

1 **Feasibility, acceptability, and preliminary effectiveness of a community-based group psychosocial**  
2 **support model for conflict survivors in Colombia: An assessment of in-person and remote**  
3 **intervention modalities during the COVID-19 pandemic**  
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6 Leah James<sup>1,2\*</sup>, Nicolás García<sup>3</sup>, Juan F. Botero<sup>1</sup>, Michel Rattner<sup>3,4</sup>  
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8 <sup>[1]</sup>Heartland Alliance International, Chicago, USA

9 <sup>[2]</sup>Institute of Behavioral Science, University of Colorado, Boulder, Colorado

10 <sup>[3]</sup>Department of Psychology, Universidad de Los Andes, Bogota, Colombia

11 <sup>[4]</sup>Department of Psychology, Palo Alto University, Palo Alto, USA  
12

13 **Corresponding Author:**

14 Leah E. James: [leahemilyjames@gmail.com](mailto:leahemilyjames@gmail.com)  
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19 **Abstract**  
20

21 **Background.** Community-based psychosocial support (CB-PSS) interventions utilizing task-sharing and  
22 varied (in-person, remote) modalities are essential strategies to meet mental health needs, including  
23 during the COVID-19 pandemic. However, knowledge gaps remain regarding feasibility and  
24 effectiveness.

25 **Methods.** This study assesses feasibility, acceptability, and preliminary effectiveness of a CB-PSS  
26 intervention for conflict-affected adults in Colombia through parallel randomized controlled trials, one  
27 delivered in-person ( $n = 165$ ) and the other remotely ( $n = 103$ ), implemented during the COVID-19  
28 pandemic and national protests. Interventions were facilitated by non-specialist community members and  
29 consisted of 8 problem-solving and expressive group sessions.

30 **Findings.** Attendance was moderate and fidelity was high in both modalities. Participants in both  
31 modalities reported high levels of satisfaction, with in-person participants reporting increased comfort

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32 expressing emotions and more positive experiences with research protocols. Symptoms of depression,  
33 anxiety, and PTSD improved among in-person participants, but there were no significant changes for  
34 remote participants in comparison to waitlist controls.

35 **Implications.** This CB-PSS intervention appears feasible and acceptable in both in-person and remote  
36 modalities and associated with reduction in some forms of distress when conducted in-person but not  
37 when conducted remotely. Methodological limitations and potential explanations and areas for future  
38 research are discussed, drawing from related studies.

39 **Impact Statement**

40  
41 Although a significant body of research supports use of community-based mental health and psychosocial  
42 support (MHPSS) interventions for conflict survivors, gaps remain regarding evidence for group models  
43 utilizing task-shifting and varied (in-person, remote) modalities. This study assesses the feasibility,  
44 acceptability, and preliminary effectiveness of a community-based psychosocial support group  
45 intervention for conflict-affected adults in Colombia through parallel trials, one delivered in-person and  
46 the other remotely, implemented during the COVID-19 pandemic and national protests. Interventions  
47 were facilitated by trained, non-specialist community members and consisted of 8 weekly problem-  
48 solving and expressive group sessions of approximately 120 minutes each. Attendance was moderate and  
49 fidelity was high in both modalities. Participants in both modalities reported high levels of satisfaction  
50 with the intervention, but those in the in-person group reported higher levels of comfort with emotional  
51 expression and positivity about some research procedures. In these samples, in-person group participation  
52 was effective in reducing symptoms of depression, anxiety, and PTSD. However, no effects were found  
53 for remote group participation in comparison to control. Results suggest that trained community members  
54 can meaningfully impact the mental health of their peers when interventions are implemented in-person  
55 but raise important questions about use of remote modalities for psychosocial support groups. When  
56 examined alongside qualitative data collected through companion studies, results suggest that additional  
57 work is needed to identify best practices to ensure that remote group interventions engage participants,  
58 protect confidentiality, and facilitate emotional expression and exchange of peer support. Methodological  
59 limitations are discussed, including that participants were able to choose whether to participate in-person  
60 or remotely; future work with randomization to modality is recommended. This work offers key insights  
61 for informing future research and optimal scale-up of this and related community-based psychosocial  
62 support models in Colombia and globally.

63

## Introduction

64  
65  
66 A growing body of evidence demonstrates increased risk of mental health and psychosocial problems  
67 among populations exposed to conflict and displacement (Carpiniello, 2023; Mesa-Vieira et al., 2022).  
68 Coexisting stressors associated with life in many low- and middle-income countries (LMICs) such as  
69 poverty, unemployment, limited access to education, and socio-political instability can exacerbate risk  
70 (Alloh et al., 2018; Rathod et al., 2017). The COVID-19 pandemic has further intensified negative mental  
71 health outcomes globally (Kola et al., 2021; Wu et al., 2021). Despite clear need, LMICs often suffer  
72 from insufficient human and financial resources to provide mental health and psychosocial support  
73 (MHPSS) services; some estimates suggest that close to 75% of those requiring care are unable to receive  
74 it (World Health Organization [WHO], 2021).

75  
76 Colombia has struggled with an internal armed conflict persisting over five decades, conducted amidst  
77 widespread poverty and inequality (Cuartas Ricaurte et al., 2019). Despite the signing of a peace  
78 agreement in 2016, violence against civilians continues due to disputes between dissident illegal armed  
79 forces, narcoterrorism, and insufficient enforcement of the peace agreement (Barragan, 2017; Nilsson and  
80 González Marín, 2020). As of May 2023, the Colombian Victims Unit Registry reported more than 12  
81 million violent events and over 9 million victims, the majority of whom had been internally displaced  
82 (Unidad para las Víctimas [UV], 2024). Moreover, refugees fleeing Venezuela's civil conflict and  
83 associated economic troubles have flooded into Colombia; as of 2023, 2.4 million Venezuelan refugees  
84 are registered in Colombia's temporary protection statute (Migración Colombia, 2023).

85  
86 Research has shown high levels of psychological distress, including symptoms associated with  
87 posttraumatic stress disorder (PTSD), generalized anxiety, and depression as well as impaired functioning  
88 in Colombian internally displaced populations (IDP) and other armed conflict victims (Bell et al., 2012;  
89 Campo-Arias et al., 2014; Castro-Camacho et al., 2023; Cuartas Ricaurte et al., 2019; Gómez-Restrepo et  
90 al., 2016). Colombia's 2016 peace agreement includes provisions for implementation of MHPSS services  
91 for victims and perpetrators of violence, emphasizing the need for culturally adapted intervention  
92 approaches, coordination between national, regional and local agencies, capacity strengthening of  
93 MHPSS service providers, including non-specialist/lay providers, and integration of global initiatives  
94 such as the Mental Health Gap Action Program (Idrobo et al., 2018; WHO, 2016). Ensuring equitable  
95 access to MHPSS services among victims is considered critical for the success of the peace process but

96 enforcement is highly challenging (Idrobo et al., 2018). The COVID-19 pandemic has further impeded  
97 progress by severely impacting access to public services, as well as both formal and informal employment  
98 opportunities and the financial stability of the community overall (Gillies et al., 2021).

99

100 Increasingly, community-based MHPSS interventions have been employed to promote wellbeing and to  
101 prevent development and exacerbation of symptoms associated with mental health conditions in LMICs,  
102 with encouraging effects (for a review, Barbui et al., 2020). In Colombia, promising interventions include  
103 psychosocial support group models based in community settings, which draw on community strengths  
104 and practices to collectively address problems and facilitate exchange of peer support (Aranguren-  
105 Romero and Rubio-Castro, 2018; Osorio-Cuellar et al., 2017; Pacichana-Quinayáz et al., 2016). In some  
106 cases, community-based MHPSS activities adopt a task-sharing approach, in which facilitation of  
107 activities is conducted by trained non-specialist community members in an effort to fill gaps resulting  
108 from the limited number of professionals in many LMIC community settings (WHO 2008). This approach  
109 has potential to facilitate cultural adaptation, enhance community buy-in, help to build community  
110 capacity, and support sustainability (Javadi et al., 2017; Le et al., 2022). A growing global evidence base  
111 demonstrates feasibility, acceptability, and effectiveness of MHPSS interventions provided by non-  
112 specialists in community settings, especially when facilitators have strong community ties and are  
113 supported through comprehensive training and consistent supervision (Le et al., 2022; Raviola et al.,  
114 2019). However, task-sharing approaches also entail challenges and limited evidence exists regarding the  
115 effectiveness of such models, including in Colombia and the Latin American region and when services  
116 are provided remotely (e.g., Le et al., 2022).

117

118 In the context of the COVID-19 pandemic, additional innovative methods have been employed to increase  
119 access to services (Armijos et al., 2023; Moreno et al., 2020). Remote service delivery through tele-mental  
120 health and/or digital tools is a key strategy to enhance uptake of services during circumstances that impede  
121 in-person participation, including pandemics, conditions of community violence, and when travel is  
122 otherwise difficult (e.g., in some rural areas) (Fu et al., 2020; IFRC, 2020) and was used widely during the  
123 COVID-19 pandemic (Witteveen et al., 2022). Such approaches also have potential to reduce exposure to  
124 stigma and attenuate barriers to intervention attendance caused by work and family commitments which  
125 can be especially problematic in impoverished communities (Naslund et al., 2019; Sijbrandij et al., 2017).

126 However, remote approaches also introduce significant challenges and little work has examined feasibility  
127 or effectiveness of community support group models utilizing remote modalities (Ibragimov et al., 2022).

128  
129 The current study aims to contribute to filling these gaps by assessing a community-based group  
130 psychosocial support (CB-PSS) intervention utilizing a task sharing approach delivered through two  
131 parallel trials, one conducted in-person and one remotely, to conflict survivors residing in Colombia's  
132 Pacific Coast. This intervention, facilitated by Community Psychosocial Agents (CPAs) (non-  
133 professional members of the community with prior training and experience providing PSS), aims to  
134 reduce distress and functional impairment and enhance community resilience through use of collective  
135 problem solving and emotional regulation activities. The current study examines feasibility, acceptability,  
136 and preliminary effectiveness of both the in-person and remote trials. Additionally, it explores  
137 demographic and baseline mental health predictors of attendance and moderators of outcomes to better  
138 understand when and for whom this intervention is likely to be feasible and effective and compares  
139 findings of in-person and remote modalities.

140

141

## Methods

142

### Study design

143

144 This study utilizes a randomized controlled trial design (registration ICRTSN32986363) to test a  
145 community-based psychosocial support group (CB-PSS) intervention ("Grupo de Apoyo Comunitario")  
146 provided in two delivery modalities: in-person and remote. For ethical and accessibility reasons,  
147 participants were able to choose whether to participate in the in-person group trial or in the remote group  
148 trial. The study was originally planned as a single RCT, but in light of participant choice of modality, results  
149 for each modality are presented as separate trials for ease of interpretation. Participants in the waitlist  
150 control condition were offered the interventions after completing the second assessment interview  
151 (approximately five months after enrollment).

152

### Setting

154 This research was conducted in Quibdó, the capital city of the Chocó department, and the rural community  
155 of Tutunendo (about 15 minutes northeast of Quibdó), Colombia. This region, located on the Colombian  
156 Pacific coast, has long been affected by the country's internal armed conflict and by drug trafficking, which  
157 have contributed to widespread corruption and poverty. Nearly 65% of Choco residents live in poverty

158 compared to 39% nationally (Departamento Nacional de Planeación, 2023). According to Colombia's  
159 National Victims Registry (UV, 2024), more than 529,000 individuals in Chocó were registered as victims  
160 of the country's armed conflict as of May 2023; of these, 26% are direct victims of forced displacement,  
161 and 24% report witnessing conflict-related homicide. Additionally, as of May 2023, more than 3,900  
162 Venezuelans reside in Chocó and are registered in Colombia's temporary protection statute (Migración  
163 Colombia, 2023). Colombia suffers from inequitable distribution of health services (including MHPSS),  
164 with Chocó being one of the departments with the greatest shortage (Rojas-Bernal et al., 2018; WHO,  
165 2021).

166  
167 During the experimental phase of this study (March-August 2021), rates of COVID-19 infection were high  
168 in Quibdó, peaking in May 2021 (Instituto Nacional de Salud, 2023). The National Health Institute  
169 calculated that the incidence rate for the municipality was 10,257 for 100,000 inhabitants, the highest in the  
170 department. In addition, between April and June 2021, Colombia experienced country-wide protests against  
171 the government and associated police violence and human rights violations, resulting in food and gas  
172 shortages, impeding transportation, and potentially affecting wellbeing more generally (Naciones Unidas,  
173 2021).

174

### 175 **Participants**

176 Participants were recruited by Community Psychosocial Agents (CPAs) using a non-probabilistic snowball  
177 sampling approach, drawing from their networks of local organizations including neighborhood  
178 associations, migrant associations, and associations of victims of the armed conflict, as well as through the  
179 Women's Department at the Quibdó Mayor's office (a body dedicated to promoting essential services for  
180 women). In some cases, CPAs presented the research opportunity to community members during meetings  
181 of these organizations, and in others, organizational leaders provided CPAs with contact lists of community  
182 members expressing interest (with participant permission). CPAs asked potential participants to share  
183 information about the opportunity with others who might be interested.

184

185 Adult (age 18 or over) residents of Quibdó and the rural community of Tutunendo who reported that they  
186 were exposed to conflict violence (assessed by self-report during the recruitment process) were eligible to  
187 participate. Community members who had participated in ACOPLE's MHPSS services in the past were  
188 excluded, as were those reporting significant risk of suicide/self-harm (measured through Heartland

189 Alliance International's [HAI] suicide risk assessment) or potential psychosis (determined by interviewer  
190 perception of hallucination, delusion or disordered thought in the participant), both assessed during the pre-  
191 intervention interview. Referrals to the National Health Service were made for individuals requiring further  
192 care. CPAs used a written recruitment script to share the opportunity with potential participants. Those who  
193 expressed interest completed an informed consent process (see Ethics section below) and provided verbal  
194 consent. CPAs then asked participants to choose their preferred intervention modality (in-person or remote)  
195 and scheduled pre-intervention interviews.

196  
197 The decision to give participants the opportunity to choose their modality was made based on results of a  
198 pilot study (Rattner et al., 2023) in which primary lesson learned was that participants wished to decide for  
199 themselves whether to participate in MHPSS services in-person or remotely. Participants and staff shared  
200 that determining whether to participate in-person or remotely is a highly personal decision with important  
201 implications for accessibility, particularly in an emergency context (Armijos et al., 2023). The research  
202 team determined that randomly assigning participants to modality would compromise equitable access to  
203 services and therefore that allowing participants to make this choice was a more ethical option amid the  
204 COVID-19 and national protest emergencies. The sample size was calculated to provide sufficient  
205 participant numbers in each trial (in-person and remote) to produce medium effect sizes, while allowing for  
206 potential that different numbers of participants would choose to join each modality and for participant  
207 attrition. A total of 165 in-person and 103 remote participants consented to participate in the study and  
208 completed pre-intervention assessment interviews. See Table 1.

209  
210 **Randomization**

211 Participants were based in 27 neighborhoods of Quibdó within six *comuna* (an administrative division used  
212 to group neighborhoods in Colombia). Participants within each comuna were individually randomized to  
213 intervention and waitlist control conditions. This approach allowed for feasible transport and aligned with  
214 the 'community-based' focus of bringing together members of the same community. Randomization was  
215 done by the research manager using EXCEL's RAND function. In-person modality randomization resulted  
216 in 82 intervention participants (distributed into 10 intervention groups) and 83 waitlist control participants.  
217 Remote modality randomization resulted in 52 intervention participants (distributed into eight intervention  
218 groups) and 51 waitlist control participants. Waitlist control participants received the same intervention  
219 between August and November 2021.



220

**221 Blinding**

222 To allow for blinding to condition among interviewers, assessment interviews were conducted by  
223 different CPAs than those who facilitated the intervention groups for those participants. It was not  
224 possible to blind participants to condition due to the nature of the intervention.

225

**226 Intervention**

227 The CB-PSS model assessed in this study is based on an intervention approach originally developed through  
228 the Association of Organizations for Emotional Support (ACOPLE) program funded by the United States  
229 Agency for International Development (USAID). HAI implemented ACOPLE from 2010 to 2020 in  
230 partnership with the National Association of Displaced Afro-Colombians (AFRODES), the Institute for  
231 Research and Development in the Prevention of Violence and Promotion of Social Coexistence  
232 (CISALVA), the Universidad del Valle, and Johns Hopkins University. ACOPLE provided individual  
233 (Bonilla-Escobar et al., 2018) and group (Osorio-Cuellar et al., 2017) MHPSS services delivered by  
234 Community Psychosocial Agents (CPAs) with training and supervision by professionals to conflict-affected  
235 communities of Afro-Colombian descent on Colombia's Pacific Coast.

236

237 Whereas ACOPLE's interventions were initially focused on resolving trauma-related reactions associated  
238 with the armed conflict, in later years the group model evolved to increase focus on community problem-  
239 solving and culturally-informed expressive activities, to accommodate needs shared by participants and  
240 staff. As part of the current project, an updated intervention protocol was drafted by HAI's Colombian  
241 MHPSS professionals in collaboration with CPAs, and subsequently, an in-depth facilitation guidance with  
242 detailed examples of how each session could be run was developed with CPA leadership (HAI, 2020, 2021).  
243 The current intervention ("Grupo de Apoyo Comunitario") consists of eight sessions, including an  
244 introductory session and three collaborative problem-solving sessions interspersed with four expressive  
245 sessions drawing from culturally-informed artwork and dance, designed to strengthen emotional regulation.  
246 Problem-solving sessions were informed by WHO's (2016b) Problem Management Plus (PM+) protocol  
247 and consisted of collaboratively listing problems shared by group members, choosing and defining a  
248 problem for discussion, considering ideas non-judgmentally and selecting useful strategies, developing an  
249 action plan, and finally reviewing outcomes in a subsequent session. Expressive sessions entailed  
250 identification and sharing of emotions through creative activities such as drawing a mandala, creating a

251 paper mask, dance and body movement, and creating a ‘heroes’ story. Each session included a relaxation  
252 or visualization activity (e.g., butterfly hug or safe space visualization) and frequent opportunities for  
253 exchange of peer support. While activities were the same in both the in-person and remote modalities, the  
254 manuals also included guidance for adaptation to a remote format, for example, ways to incorporate the  
255 “chat” function on Zoom to enhance peer interaction and tips for supporting participants to complete  
256 artwork independently using materials delivered to their homes and then to share with peers using their  
257 phone cameras.

258  
259 Each intervention group was facilitated by two CPAs (eight total CPAs). All CPAs were women of Afro-  
260 Colombian descent and members of the Quibdó community known for their work in neighborhood or  
261 municipality level women’s and victims’ organizations. All had prior training in the ACOPLÉ project and  
262 experience facilitating ACOPLÉ MHPSS activities; some had originally been participants in these activities  
263 before applying to facilitate. CPAs participated in two weeks of intensive training (one prior to the pilot  
264 and another before the RCT) on the updated CB-PSS group protocol, and weekly group supervision  
265 conducted by MHPSS professionals. They were accompanied in sessions by either a psychologist or a social  
266 worker who monitored sessions and provided feedback for discussion in supervision sessions. Session  
267 monitors also completed fidelity checklists to assess whether all CPAs completed all components planned  
268 for that session.

269  
270 Ten in-person intervention groups and eight remote groups were conducted, with 7-10 participants per  
271 group. In-person groups were conducted in centrally located community centers with adherence to  
272 biosecurity protocols while remote groups were conducted through online calls using the Zoom platform.  
273 Remote participants received mobile internet credit prior to each session (approximate value \$2) and were  
274 able to borrow smartphones if needed (25 participants did so). Before the groups began, CPAs completed  
275 remote service safety planning checklists with participants, designed to encourage private and safe  
276 participation (e.g., to prevent being overheard by household members or coworkers) and provided brief  
277 training on use of Zoom. In-person participants received travel funds sufficient for non-public transport to  
278 reduce risk of COVID-19 exposure (approximate value \$1) as well as PPEs (masks and hand sanitizer) for  
279 use during group sessions. Both groups received snacks and supplies for each session (approximate value  
280 \$2.5); these were delivered to the homes of remote participants.

281

282 Some staff and participants were infected by COVID-19 during the implementation period, resulting in  
283 delays in session scheduling both for the in-person and remote groups. In-person groups were more affected,  
284 pausing for approximately three weeks on average, with one group suspended for eight weeks. No changes  
285 were made to the intervention protocol.

### 287 **Feasibility**

288 Feasibility was assessed through 1) participant attendance, which was documented by CPAs and  
289 observers during each group session, and 2) intervention fidelity, using fidelity checklists completed by  
290 psychologist or social worker observing each group session. Fidelity checklists were developed by the  
291 research team based on the intervention protocol and consisted of between 15 and 21 key activities for  
292 each of the eight sessions, each of which were checked off as completed or not completed by observers  
293 (i.e., supervisors) in each group session. A total fidelity score representing the percentage of sessions  
294 attended was calculated for each intervention group.

### 296 **Acceptability and effectiveness outcomes**

297 All participants were interviewed prior to the intervention (PRE, March-April 2021) and after the  
298 intervention group had finished the intervention (POST, July-August 2021). The PRE assessment  
299 included three sections: 1) sociodemographic measures; 2) primary and secondary outcome measures (see  
300 Table 2), and 3) risk screening measures (suicide and self-harm, exposure to and perpetration of violence,  
301 and psychosis, used to confirm eligibility). The POST assessment included the primary and secondary  
302 outcome measures, as well as the Reactions to Research Participation Questionnaire (RRPQ) (Newman et  
303 al., 2001). Intervention participants also completed an intervention acceptability survey of 13 items. The  
304 RRPQ and the acceptability survey were used to assess acceptability of both research and intervention  
305 activities, while the outcome measures were used for preliminary assessment of intervention effects.  
306 Primary outcome measures assessing distress (anxiety, depression, and PTSD) have been used historically  
307 with the ACOPLÉ project, while additional measures were added as part of a cross-study initiative  
308 designed to measure the same constructs across studies. Spanish versions of measures were used when  
309 available (WHODAS; Escala de Resiliencia Comunitaria); otherwise, measures were translated to  
310 Spanish and then back-translated to check translation quality by the research team. The depression,  
311 anxiety, and PTSD tools (HSCL-25 and PCL-C) had been translated and used previously by the ACOPLÉ  
312 project.

313  
314 Assessment interviews were conducted by CPAs in Spanish using the KOBO Toolbox platform on  
315 tablets. Interviews were conducted in person (with COVID-19 protections in place) or remotely (by  
316 phone), in line with modality preferences expressed by participants. The CPAs had 12 days of training on  
317 research interview skills and protocols, including piloting of tools. At post-intervention, 25 in-depth semi-  
318 structured individual interviews were conducted with a randomly selected subset of participants and a  
319 focus group discussion was conducted with staff by researchers at the Universidad de Los Andes.  
320 Qualitative findings are presented separately (Chaparro Buitrago et al., 2024).

321  
322 **Statistical Analysis**

323 Descriptive statistics were used to assess the balance between trial arms and differences between  
324 modalities at baseline (t-test for continuous variables and Chi Squared for categorical variables).  
325 Treatment effects were estimated with an intent-to-treat (ITT) and a per-protocol (PP) approach (Thabane  
326 et al., 2013). Multilevel regression models with random intercepts were used to represent intra-individual  
327 variance across time and to test the effect of intervention, the interaction of assignment to intervention  
328 (Intervention vs. Control) and time (Pre vs. Post) were included as fixed effects.

329  
330 For the ITT approach, multilevel models were estimated with data from all participants that were  
331 randomized to the control and treatment groups. Missing data in outcome variables was addressed using  
332 Maximum Likelihood estimation (Sullivan et al., 2018). For the PP approach, multilevel models were  
333 estimated with data from participants that completed at least four intervention sessions (based on  
334 discussion with the intervention team). Multilevel models were conducted using the package lme4 (Bates  
335 et al., 2014) in R statistical software (R Core Team, 2023). The effect size measure presented for the  
336 estimated treatment effect is the Partial Eta Squared ( $\eta^2_p$ ) and the effect size presented for the random  
337 intercept of individuals is the Intra Class Correlation (ICC).

338  
339 Sensitivity analyses were performed to explore if changes in estimation resulted in different results. First,  
340 PP analyses were rerun while changing the cut-off for inclusion based on number of sessions attended  
341 (zero to six) (SM2). Second, inverse probability weighting was used to estimate the PP results with a  
342 four-session cut-off by adding weights at the individual level. Weighting was done based on predictors of  
343 attendance for each modality trial (see SM3 for a detailed statistical analysis). Finally, multilevel models

344 including the community intervention group as a third level variable built to identify the effects of  
345 clustering by intervention group on outcomes.

346  
347 Finally, moderation analyses were performed with the per-protocol in-person and remote samples to  
348 explore whether demographic and baseline levels of outcome variables moderate treatment effects.  
349 Moderation analyses consisted of linear regression with the change scores (post-scores minus pre-score)  
350 of primary outcomes as dependent variables and the predictors were the interaction between intervention  
351 and moderator.

### 352 353 **Ethical considerations**

354 Ethical approval was received from institutional review boards (IRBs) at both Heartland Alliance  
355 International and Universidad de Los Andes. CPAs conducted individual consent processes with each  
356 participant, including providing hard copy consent forms which they read aloud to participants. Participants  
357 provided verbal informed consent which was recorded by CPAs. Use of verbal rather than written consent  
358 allowed the team to avoid recording participant names on consent forms (the only place in which names  
359 would have been recorded) and therefore better protect confidentiality, which is especially important to  
360 victims of the armed conflict who may have concerns about being identifiable or monitored. This approach  
361 also simplified the process of gathering consent for remote participants contacted by phone. All participant  
362 data were identified using codes and stored in secure research team computers. The post-intervention  
363 interview included items selected from the RRPQ to assess participants' reactions to the research process  
364 and monitor for potential negative effects.

## 365 366 **Results**

### 367 368 **Sociodemographic and baseline measures**

369 Demographic and baseline outcome measures for in-person and remote group participants overall and in  
370 experimental and control groups are presented in Table 1. Participants who chose to participate in-person  
371 were significantly older ( $M = 40.8$  years,  $SD = 16$ ) than those who chose to participate in remote modality  
372 ( $M = 35.4$  years,  $SD = 11.8$ ),  $p = .001$ . Almost all (97%) of participants in the remote modality lived in  
373 urban areas, in contrast to 78% of those in the in-person modality ( $p < .001$ ). There were more unemployed  
374 and informally employed participants in the in-person modality, and more participants who were formally  
375 employed or work at home (domestic duties/childcare) in the remote modality ( $p < .03$ ). At baseline, those

376 in the remote modality reported more functional impairment on the WHODAS than in-person participants  
377 ( $M_{\text{in-person}} = 1.51$ ,  $M_{\text{remote}} = 1.66$ ,  $p = .04$ ).

378  
379 There were no significant differences in sociodemographic variables between control and treatment groups  
380 in the in-person or remote trials. Regarding baseline outcome variables, in-person participants reported a  
381 higher baseline level of depression ( $M = 1.18$ ,  $SD = 0.61$ ) than the control group ( $M = 0.98$ ,  $SD = 0.55$ ) ( $p$   
382 = .03). In the remote trial, there were no differences between the intervention and control groups for primary  
383 outcomes at baseline.

384  
385 **Feasibility**  
386 *Intervention Attendance*  
387 In the in-person trial, most participants (62.2%) attended 4 or more sessions. A quarter (24.4) attended zero  
388 sessions, while 13.4% attended 1-3 sessions. In the remote trial, most participants (65.4%) attended 4 or  
389 more sessions, 11.5% attended zero sessions, and 23.1% attended 1-3 sessions. See Table 3.

390  
391 *Predictors of attendance*  
392 In the in-person modality, older age positively predicted attendance ( $\beta = 0.07$ ,  $p < 0.001$ ,  $R^2 = 0.10$ ). For  
393 the remote modality, being employed ( $\beta = 3.11$ ,  $p = 0.01$ ,  $R^2 = 0.18$ ) or working to take care of one's  
394 household ( $\beta = 2.08$ ,  $p = 0.03$ ,  $R^2 = 0.18$ ) positively predicted attendance compared to being unemployed.

395  
396 *Fidelity*  
397 Mean fidelity score for groups in the in-person modality was 96% (range 91% to 99%) and for the remote  
398 modality was 97% (range 89% to 100%).

399  
400 **Acceptability**  
401 *Intervention Acceptability*  
402 Participants in both in-person and remote modalities reported being highly satisfied with the intervention  
403 overall. Participants reported they felt the sessions were private, secure, comfortable, allowed them to feel  
404 supported and heard, and were culturally respectful. In-person participants indicated that they felt more  
405 comfortable expressing themselves emotionally in sessions than did remote participants ( $\text{diff} = 0.22$ ,  $p =$

406 0.04) and, at trend level, reported more risk to safety than did remote participants (diff = 0.33,  $p = 0.05$ ).  
407 See Table 4.

408

#### 409 *Research Acceptability*

410 On the RRPQ-R, participants in both modalities were generally positive about their participation in the  
411 research. Those in the in-person trial reported better understanding of the informed consent (diff = 0.12,  $p$   
412 = 0.02) and were more likely to believe that the research would be useful for others (diff = 0.34,  $p < 0.001$ )  
413 than those in the remote trial. See Table 4.

414

#### 415 **Intervention effect estimation**

##### 416 *In-person trial*

417 Significant in-person ITT intervention effects were found for symptoms of depression with -0.18 ( $p = 0.03$ ,  
418  $\eta^2_p = 0.03$ ), for anxiety with a -0.19 change ( $p = 0.03$ ,  $\eta^2_p = 0.03$ ), and PTSD with a -0.27 change ( $p < 0.001$ ,  
419  $\eta^2_p = 0.05$ ). Consistently, significant in-person PP intervention effects were found for depression with -0.25  
420 change ( $p = 0.01$ ,  $\eta^2_p = 0.06$ ), anxiety with -0.26 change ( $p = 0.01$ ,  $\eta^2_p = 0.06$ ), and PTSD with -0.29 change  
421 ( $p = 0.01$ ,  $\eta^2_p = 0.06$ ). Effect sizes for PP were moderate and larger than those in the ITT approach. No  
422 effects were found for secondary outcomes in the ITT or PP sample. See Table 5.

423

##### 424 *Remote trial*

425 No intervention effects were found in the ITT or PP analyses for the remote modality. See Table 5.

426

##### 427 *Comparison of pre and post intervention outcomes*

428 Pre- and post-intervention means, SDs, and significance levels for t-tests comparing pre- and post-  
429 intervention means are presented in SM Table 1.

430

#### 431 **Sensitivity analyses for treatment effects**

##### 432 *Session attendance sensitivity analysis*

433 Consistent statistically significant results were found for depression, anxiety, and PTSD outcomes across  
434 all attendance cut-offs in the in-person modality, with small to moderate effect sizes ( $\eta^2_{p\text{ depression}} = 0.04$  to  
435 0.10;  $\eta^2_{p\text{ anxiety}} = 0.03$  to 0.06;  $\eta^2_{p\text{ PTSD}} = 0.04$  to 0.07). There were no consistent significant effects in the  
436 sensitivity analysis for the remote modality. See SM2.

437

438 *Inverse probability weighting (IPW)*

439 Results for the in-person trial showed significant reduction for PTSD, depression, and anxiety but the  
440 effect sizes tended to be bigger and closer to a large effect size in comparison to the PP analysis without  
441 IPW. Analysis showed no significant results in the remote trial. See SM3.

442  
443 *Effects of clustering by intervention group*

444 Multilevel models with individual and group random intercepts were built to explore if clustering by  
445 intervention groups explain variance in the primary and secondary outcomes. There were no significant  
446 changes when including group as a random variable.

447  
448 **Moderation analyses for treatment effects**

449 In-person trial moderation analyses found that living in an urban area was associated with increase in  
450 depression post treatment, resulting in no change from pre to post between control and experimental groups  
451 (Treatment change = -0.64,  $p = 0.00$ , moderation effect = 0.51,  $p = 0.02$ ). Additionally, higher baseline  
452 levels of PTSD were associated with increased improvement in anxiety symptoms (Treatment change =  
453 0.20,  $p = 0.31$ , moderation effect = -0.53,  $p = 0.00$ ).

454  
455 In the remote trial, there were no moderation effects for demographic variables. Higher baseline levels of  
456 depression were associated with an increase in PTSD symptoms resulting in no change for PTSD in the  
457 treatment group (Treatment change = -0.62,  $p = 0.04$ , moderation effect = 0.62,  $p = 0.01$ ).

458  
459 **Discussion**

460  
461 This study assesses feasibility, acceptability, and preliminary effectiveness outcomes of a community-based  
462 psychosocial support group intervention for conflict-affected adults in Colombia's Pacific Coast during the  
463 COVID-19 pandemic and national strikes in Colombia. In doing so, it aims to contribute to the existing  
464 evidence base and practitioner guidance regarding community-based interventions conducted by non-  
465 professional community members, using varied (in-person and remote) modalities to accommodate  
466 contextual challenges. In-person and remote versions of the same intervention were assessed in parallel  
467 trials, with participants able to choose which modality to participate in. Results suggested overall feasibility  
468 and high acceptability in both trials, and preliminary evidence of effectiveness in the in-person trial.  
469 Findings are discussed in detail below, in the context of companion papers documenting qualitative findings



470 on barriers and facilitators from the same study (Chaparro Buitrago et al., 2024) and results of a previous  
471 pilot study (Rattner et al., 2023).

472  
473 Because participants were able to decide whether to join the in-person or remote trials, initial analyses were  
474 conducted to identify demographic and baseline mental health characteristics of those selecting each  
475 modality. Participants who chose to participate in-person were older and more likely to live in rural areas  
476 than remote participants, who were almost entirely based in urban areas. In-person participants were also  
477 more likely to be unemployed or informally employed, while remote participants were more likely to be  
478 formally employed or work at home to take care of households and children. It may be that younger, urban  
479 participants were more likely to be tech-savvy and therefore to prefer a remote group modality, a finding  
480 that aligns with research identifying remote service implementation challenges related to older age,  
481 technological literacy and poor connectivity (Ibragimov et al., 2022; Witteveen et al., 2022). Poor internet  
482 access in rural areas may also have discouraged remote participation. Those with formal employment, or  
483 those taking care of children and the household may also have appreciated the flexibility of remote  
484 participation. Remote participants also reported more functional impairment related to mental health  
485 reactions than in-person participants, but baseline rates of functional impairment were very low in all  
486 groups. These findings may be useful for practitioners in determining when and for whom remote or in-  
487 person interventions are preferable.

488  
489 In this study, *feasibility* was assessed by means of participant attendance levels and intervention fidelity.  
490 *Attendance* was moderate for all participants, with 62-65% attending four or more sessions in both  
491 modalities. Fewer participants attended zero sessions in the remote modality than in the in-person modality;  
492 it is possible that those who did not attend in-person sessions were more likely to be impeded by travel and  
493 logistical constraints which prevented any attendance at all. Among in-person participants, older  
494 participants had better attendance; these individuals may be more motivated to attend this type of  
495 intervention or have more means to do so and fewer competing priorities. In the remote modality, those  
496 who were employed or took care of their households were more likely to attend than unemployed  
497 participants, who may have more unpredictable schedules due to efforts to secure income, especially during  
498 the pandemic and strikes when livelihoods were particularly threatened. Results are consistent with  
499 qualitative interviews (Chaparro Buitrago et al., 2024) in which participants and staff described challenges  
500 in in-person groups associated with travel difficulties, COVID-19 infection, last minute work commitments,

501 and childcare (especially for women), while remote participants struggled with unstable internet, power  
502 outages, and poor technological literacy. In sum, both modalities appeared moderately feasible even in the  
503 midst of multiple emergencies, with neither demonstrating significantly greater advantages regarding  
504 attendance than the other. Participants were able to select their modality and it is possible that were they  
505 not able to do so, attendance may have suffered further –an empirical question that should be explored  
506 further in future studies.

507  
508 Intervention *fidelity*, assessed through fidelity checklists completed by psychologist and social worker  
509 observers, was similarly high in both modalities, suggesting that, even in the remote modality, group  
510 facilitators were generally able to complete key intervention activities. Although results are encouraging,  
511 fidelity checklists did not assess quality of facilitation beyond whether or not activities were completed or  
512 level of participant engagement with activities. Future research should more comprehensively examine  
513 intervention fidelity across modalities.

514  
515 Participant reported *acceptability* was high in both in-person and remote trials, a finding consistent with  
516 pilot study results and qualitative results from the current study. In all three datasets, both in-person and  
517 remote participants reported strong satisfaction with the intervention. However, in qualitative interviews,  
518 participants described a collaborative, peer support dynamic in both modalities (Chaparro Buitrago et al.,  
519 2024), while in the pilot study, participants highlighted a more collaborative style in the in-person groups  
520 (Rattner et al., 2023). Data from the current research supports both findings, with both in-person and remote  
521 participants reporting similarly high levels of feeling comfortable, supported, heard and understood, but in-  
522 person participants indicating that they felt more comfortable expressing themselves emotionally in  
523 sessions than did remote participants. In-person participants also reported better understanding of the  
524 consent form and greater belief that research results would be helpful to others, suggesting better overall  
525 engagement and perceived benefit. These findings may have implications for potential effectiveness,  
526 discussed further below.

527  
528 Preliminary *effectiveness* outcome analyses revealed significant reduction in symptoms of anxiety,  
529 depression, and PTSD for in-person participants in comparison to control group participants. Results were  
530 consistent in both the intent to treat and per protocol analyses, though effect sizes were higher in the per  
531 protocol sample comprised of participants attending four or more sessions of the eight-session intervention.

532 These findings are consistent with other research showing positive results of task-sharing and CB-PSS  
533 interventions conducted in-person (Le et al., 2022; Raviola et al., 2019), including previous study of  
534 ACOPLÉ's group and individual models implemented by lay community workers in Colombia (Osorio-  
535 Cuellar et al., 2017; Pacichana-Quinayáz et al., 2016).

536  
537 However, in the in-person trial, no significant differences between intervention and control group  
538 participants were found for other measures, including generalized distress, functional impairment,  
539 community resilience, or for secondary outcomes. Of note, most of these measures were added as part of a  
540 cross-study initiative to measure parallel constructs across interventions and contexts, and had not been  
541 used previously with this project, whereas anxiety, depression, and PTSD measures had been used  
542 previously with the ACOPLÉ project for monitoring and evaluation purposes and therefore CPAs may have  
543 been more accustomed to their use and explaining these items to participants. Examination of pre- and post-  
544 intervention means can further aid interpretation (see SM 1). Regarding generalized distress, in both trials,  
545 both intervention and control participants demonstrated improvement over the course of the study period,  
546 but there was no difference between groups at post-intervention. By the end of the study, circumstances  
547 had improved regarding both COVID-19 and nationwide protests. It is possible that these environmental  
548 changes resulted in reduced generalized distress for all, such that intervention effects were only evident in  
549 the more extensive clinical measures, among participants experiencing distress beyond the 'typical' level.  
550 Indeed, moderation analyses suggest that the in-person intervention was more effective for those with  
551 significant distress; those with higher levels of PTSD at baseline were more likely to benefit from the  
552 intervention in regard to anxiety. In the case of functional impairment, in both in-person and remote trials,  
553 pre- and post-intervention means suggest a floor effect, in that rates of impairment were very low at baseline  
554 and remained low throughout, implying that this sample may not have experienced sufficient levels of  
555 impairment to fully respond to this intervention.

556  
557 Participants in the remote trial showed no change in mental health outcomes in comparison to control  
558 participants. Examination of pre- and post-intervention means reveal that in the remote trial, participants in  
559 both the intervention and control conditions showed significant improvement in depression, anxiety, and  
560 PTSD over the course of the study, resulting in no difference between conditions at post-test (SM1). As  
561 mentioned, negative effects of COVID-19 and the protests had lessened by the end of the study. It is possible  
562 that these environmental changes resulted in reduced generalized distress for all (as described above), and

563 reduction in anxiety, depression, and PTSD for remote participants, washing out potential intervention  
564 effects. Although it is not clear why the mental health of control participants in the remote trial would  
565 improve more than that of in-person control participants, it possible that characteristics of those who chose  
566 to participate remotely may play a role. For example, remote participants were likely to be younger and  
567 reside in urban areas – a demographic perhaps more affected by COVID-19 and national protests who may  
568 therefore have benefited more from an improvement in related conditions. Indeed, moderation analyses  
569 suggest that the in-person intervention did not change depression levels among those in urban areas, perhaps  
570 because they benefited from simultaneous improvement in contextual factors during the study period. These  
571 and other potential implications of non-randomization into in-person and remote modalities are discussed  
572 further in the Limitations sections below.

573  
574 Although methodological considerations mean that results should be viewed with caution, potential  
575 explanations for differences in outcomes between in-person and remote groups can be gleaned from  
576 qualitative data shared in accompanying articles (Chaparro Buitrago et al., 2024; Rattner et al., 2023). As  
577 mentioned earlier, remote groups faced challenges regarding frequent loss of mobile signal and electricity,  
578 especially during heavy rains, which, according to participants and staff, impeded engagement during the  
579 sessions. Second, remote participants and CPAs reported concern about distractions and compromised  
580 confidentiality due to participants attending sessions while doing other activities (e.g., working, studying,  
581 housework), sometimes in the vicinity of family members or work colleagues. This occurred despite efforts  
582 by CPAs to encourage attendance in quiet and private settings as part of the remote services safety planning  
583 process prior to the intervention. These factors had potential to impede engagement and development of a  
584 safe and confidential group dynamic. Finally, in the pilot study, some staff and participants mentioned that  
585 certain activities were difficult to adapt to the remote format (e.g., dance and other expressive movements)  
586 and that some forms of peer support may also have been harder to enact in the remote setting. Indeed,  
587 remote participants in the current study reported less comfort expressing their emotions in the groups than  
588 in-person participants, suggesting that such factors may have impeded emotional expression and therefore  
589 potentially dampened intervention benefits. In-person participants also reported better understanding of the  
590 consent form and greater belief that research results would be helpful to others, suggesting that they found  
591 the research process more palatable than remote participants, which may have influenced engagement with  
592 these elements. Similar processes have been suggested by other studies (Ibragimov et al., 2022; Naslund et  
593 al., 2019) and suggest that future intervention work may benefit by exploring methods of strengthening

594 remote interventions, including by facilitating engagement, emotional expression, exchange of peer support  
595 and confidentiality in remote settings.

596

### 597 **Limitations**

598 Methodological issues should be considered when interpreting these results. First, the sample size for  
599 remote groups was relatively small, raising concern about insufficient power to detect results. However,  
600 the data does not support this interpretation. Rather, in the remote modality, both intervention and control  
601 participants demonstrated significant within-group improvement in symptoms during this study period, and  
602 the intervention group did not improve more than the control group. Additionally, this study was  
603 implemented with a sample made up of mostly women, and group sessions were facilitated by women  
604 CPAs. With such a limited sample of men, this study cannot reliably speak to feasibility, acceptability, or  
605 effectiveness among men, or to gender differences.

606

607 More significantly, although this study includes exploration of differences between in-person and remote  
608 trials, it is critical to bear in mind that participants were not randomized to in-person or remote modalities,  
609 but rather were given the option to choose which modality they preferred (then randomized to experimental  
610 and control conditions). This decision was made with the aim of increasing equitable access while also  
611 prioritizing participant autonomy and decision-making, and in response to participant feedback during the  
612 pilot study expressing that being given options regarding modality was highly valued during the COVID-  
613 19 emergency. However, this approach introduces possibility of selection bias, potential that characteristics  
614 of participants choosing a certain modality may be characteristics that also make them more likely to attend  
615 (or to drop out) and to benefit (or not) from the intervention. To partially explore this possibility, moderation  
616 analyses were conducted to determine whether demographic or baseline mental health factors influenced  
617 outcomes. In-person and remote participants showed significant differences in age, work status, and  
618 residing in urban versus rural areas. Moderation analyses showed that in the in-person trial, those living in  
619 urban areas showed no change in depression (while participants in rural areas did). As most remote  
620 participants reside in urban areas, this factor may contribute to explaining results. Other individual-level  
621 factors not measured here, such as participant motivation and value attributed to peer support, problem-  
622 solving, and emotional regulation, may also play a role, as well as exposure to confounding variables such  
623 improvement in COVID-19 and national strike conditions (as discussed earlier in this section).

624

625 These studies were implemented during highly challenging circumstances, at the height of the COVID-19  
626 pandemic and in a period of national strikes and police violence. These elements affected attendance and  
627 resulted in delays in intervention implementation which altered methodology, likely impeded engagement  
628 and momentum, and may have impacted outcomes. Pauses and delays due to COVID-19 infections among  
629 staff and participants (approximately three weeks in most cases) affected in-person groups more than  
630 remote groups, but remote groups were also delayed when facilitators became ill.

631  
632 Overall, considering partial results, methodological limitations, and contextual challenges, results,  
633 particularly regarding effectiveness, should be viewed with caution, and additional research is needed to  
634 attempt to replicate findings and further explore explanations. Future research conducted in non-emergency  
635 contexts should include randomization to in-person and remote modalities.

636

637

### **Conclusions**

638 In this study, a community-based psychosocial support group utilizing task-sharing to non-specialist  
639 community members was found to be moderately feasible and highly acceptable when implemented in-  
640 person and remotely. The intervention was found to be effective in reducing some forms of distress when  
641 implemented in-person, but no effects were found when the intervention was conducted in a remote  
642 modality using calls through an online platform. These preliminary results suggest that trained  
643 community workers can meaningfully improve the mental health of their peers when engaging in person  
644 but that, while remote approaches can be an important strategy for facilitating engagement, additional  
645 research is needed to assess effectiveness. Future research should be conducted in more stable conditions,  
646 including randomization of participants to in-person and remote modalities, to replicate and further  
647 interpret results.

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658

659 **Author Contribution Statement**

660 LEJ is the principal investigator and led conceptual development and manuscript development. NG led data  
661 analysis, interpretation, and supported manuscript development. JFB supported study implementation and  
662 oversight of data collection. MR supported study implementation and manuscript development. All authors  
663 reviewed and approved the final manuscript prior to submission.

664

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671

672 **Conflicts of Interest:** None

673

674 **Ethics Statement:** Study procedures were approved by Institutional Review Boards (IRBs) at Universidad  
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676

677 **Data Availability:** Data are available from authors upon reasonable request.

678

679

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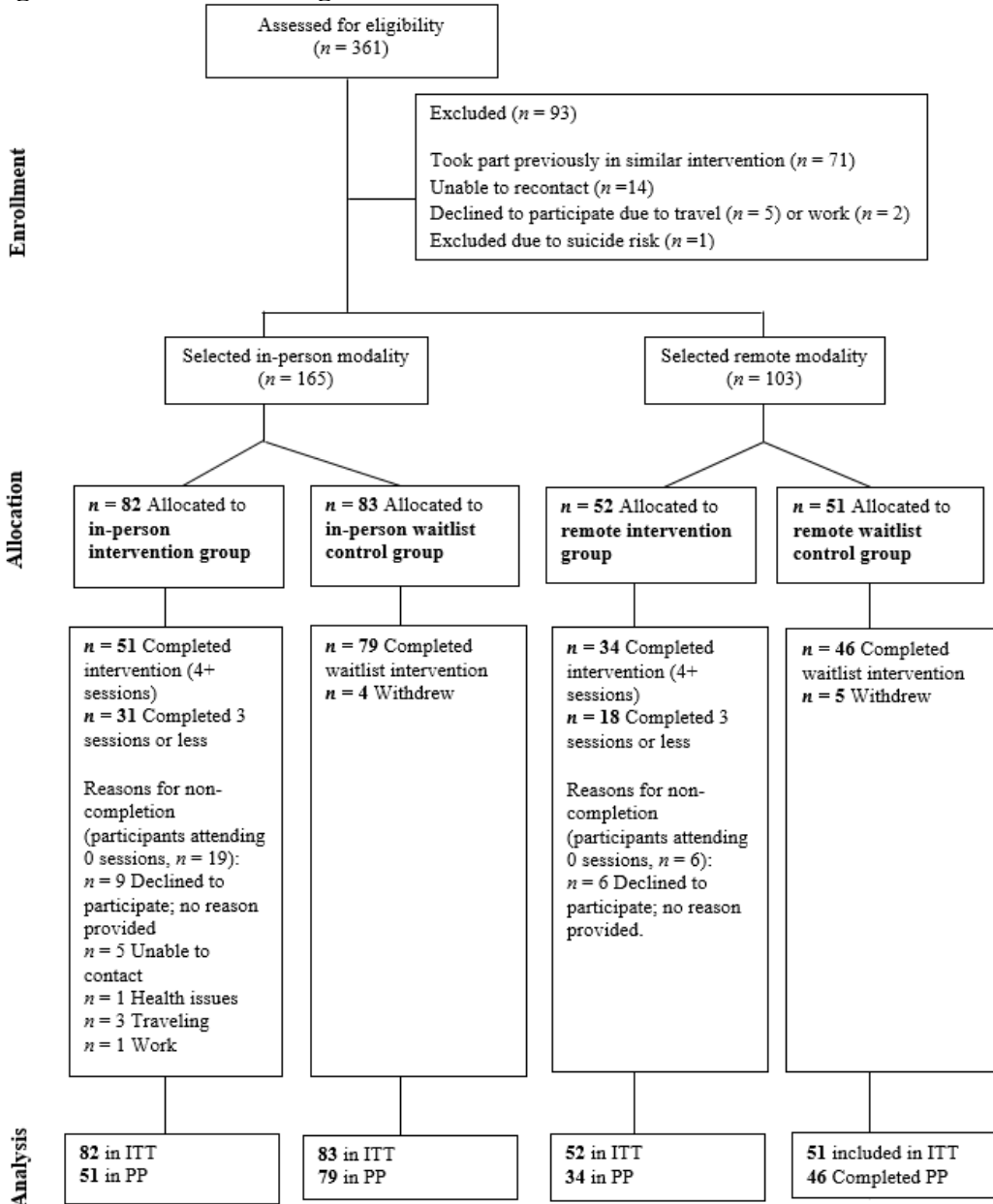
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858 **Figure 1. CONSORT diagram**



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**Table 1.** In-person and remote intervention participant demographics

	In-Person			Remote		
	Control (n=83)	Experimental (n=82)	Overall (n=165)	Control (n=51)	Experimental (n=52)	Overall (n=103)
<b>Demographics</b>						
<b>Age</b>						
Mean (SD)	39.6 (14.0)	42.1 (17.7)	40.8 (16.0)	35.4 (11.4)	35.3 (12.3)	35.4 (11.8)
<b>Gender</b>						
Men	12 (14.5%)	8 (9.8%)	20 (12.1%)	5 (9.8%)	6 (11.5%)	11 (10.7%)
Women	71 (85.5%)	74 (90.2%)	145 (87.9%)	46 (90.2%)	46 (88.5%)	92 (89.3%)
<b>Area of residence</b>						
Rural	29 (34.9%)	24 (29.3%)	53 (32.1%)	2 (3.9%)	4 (7.7%)	6 (5.8%)
Urban	54 (65.1%)	58 (70.7%)	112 (67.9%)	49 (96.1%)	48 (92.3%)	97 (94.2%)
<b>Nationality</b>						
Colombian	72 (86.7%)	71 (86.6%)	143 (86.7%)	38 (74.5%)	43 (82.7%)	81 (78.6%)
Venezuelan	11 (13.3%)	11 (13.4%)	22 (13.3%)	13 (25.5%)	9 (17.3%)	22 (21.4%)
<b>Education</b>						
Undergraduate degree or higher	20 (24.1%)	24 (29.3%)	44 (26.7%)	19 (37.3%)	23 (44.2%)	42 (40.8%)
Primary school or less	17 (20.5%)	23 (28.0%)	40 (24.2%)	10 (19.6%)	13 (25.0%)	23 (22.3%)
Middle to high school	45 (54.2%)	35 (42.7%)	80 (48.5%)	22 (43.1%)	16 (30.8%)	38 (36.9%)
Missing	1 (1.2%)	0 (0%)	1 (0.6%)	na	na	na
<b>Marital Status</b>						
Single	27 (32.5%)	24 (29.3%)	51 (30.9%)	18 (35.3%)	21 (40.4%)	39 (37.9%)
Married or partnered	53 (63.9%)	50 (61.0%)	103 (62.4%)	31 (60.8%)	28 (53.8%)	59 (57.3%)
Divorced, separated, or widowed	3 (3.6%)	8 (9.8%)	11 (6.7%)	2 (3.9%)	3 (5.8%)	5 (4.9%)
<b>Ethnicity</b>						
Afro-descendant	72 (86.7%)	74 (90.2%)	146 (88.5%)	38 (74.5%)	43 (82.7%)	81 (78.6%)
Indigenous	11 (13.3%)	8 (9.8%)	19 (11.5%)	9 (17.6%)	8 (15.4%)	17 (16.5%)
Missing	na	na	na	4 (7.8%)	1 (1.9%)	5 (4.9%)
<b>Work Status</b>						
Informal (no contract)	36 (43.4%)	28 (34.1%)	64 (38.8%)	21 (41.2%)	12 (23.1%)	33 (32.0%)
Formal (contracted)	5 (6.0%)	4 (4.9%)	9 (5.5%)	5 (9.8%)	9 (17.3%)	14 (13.6%)
Work at home (domestic duties, childcare)	20 (24.1%)	22 (26.8%)	42 (25.5%)	13 (25.5%)	21 (40.4%)	34 (33.0%)

Unemployed	20 (24.1%)	23 (28.0%)	43 (26.1%)	7 (13.7%)	3 (5.8%)	10 (9.7%)
Student	2 (2.4%)	5 (6.1%)	7 (4.2%)	5 (9.8%)	7 (13.5%)	12 (11.7%)
<b>Displaced</b>						
Yes	54 (65.1%)	57 (69.5%)	111 (67.3%)	33 (64.7%)	41 (78.8%)	74 (71.8%)
	<b>In-Person</b>			<b>Remote</b>		
	<b>Control</b>	<b>Experimental</b>	<b>Overall</b>	<b>Control</b>	<b>Experimental</b>	<b>Overall</b>
<b>Baseline mental health outcome variables</b>						
Depression	0.98 (0.55)	1.18 (0.60)	1.06 (0.58)	1.17 (0.59)	1.12 (0.63)	1.15 (0.61)
Anxiety	0.83 (0.62)	1.02 (0.71)	0.90 (0.66)	0.99 (0.67)	0.96 (0.73)	0.95 (0.69)
PTSD	1.05 (0.67)	1.15 (0.64)	1.09 (0.65)	1.07 (0.67)	1.07 (0.71)	1.05 (0.67)
Generalized Distress	2.62 (0.86)	2.65 (0.85)	2.64 (0.87)	2.67 (0.81)	2.77 (0.74)	2.73 (0.79)
Functional Impairment	1.48 (0.42)	1.55 (0.46)	1.51 (0.44)	1.65 (0.59)	1.68 (0.65)	1.66 (0.61)
Community Resilience	3.49 (0.39)	3.44 (0.45)	3.46 (0.43)	3.50 (0.42)	3.42 (0.55)	3.44 (0.50)

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865 **Table 2.** Mental health outcome measures

<i>Variable</i>	<i>Scale</i>	<i>Instrument</i>	<i>Description</i>	<i>Cronbach <math>\alpha</math></i>
<b>Primary outcome measures</b>				
Depression	0-3	Hopkins Symptoms Checklist -HSCL-25 (Derogatis et al., 1974)	25 items, 15 for depression symptoms and 10 for anxiety symptoms.	.88
Anxiety	0-3			.86
PTSD	0-3	PTSD Checklist Civilian-PCL-C (Miles et al., 2008)	16 items assessing symptoms of posttraumatic stress disorder (PTSD) in a civilian population.	.90
Generalized distress	1-5	Kessler-6 (Kessler et al., 2003)	Six items assessing generalized psychological distress.	.76
Functional impairment	1-5	WHO Disability Assessment Schedule -WHO-DAS-12 (Vázquez-Barquero et al., 2000)	12 items assessing impaired ability to function across six life domains (household, cognitive, mobility, self-care, social, society).	.83
Community Resilience	1-5	Escala de Resiliencia Comunitaria (Ruiz Pérez, 2015)	14 items measuring perceived communal coping and collective self-efficacy.	.81
<b>Secondary outcome measures</b>				
Wellbeing	0-10	Personal Wellbeing Index (International Wellbeing Group, 2013)	Seven items assessing perceived quality of life (life, health, relationships, security, community connection, future security).	.73
Coping Strategies	1-4	Brief Cope Questionnaire (Carver, 1997)	14 two-item subscales assessing the use of various coping strategies.	.85

866 Cronbach  $\alpha$ : Cronbach alpha for current sample calculated for all participants using pre assessment data.

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875 **Table 3.** Attendance by modality

		<b>Number of sessions attended*</b>									
		<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>4 or more sessions</b>
<b>In-Person</b>	<b>N</b>	20	3	2	6	7	11	12	16	5	51
	<b>%</b>	24.4	3.7	2.4	7.3	8.5	13.4	14.6	19.5	6.1	62.2
<b>Remote</b>	<b>N</b>	6	4	5	3	2	8	12	6	6	34
	<b>%</b>	11.5	7.7	9.6	5.8	3.8	15.4	23.1	11.5	11.5	65.4

876 \*This is the total number of sessions attended by participants. For example, a participant that attended sessions 1, 3,  
877 5, and 7 would be classified under “4” (and 4 or more sessions).

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880 **Table 4.** Intervention and research acceptability

	<b>In-Person</b>		<b>Remote</b>		<b>In-person vs. remote t-test p-value</b>
	<i>n</i>	mean (SD)	<i>n</i>	mean (SD)	
<b><i>Intervention acceptability</i></b>					
Accessibility of group	70	2.13 (1.31)	46	2.22 (1.11)	0.70
Felt comfortable in group	65	3.92 (0.41)	45	3.87 (0.55)	0.56
Privacy in group	65	3.12 (1.34)	45	3.22 (1.24)	0.69
Risk to safety in group	65	1.46 (1.09)	45	1.13 (0.63)	0.05
Felt protected from Covid-19	65	3.74 (0.69)	45	3.51 (1.1)	0.22
Felt supported	65	3.92 (0.32)	45	3.89 (0.38)	0.62
Felt heard	66	3.89 (0.43)	46	3.93 (0.33)	0.57
Felt needs understood	65	3.86 (0.46)	46	3.8 (0.54)	0.56
Group was respectful of the culture	65	3.85 (0.51)	46	3.83 (0.53)	0.84
Comfortable expressing self emotionally	64	3.94 (0.39)	46	3.72 (0.62)	0.04
Felt confidentiality protected	65	3.97 (0.17)	46	3.89 (0.38)	0.20
Learned useful skills/tools	65	3.74 (0.62)	46	3.76 (0.57)	0.84
Overall Satisfaction	65	3.95 (0.21)	46	3.96 (0.29)	0.96
<b><i>Research acceptability (RRPQ-R)</i></b>					
Would participate again	157	4.17 (0.64)	86	4.15 (0.64)	0.81
Understood consent form	156	4.25 (0.43)	89	4.13 (0.34)	0.02
Believe responses will be kept confidential	156	4.31 (0.5)	88	4.2 (0.43)	0.09
Research is useful for others	157	4.26 (0.56)	83	3.92 (0.86)	0.00
Experienced intense emotions	138	3.26 (1.12)	73	3.25 (0.98)	0.92
Procedures were too long	149	2.34 (0.87)	73	2.37 (0.92)	0.79

881 Note: Intervention acceptability was measured using a 4-point Likert scale from 0 = not at all to 3 = a lot; Research  
882 acceptability scale used a 4-point Likert scale from 1 = totally disagree to 4 = totally agree.

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888 **Table 5.** ITT and PP treatment effect estimates for primary outcomes in the in-person and remote  
 889 modality.

<i>Model</i>	<b>ITT</b>				<b>PP</b>			
	<i>Treatment Effect</i>	<i>p</i>	$\eta^2_p$	<i>ICC</i>	<i>Treatment Effect</i>	<i>p</i>	$\eta^2_p$	<i>ICC</i>
<i>In-Person modality</i>								
Depression	<b>-0.18</b>	<b>0.03</b>	<b>0.03</b>	0.62	<b>-0.25</b>	<b>0.01</b>	<b>0.06</b>	0.62
Anxiety	<b>-0.19</b>	<b>0.03</b>	<b>0.03</b>	0.63	<b>-0.26</b>	<b>0.01</b>	<b>0.06</b>	0.66
PTSD	<b>-0.27</b>	<b>0.00</b>	<b>0.05</b>	0.57	<b>-0.29</b>	<b>0.01</b>	<b>0.06</b>	0.58
Generalized distress	-0.09	0.54	0.00	0.40	-0.20	0.23	0.01	0.39
Functional impairment	-0.04	0.56	0.00	0.56	-0.09	0.21	0.01	0.52
Community resilience	0.04	0.53	0.00	0.58	0.02	0.81	0.00	0.53
<i>Remote modality</i>								
Depression	0.09	0.50	0.00	0.44	0.04	0.81	0.00	0.42
Anxiety	0.03	0.81	0.00	0.49	-0.04	0.79	0.00	0.50
PTSD	0.16	0.22	0.02	0.59	0.19	0.17	0.02	0.63
Generalized distress	-0.06	0.73	0.00	0.33	-0.09	0.66	0.00	0.31
Functional impairment	-0.01	0.91	0.00	0.59	-0.07	0.60	0.00	0.61
Community resilience	0.22	0.15	0.02	0.19	0.29	0.11	0.03	0.17

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