivation, coping strategies used, quality of life, and strategies used to resist consumption.

Regarding the number of follow-ups, five studies followed up with participants only once, while nine did between two and four follow-ups. Most studies (7) included six-month follow-ups, while three had three-month follow-ups, and three followed participants after one year.

Regarding sample sizes, 58% of the studies had samples of less than 150 participants, and only two (10.5%) had more than 1000 participants. Statistical power was rarely reported, with only three articles that clearly indicated it. Sample sizes among RCTs showed a wide range; from 50 to 30012 at baseline and from 40 to 1576 at the last follow-up.

Three main limitations described by the authors of the 19 empirical articles were (1) the absence of a control group in nearly half of them, (2) small sample sizes, and (3) participant attrition.

BI characteristics

Regarding the studies' target populations, seven were university students and seven were high school students. Only two included other settings (i.e., adolescents in emergency rooms and in primary care). Four articles did not specify the location where the studies were carried out.

The level of alcohol consumption targeted by the BIs was risky drinking in almost all of the studies; four studies did not have any consumption level exclusion criteria (e.g., alcohol dependence), and two included only participants with moderate and superior risk consumption. Most studies targeted alcohol use for intervention, with only four that included both use of alcohol and other drugs. The format of the BIs was individual sessions in 16 studies, while three implemented BI in group sessions. Most BIs were delivered face-to-face, with only four studies using sessions conducted online.

Regarding quantity of sessions, most studies implemented one session of BI, with eight using programs with more than one session. And with respect to BI approach, seven of the studies implemented a program called "Programa de Intervención Breve para Adolescentes que Inician el Consumo de Alcohol y otras Drogas" (PIBA; Martínez et al., 2005), six used a Motivational Interview (MI) modality, two used a Normative Feedback approach, one used a combination of MIs and harm reduction, and one used only harm reduction. It is important to note that the PIBA program, implemented in Mexico, is a specialized intervention for alcohol and other drugs consumption that uses MI principles as background, along with cognitive-behavioural techniques.

Discussion

Since 2004, research on the efficacy of BI among adolescents and young adults has been steady, with about one article published per year. However, there is still a scarcity or absence of evidence in several countries and cultural contexts. According to our scoping review, the existing literature on BI in Latin American countries comes from only four countries, and most of these from just two: Brazil and Mexico. This finding is to be expected considering that these two countries not only invest more resources in research, but also have a long tradition of study in the field of alcohol (Cremonte et al., 2018). Interestingly, despite Brazil having produced most of the research, articles in the Portuguese language were scarce. Although research in Spanish is more frequent than in Portuguese, English was the most common language of publication. Nevertheless, half of the articles were written in either Spanish or Portuguese, and this could represent a barrier to disseminate this research worldwide. These results highlight how countries' and regions' research policies affect the production of research, for instance, facilitating funding to provide language services for authors, or not.

Of the 19 empirical studies we found, six were RCTs that showed mixed results. Three of RCTs found BI to be successful in reducing alcohol outcomes compared to a control group (Bedendo et al., 2019; Conde et al., 2018; Martinez Martinez et al., 2008). Conversely, other studies found only partial or no support for the efficacy of BI in this context (de Oliveira Christoff et al., 2015; Segatto et al., 2018). Further, many of the empirical studies either did not include a control group or included an active control

group (e.g., an informational brochure), which was sometimes reported as a limitation (Gual, et al., 2016). In this regard, our findings suggest further research should be developed to evaluate BI efficacy and effectiveness among LAC youth.

We found two RCT studies that evaluated a potential moderating variable of BI efficacy, which was motivation in both cases. One of them also consisted of a component dismantling of web-based BI, which contributes to knowing the weight of active ingredients by analyzing them separately (Bedendo et al., 2019). However, besides efficacy and effectiveness, our results point to a gap in the knowledge about BI's underlying mechanisms of change, especially considering that effect sizes are usually low and that it is not clear which components of BI are causally related to the outcomes (Gaume et al, 2014; Reid & Carey, 2015; Samson & Tanner-Smith, 2015). This is true not only for this region but also worldwide (Gaume et al., 2014).

The articles analyzed here show heterogeneity in their methodologies, including study design, instruments used to measure substance use, and outcome measures. This finding is in line with a recent systematic review of BIs among the general population from Latin America (Ronzani et al., 2016). This situation is problematic and precludes a valid comparison of the different BI results. This has also been signaled as a characteristic of BI research worldwide (Tanner-Smith & Risser, 2016). Recently, BI scholars have been endeavoring to standardize what outcomes should be measured, and how (Shorter et al., 2019). We are hopeful that future research on BI in the Latin American context profits from such efforts.

Our results indicate that BI approaches are also heterogeneous. That having been said, MI principles were used in almost all BI programs, showing a high level of consensus about its proper implementation. This finding is in alignment with studies from other countries with a large tradition of research in this topic showing that MI approaches produce better results for reducing alcohol consumption than other models (Samson & Tanner-Smith, 2015; Tanner-Smith & Lipsey, 2015). It should be noted that in the case of Mexico, a special BI program for youth has been implemented (Martínez et al., 2005).

Almost all BIs were implemented face-to-face, with only four studies using online delivery. The lack of BI programs available online is not only a characteristic of LAC; this gap has also been found among high-income countries (Patton et al., 2013). However, online interventions are a promising approach because fewer resources are needed to implement them and quickly reach a large audience (Bedendo, et al., 2018). Despite evidence that online interventions are well received among young adults from high-income countries, cultural aspects should be considered for their implementation in LAC. Latin culture often values face-to-face contact with health professionals (Conde & Cremonte, 2015) and this could be a barrier

to developing web-based BIs. Thus, more research is needed in our region to establish online interventions as an effective delivery method for BIs.

Regarding the populations studied in these articles, most were carried out with samples of university or high school students. These settings are strategic to researchers for the accessible recruitment of adolescents and young adults. Furthermore, students are an at-risk population, as it is well known that university students are more likely to engage in high-risk alcohol consumption than other young adults (Patrick, et al., 2017). Adolescents usually begin to drink early when they are attending school and BIs could be an opportunity to delay the age of onset of this behaviour (Tanner-Smith & Lipsey, 2015). However, non-schooled adolescents or non-university young adults are underrepresented by these studies, and more research is necessary within emergency and primary health care settings, among others.

The main limitations reported in the articles consisted of low sample sizes, lack of a control group, high attrition rates, and short follow-ups (i.e., six months or less). Future studies should focus on implementing strategies to address these limitations, which might be related to social factors in LAC, including scarce funding for research and a lack of political/economic stability.

Our findings characterize the state of BI research among youth in LAC and point to knowledge gaps that should be approached in future studies. However, there are several limitations to this review that should be noted. First, although we searched for articles in three different databases and supplemented this with hand-searches, some articles could have been missed (e.g., those on grey literature). Second, some of the articles included in this scoping review could have been reporting results from the same original study, leading to an overestimation of BI activity in LAC.

To conclude, BI research in LAC among adolescents and young adults has been scarce, but there have been promising initial results. Since the first article was published in 2004 until today, about one article per year has been produced on the subject. More studies will be needed to provide firm evidence for the efficacy and effectiveness of BIs for youth in the Latin-American context. In this sense, specifically needed are quantitative studies with sound designs (such as RCTs) and larger sample sizes (to provide sufficient statistical power and account for attrition), using longer temporal follow-ups and using standardized outcome measures. Also, it is necessary to test mechanisms of change, using either quantitative or qualitative approaches. Finally, considering most studies had been performed in educational settings, it is necessary to incorporate new settings different from schools and universities.

Latin-American countries have large youth populations with increasing alcohol consumption rates, and this constitutes a challenge for public health. Brief interventions have shown to be effective in other regions, but our results underline the need to strengthen the body of research

evidence on the topic in the Latin-American context in order to inform practice and policy-making.

Availability of data and material
The data that support the findings of the present study are available from the corresponding author upon reasonable request.

Conflict of Interest
The authors declare no conflict of interest.

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