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Reducing violence in poor urban areas of Honduras by building community resilience through community-based interventions

Nete Sloth Hansen-Nord · Finn Kjaerulf · Juan Almendarez ·
Victor Morales Rodas · Julio Castro

Abstract

Objectives To examine the impact of a 3 year community-based violence prevention intervention on risk of violence and social capital in two poor urban communities in Honduras in 2011–2014.

Methods A quasi-experimental design pre and post implementation of the intervention was conducted based on data from two randomly selected samples using the same structured questionnaire in 2011 and in 2014.

Results Community members had a 42 % lower risk of violence in 2014 compared to 2011. There was a positive relation between participation in the intervention and structural social capital, and participants had more than twice the likelihood of engaging in citizenship activities compared to the general population.

Conclusions The intervention contributed to decreasing violence and increasing community resilience in two urban areas in Honduras. Citizenship activities and active community participation in the violence prevention agenda rather than social trust and cohesion characteristics was affected by the intervention. This research introduces important lessons learned to future researchers aiming to retrieve very sensitive data in a similarly violent setting, and provides strong research opportunities within areas, which to this date remain undiscovered.

N. S. Hansen-Nord (✉) · F. Kjaerulf
DIGNITY Danish Institute Against Torture, Copenhagen,
Denmark
e-mail: nete.hn@gmail.com

J. Almendarez · V. M. Rodas · J. Castro
The Centre for Prevention and Rehabilitation of Victims of
Torture and Their Families (CPTRT), Tegucigalpa, Honduras

Introduction

Latin America is one of the world's most violent regions (UNODC 2014), with 41 of the world's 50 most violent cities located in Latin America (Daily mail 2016). The Venezuelan capital Caracas was the most violent city in the world (120 homicides per 100,000 people) last year, followed by the Honduran city San Pedro Sula (111 per 100,000 people), when war zones and cities with unavailable data are excluded (Economist 2016). While El Salvador does now have the highest general murder rate (103 per 100,000 people), Honduras had the highest murder rate in the world between 2010 and 2014 (La Prensa 2016). In Honduras, the general murder rate is now 56.7, and 73.5 in Tegucigalpa (Daily mail 2016). Yet, certain marginal areas of the city are far more dangerous.

This burden of violence is a key developmental constraint for the country, and a serious public health problem with severe humanitarian implications, including the erosion of human and social capital in the population (Kjaerulf and Barahona 2010; World Bank 2011; Yacoub et al. 2006). There are high levels of unemployment, local illicit drug trade, gang related activity, alcohol and substance abuse, economic and gender inequality, and readily available firearms as well as a cultural norm that supports violence (Krug et al. 2002; Briceño-León et al. 2008). Honduras has a poor criminal justice system, with only 3 convictions per 100 homicides committed (Eisner 2015). Thus, many poor urban communities are grossly underserved by state controls due to the inability of state institutions to function adequately regulating and managing

the legitimate the use of force; which consequently represents a major factor for shaping urban violence (Muggah 2012). All of these components are known risk factors associated with violence.

The prevention of violence is becoming a top priority for the region's policymakers (Auyero et al. 2014; Koonings and Kruijt 2007; UNDP 2013), and global violence reduction featured prominently in the recently adopted United Nations' 2030 Agenda for Sustainable Development. By recognizing the link between violence prevention and sustainable development—especially relevant for fragile states with high-violence settings and weak institutions—the agenda provides urgent needed international attention to evidence based South-North violence prevention programmes, such as the present research in Honduras, implemented in cooperation with DIGNITY- Danish Institute against Torture, and financed by the Danish Ministry of Foreign Affairs.

During 2011–2014, a comprehensive community-based violence prevention intervention was implemented by The Centre for Prevention and Rehabilitation of Victims of Torture and Their Families (CPTRT) in two poor urban areas of Tegucigalpa, Honduras; Villanueva (VN) with 6100 registered houses and Nueva Suyapa (NS) with 3711 registered houses. The CPTRT intervention focused on rebuilding social capital within the communities. Social capital is related to an individual's networks and reciprocated exchanges, solidarity, trust, and social control (Portes 1998). In this research, we focused on two dominant dimensions of social capital: structural and cognitive (Mitchell and Bossert 2007). Social capital was measured based on questions from the short version of the Adapted Social Capital Assessment Tool (SASCAT). The structural elements focused on participation in formal or informal community groups and activities (community participation), whereas the cognitive elements focused on the respondents' values, norms, and levels of interpersonal trust and support among community members (De Silva et al. 2006). Social capital is closely linked to community empowerment which refers to the interplay between individual and community change in terms of significant social and political change. The factors influencing community empowerment include participation, leadership, problem assessment, and organizational structures (Laverack and Wallerstein 2001). The CPTRT community work was comprised of various action groups within the communities, focusing on recreational activities, seeking to build a culture of peace by contributing to the good use of young people's leisure time as a means of preventing violence. This work was established and coordinated by two community organizational structures, both arising from the framework of the project created specifically to reduce violence.

Prior to the violence prevention program, CPTRT had been present in NS for close to 10 years, conducting other social work and medical assistance to community members, thus creating trust and access to these poor and dangerous urban areas. The work of the intervention studied follows the first four key policy recommendations of the Global Violence Reduction Conference 2014, where strategies to reduce violence by 50 % in 30 years were identified (WHO 2015); namely: (1) focus on low- and middle-income countries, hot spots and top violent cities, (2) disseminate, adapt and replicate best practices globally, (3) develop data scope, access and standards, and (4) focus on children, youth and women.

The knowledge base concerning the impact of violence prevention efforts in poor urban areas in the global South is relatively weak; data is mainly from high-income countries where homicide rates are already very low (Eisner 2015). Yet, data on fatal and non-fatal violence from the states, cities and neighborhoods with the highest concentration of violence is essential for the formulation of national violence prevention action plans. Additionally, many countries lack valid population-based data on violence, resulting in limited available research to study violence. This means the foundation for policy and planning on violence prevention initiatives is ill-informed, and there are no means of monitoring change in violence patterns (WHO 2015). This research aims to assess the impact of a specific violence prevention intervention during 2011–2014 on risk of violence and social development among the residents of two poor urban areas of Tegucigalpa.

Methods

Data collection

This research is based on two surveys undertaken in Honduras in 2011 and 2014. They were carried out in the same two urban areas in Tegucigalpa, NS and VN, representing two of the most violent and marginalized urban areas in the country. The research applies a quasi-experimental design before (baseline) and after 3 years of implementation of the violence prevention program (follow-up). The baseline study of 2011 is presented in previous research (Hansen-Nord et al. 2014). The research represents a North–South collaborative research on a serious South development challenge. NS and VN represent similar contexts in relation to poverty, levels of insecurity and access to basic services. Data collection for the baseline study constituted a random sample of 500 households in NS and 500 households in VN. Three years later, the follow-up study constituted data from 838 randomly selected households, and 162 individuals selected non-

randomly based on direct exposure to the violence prevention program.

Households were randomized based on household mappings provided by the Honduras National Institute of Statistics. Inclusion criteria for all the respondents selected by randomization included being at least 18 years of age, living in NS or VN and being a member of the household visited, and not being under the influence of alcohol or drugs. The structured questionnaire comprised demographic information, household characteristics, health indicators, social capital, victimization, security and perception of the justice system at an individual level. The questionnaire was validated before the baseline study through a pilot study where community members, not included in the final baseline study population, conceptualised key concepts of the survey, including violence, community, and perception. The same questionnaire was used in the follow-up study, and questions were added which assessed direct participation in the intervention. Violence was defined as one or more violent episodes committed to a member of the household within the past 12 months, including cases in which the primary study participant was the victim. The violence variable represented physical interpersonal violence armed or unarmed, domestic violence and threats. Multivariate logistic regression analyses were used to estimate odds ratios (OR) for the different dependent variables given the potential confounders. The explanatory variables were selected based on a priori assumptions. All analyses were conducted with a two-sided level of significance of 0.05, and calculated using SPSS 19.0 (IBM, Armonk, USA).

The questionnaires were interviewer-administered by 15 interviewers based on the following selection criteria: being at least 18 years of age, residing in the community being studied (VN or NS), and having completed secondary school. Prior to the data collection, the interviewers were trained to familiarize them with the specific objectives of the study, interviewer skills, and the special requirements of the questionnaire. Each interview had a 30–40 min time frame. Given the high level of violence in VN and NS, safety precautions for the interviewers were essential. These included: being identifiable as an interviewer by wearing an official shirt, being organized in teams of two with support from supervisors, and being given a small amount of money to use it in the case of an assault. Interviews were conducted between 9 and 11 am for security reasons. It was highly important to recognize the informal structures of the communities, which were characterized by the absence of the state. Informally, the gangs controlled certain areas of the communities, and due to the randomization of data, it required access to gang controlled areas of the communities. Thus, it was fundamental to recruit interviewers with specific contextual knowledge of the area in which the interviews took place, and who were known faces in the community. One reason was for safety reasons, since the interviewers would know the informal rules of behavior and safest pathways throughout the community, the other reason was to assure the acceptance of the respondents to participate in the interviews, because of less mistrust to the interviewers. In some areas informal agreements between the local gang leaders and the research team were necessary to secure entrance permission through community leaders, who approached the gang leaders to explain how the research would benefit the community. A key factor to obtaining a high response rate was the strategic collaboration with community leaders (pastors, school teachers, head nurses) of NS and VN, who facilitated trust and interest in participating in the study by expressing their support in community reunions prior to the data collection.

Results

Study population

Table 1 shows that the study populations in 2011 and 2014 both primarily consisted of women (approx. 75 %) with similar age distributions (approx. 25 % of the population in each age group of 13–23, 24–34, 35–49 and 50+ years). Both study populations represent people with a low educational degree (in 2011, 69 % of the population had an educational degree lower than secondary school, while in 2014 the proportion was 70 %), primarily housewives. There was a general decrease in violence prevalence in 2014 ($n = 123$) compared to 2011 ($n = 219$). The direct beneficiaries of the intervention were mainly housewives above 35 years (54 %) with poor educational background. However, the general characteristics of direct beneficiaries who reported exposure to violence were primarily men (42 %), the age of 50+ (31 %), and mainly employed (44 %). Table 2 shows that slightly more people among the direct beneficiaries had been exposed to violence (21 %) than in the general population of 2014 (15 %). Among beneficiaries, significantly more people had high structural social capital (59 %), participated in citizenship activities (35 %), and reported violence to the police (8 %) than in the general population, where the numbers were 33 % for structural social capital, 19 % for citizenship activities, and 5 % for reporting of violence to the police. On the contrary, more people among the general population had higher cognitive social capital (43 %), and felt secure in their local neighborhood (66 %) than among the direct beneficiaries, where the numbers were 38 % for cognitive social capital and 45 % for feeling secure in the local neighborhood. There was no difference in perception of the police whether direct beneficiary or not.

Table 1 Description of the study populations in 2011 and 2014 (Honduras 2011–2014)

Individual level variables	Baseline 2011		Follow up 2014 general population		Follow up 2014 direct beneficiaries	
	Total N = 1000	Violence household member N = 219	Total N = 838	Violence household member N = 123	Total N = 162	Violence household member N = 34
	n	n (%)	n (%)	n (%)	n (%)	n (%)
Sex						
Male	239 (23.9)	49 (20.5)	207 (24.7)	23 (11.1)	26 (16.0)	**11 (42.3)**
Female	752 (75.2)	168 (22.3)	631 (75.3)	100 (15.8)	136 (84.0)	**23 (16.9)**
Missing	9	2	0	0	0	0
Age group						
13–23 years	246 (24.6)	54 (22.0)	154 (18.4)	25 (16.2)	31 (19.1)	**3 (9.7)**
24–34 years	243 (24.3)	45 (18.5)	191 (22.8)	33 (17.3)	32 (19.8)	**4 (12.5)**
35–49 years	243 (24.3)	57 (23.5)	227 (22.7)	31 (13.7)	53 (32.7)	**13 (24.5)**
50+ years	260 (26.0)	63 (24.2)	252 (30.1)	31 (12.3)	45 (27.8)	**14 (31.1)**
Missing	8	0	14	3	0	**0**
District						
Nueva Suyapa	522 (52.2)	**126 (24.1)**	431 (51.4)	68 (15.8)	85 (52.5)	**11 (12.9)**
Villa Nueva	477 (47.7)	**93 (19.5)**	407 (48.6)	55 (13.5)	77 (47.5)	**23 (29.9)**
Missing	1	**0**	0	0	0	0
Education						
Primary school not completed	230 (23.0)	44 (19.1)	237 (28.3)	**24 (10.1)**	35 (21.6)	7 (20.0)
Primary school completed	251 (25.1)	61 (24.3)	215 (25.7)	**28 (13.0)**	40 (24.7)	10 (25.0)
Secondary school not completed	212 (21.2)	45 (21.2)	134 (16.0)	**22 (16.4)**	35 (21.6)	3 (8.6)
Secondary school completed	182 (18.2)	35 (19.2)	164 (19.6)	**38 (23.2)**	31 (19.1)	9 (29.0)
University degree not completed	60 (6.0)	18 (30.0)	54 (6.4)	**8 (14.8)**	11 (6.8)	2 (18.2)
University degree completed	13 (1.3)	2 (15.4)	14 (1.7)	**1 (7.1)**	6 (3.7)	2 (33.3)
None	40 (4.0)	13 (32.5)	18 (2.4)	**2 (11.1)**	4 (2.5)	1 (2.9)
Missing	12	1	2	**0**	0	0
Occupation						
Housewife	513 (51.3)	116 (22.6)	463 (55.3)	77 (16.6)	87 (53.7)	**14 (16.1)**
Student	106 (10.6)	27 (25.5)	65 (7.8)	11 (16.9)	24 (14.8)	**2 (8.3)**
Employed	137 (13.7)	25 (18.2)	131 (15.6)	15 (11.5)	23 (14.2)	**10 (43.5)**
Self employed	124 (12.4)	29 (23.4)	115 (13.7)	9 (7.8)	24 (14.8)	**5 (20.8)**
Paid by the hour	42 (4.2)	7 (16.7)	10 (1.2)	1 (10.0)	1 (0.6)	**0 (0.0)**
No job	41 (4.1)	10 (24.4)	42 (5.0)	8 (19.0)	3 (1.2)	**3 (100.0)**
Missing	37	5	12	2	0	0

The distribution of nominal variables (sex, district and occupation) was tested using a χ^2-test. The distribution of ordinal variables (age and education) was tested using a γ-test

Statistically significant distributions are depicted in bold ($p < 0.05$)

Table 3 shows the results of the core analyses of this article, which compared the impact measures of the intervention before and after implementation of the intervention using logistic regression analyses. Our findings show that the general population of the intervention areas experienced a 42 % significantly reduced risk of violence in 2014 compared to 2011 (OR 0.58 95 % CI 0.45–0.75). Almost six times as many reported violence to the police in 2014 compared to 2011 (OR 5.72 95 % CI 2.75–11.93).

Approximately 43 % more had a good perception of the police in 2014 than in 2011 (OR 1.43 95 % CI 1.17–1.76). There was a 47 % significantly reduced risk of having a high level of structural social capital in 2014 compared to 2011 among the general population (OR 0.53 95 % CI 0.43–0.66), whereas the direct beneficiaries had more than three times the likelihood of having a high level of structural social capital than non-beneficiaries (OR 3.11 95 % CI 2.15–4.50) (Table 4).

Table 2 Description of impact measures of the intervention by The Centre for Prevention and Rehabilitation of Victims of Torture and Their Families (CPTRT) on the study populations in 2011 and 2014 (Honduras 2011–2014)

	Baseline 2011 Total N = 1000 n	Follow up 2014 general population Total N = 838 n (%)	Follow up 2014 direct beneficiaries Total N = 162 n (%)
Violence			
Yes	219 (21.9)	123 (14.7)	**34 (21.0)**
No	758 (75.8)	714 (85.2)	**128 (79.0)**
Missing	23	1	**0**
Structural social capital			
Low	510 (51.0)	552 (65.9)	63 (38.9)
High	450 (45.0)	277 (33.1)	96 (59.3)
Missing	40	9	3
Cognitive social capital			
Low	443 (44.3)	429 (51.2)	97 (59.9)
High	458 (45.8)	358 (42.7)	61 (37.7)
Missing	99	51	1
Citizenship activities			
Yes	225 (22.5)	160 (19.1)	56 (34.6)
No	774 (77.4)	676 (80.7)	105 (64.8)
Missing	1	2	1
Security perception			
Secure	596 (59.6)	457 (54.5)	60 (37.0)
Relatively secure	102 (10.2)	95 (11.3)	13 (8.0)
Insecure	253 (25.3)	228 (27.2)	63 (38.9)
Very insecure	25 (2.5)	56 (6.7)	25 (15.4)
Missing	24	2	1
Report of violence to the police			
Yes	18 (1.8)	44 (5.3)	13 (8.0)
No	93 (9.3)	45 (5.4)	10 (6.2)
Perception of the police			
Good	317 (31.7)	340 (40.6)	66 (40.7)
Bad	607 (60.7)	461 (55.0)	94 (58.0)
Missing	76	37	2

Statistically significant distributions are depicted in bold ($p < 0.05$)

Likewise, while the general population had a 23 % lower proportion of citizenship activities in 2014 than in 2011 (OR 0.77 95 % CI 0.61–0.98) (Table 3), the direct beneficiaries had more than twice the likelihood of participating in citizenship activities compared to non-beneficiaries (OR 2.41 95 % CI 1.64–3.56). In terms of security perception, the general population had a 23 % increased level of feeling insecure in their local

Table 3 Logistical regression analyses of impact measures of the community-based intervention and year on the general population of Nueva Suyapa and Villa Nueva compared to 2011 (Honduras 2011–2014)

Impact measures	Crude OR OR (95 % CI)	Adjusted models OR (95 % CI)
Violence		
No	**1**	**1**
Yes	**0.60 (0.47–0.76)**	**0.58 (0.45–0.75)**
Structural social capital		
Low	**1**	**1**
High	**0.57 (0.47–0.69)**	**0.53 (0.43–0.66)**
Cognitive social capital		
Low	1	1
High	0.86 (0.71–1.05)	0.85 (0.70–1.05)
Citizenship activities		
No	1	**1**
Yes	0.81 (0.65–1.02)	**0.77 (0.61–0.98)**
Security perception		
Secure	**1**	**1**
Insecure	**1.29 (1.06–1.58)**	**1.23 (1.00–1.51)**
Report of violence to the police		
No	**1**	**1**
Yes	**5.05 (2.63–9.71)**	**5.72 (2.75–11.93)**
Perception of the police		
Bad	**1**	**1**
Good	**1.41 (1.16–1.72)**	**1.43 (1.17–1.76)**

Statistically significant distributions are depicted in bold ($p < 0.05$)

All adjusted models were adjusted for the following potential confounders selected a priori: age group, sex, occupation and education. Additionally, structural social capital was adjusted for cognitive social capital, and vice versa

neighborhood in 2014 than in 2011 (OR 1.23 95 % CI 1.00–1.51) (Table 3), which was higher among the direct beneficiaries than the non-beneficiaries (OR 2.55 95 % CI 1.79–3.64) (Table 4). While there was no change in risk of cognitive social capital between 2011 and 2014 among the general population (Table 3), significantly fewer had a high level of cognitive social capital among direct beneficiaries (OR 0.67 95 % CI 0.46–0.97) (Table 4).

Discussion

Reduced violence, strengthened structural social capital and increased community empowerment

Our findings show that there was a 42 % significantly lower risk of violence in 2014 compared to 2011 among the

Table 4 Logistical regression analyses of impact measures of the community-based intervention and year on direct beneficiaries the intervention compared to 2011 (Honduras 2011–2014)

Resilience related impact measures	Crude OR OR (95 % CI)	Adjusted models OR (95 % CI)
Structural social capital		
Low	**1**	**1**
High	**3.04 (2.14–4.31)**	**3.11 (2.15–4.50)**
Cognitive social capital		
Low	1	1
High	0.75 (0.53–1.07)	**0.67 (0.46–0.97)**
Citizenship activities		
No	1	1
Yes	**2.25 (1.56–3.25)**	**2.41 (1.64–3.56)**
Security perception		
Secure	1	1
Insecure	**2.34 (1.67–3.30)**	**2.55 (1.79–3.64)**

Statistically significant distributions are depicted in bold ($p < 0.05$)

All adjusted models were adjusted for the following potential confounders selected a priori: age group, sex, occupation and education. Additionally, structural social capital was adjusted for cognitive social capital, and vice versa

general population of NS and VN. Furthermore, there was a strongly significant positive relation between exposure to the intervention and structural social capital among the direct beneficiaries, while we see a decrease in structural social capital in the general population which implies a general erosion of local organizational trust, except for people affected by the intervention. In our assessment of structural social capital we focus on the "productive" versus the "perverse" form of the concept (McIlwaine and Moser 2001), since the items forming structural social capital score are merely productive institutions including sports-, political-, religious-, and women's groups. Perverse organizations include gangs and military groups contributing to crime and violence. The higher degree of involvement in citizenship activities represents an important impact of the intervention in terms of social development, namely cooperative action. Citizens have thus been empowered to be active participants in violence prevention efforts. Sub-analyses on citizenship activities imply an impact from the intervention on cooperative action and active engagement in the violence prevention agenda by positioning their demands for public safety, prevention of domestic violence, and social coexistence of the communities though pressuring local authorities to keep the issue on the agenda. Previous evidence from a similar Latin American context supports the argument that interventions promoting management and leadership development are linked to higher levels of civic participation in governance processes (Brune and Bossert 2009).

Cognitive social capital, security feeling, and violence

The cognitive social capital is reduced both in the general population and among beneficiaries of the intervention between 2011 and 2014. This implies a lack of trust and unity among community members of NS and VN. This tendency is seen in previous evidence (Hansen-Nord et al. 2014; Dinesen et al. 2013) where a negative relation between violence and cognitive social capital was identified. The low level of cognitive social capital might be linked to the general expression of insecurity in NS and VN. The so-called 'fear factor' is evident in these communities, where the surrounding context is characterized by high levels of violence. The level of insecurity in VN and NS has not changed significantly from 2011 to 2014, however, a slight increase in insecurity is seen among the people exposed to the intervention. This might be due to the increased conscience of risk among the people exposed to the intervention, e.g., through violence awareness activities such as mapping the risk hot spots of the community and routes of violence. Paradoxically, the increased knowledge of high risk areas of the community, most vulnerable groups, etc., might have caused some study participants to report a higher insecurity level than at baseline. However, detecting significant changes in security feeling, trust and cohesion factors among community members in this context might not be relevant within the scope of this intervention. To expect a positive, measurable impact of such factors of emotional wellbeing, trust and safety measures will realistically require a much longer time frame. Yet, previous evidence from Australia and Nicaragua have shown a strong positive relation between joining community organizations and generating trust, supporting the theory of community participation as a predictor of trust (Brown et al. 2012; Brune and Bossert 2009).

Coping and resilience

The impacts of this intervention point to coping behaviors, which can be defined as processes through which people try to understand, make sense of, and deal with personal or circumstantial critical situations (Mitchell et al. 2006) The documented impact measures show how community members survive, adapt and cope with their daily life activities by showing leadership in political advocacy and social change. This represents civil society induced empowerment of local actors in a context of many stresses, represented by violence and insecurity. The ways community members cope with chronic urban violence represents resilience, defined as ''the ability of communities to withstand and recover from community stressors as well as to learn from past stressors to strengthen future

response and recovery efforts" (RAND Corporation 2015). The mutually supportive relation between coping mechanisms and resilience in relation to violence prevention can be described as: "coping mechanisms and those acts intended to restore or create effectively functioning community-level activities, institutions and spaces in which the perpetrators are marginalized" (USAID and MIT 2012). Other key attributes of resilience include the establishment of civil society organizations which help to establish autonomous control over the activities, spaces and conditions that relate to their daily lives.

Social organization and the way community members take cooperative action to make societal changes generate resilience in the community, which represents an important overall impact of the intervention. The primary community actors were the housewives who were most involved in the community, and served as advocates for peace, contributing to the overall culture of peace in the communities. They seemed to have the strongest sense of responsibility towards the local community, and the strongest obligation to serve as agents for change. Simultaneously, they had a strong position in the local community through the in-depth knowledge of unofficial power structures and general common matters. Women's groups in similar environments have been identified as the most trusted social institution due to their physical location within the community, and their non-threatening functions within the community (Moser and McIlwaine 2006). This solidarity and cohesiveness is an important basis for cooperative action and sign of community resilience, and in the long term, a protective factor for violence.

Yet, challenges in these communities still remain since it has not proven possible to make citizens, the private sector, and governing authorities work together in a sustainable way at the community level in this particular setting. As long as bonds between the state and communities are dissolved, a climate where violence entrepreneurs can thrive is created (USAID and MIT 2012), and the key WHO policy recommendation for improving leadership, governance and policies for violence prevention cannot be achieved. Further resilience promoting efforts and the existence of political will at local governance level are needed to strengthen citizen-state-network in such communities, to institutionalize progressive security policies and prevent violence in a sustainable way.

Methodological strengths and limitations

An important strength of the study design was that the difference between being exposed (direct beneficiaries) and non-exposed (non-beneficiaries, belonging to the control group) was clearly defined. However, due to the nature of the community-based intervention, it was not possible to control who was and who was not exposed to the intervention. This represents a methodological limitation in terms of comparison between the two groups, since they might not have the same preconditions for participating in the intervention, or the same background characteristics. We argue that these potential preconditions for participating in the intervention were natural and the most realistic situation in a community-based intervention, and value the natural selection in a natural environment between direct beneficiaries and non-beneficiaries as opposed to e.g., a randomized controlled trial.

The degree to which change in risk is due to the intervention alone is hard to define, however, a certain contribution can be presumed, since the direct beneficiaries and non-beneficiaries had similar background characteristics. The effect of other factors in the relationship between exposure to the intervention and the different outcomes was controlled for through adjusting for potential confounders. Bias related to underreporting of violence might have occurred due to the sensitive nature of the subject, and it is likely that people did not inform about homicides within the households since this immediately would associate them with gang membership.

Lessons learned from field work in extreme violent settings: methodology versus reality

This research presents new evidence for the impact of community-based interventions in poor urban areas in the Global South with extreme levels of violence based on high validity data. The conditions under which the interviewers and researchers collected these data represented a high safety risk to both interviewers and respondents. The access to such high quality data from an unsafe environment was the result of exceptional efforts and lengthy preparations to secure access to the communities. This included a long process of building trustworthy contacts and collaboration with community leaders and members, as well as building an in-depth contextual understanding. This process introduces important lessons learned relevant to future researchers aiming to retrieve very sensitive data in a similarly violent setting.

Furthermore, it requires certain flexibility in terms of methodology, and a pragmatic approach to study implementation. The example of selecting respondents based on randomization was advantageous, but it meant that some interviewers had to enter into the most violent community areas, which they, in some cases refused. This introduced selection bias in these cases; however, it would be very unethical to force the collection of this data to adhere strictly to the scientific requirements of randomization. This exemplifies how such conditions challenges the implementation of scientific methods, since they might not be

applicable to the reality of the specific research area. However, the data material from this study represent the only data available from these areas in Honduras on social capital, citizenship and security measures, which provides strong research opportunities within areas, which to this date remain undiscovered. Furthermore, our violence data represents an important contribution to the existing national based victimization data from Honduras, which is characterized by a lack of data validity and credibility due to official regulations on data administration and accessibility.

Conclusion

This study responds to the official WHO recommendations of using a public-health approach to violence prevention, where valid baseline and follow-up data obtaining communities' input is used as an essential part of planning interventions and evaluating progress. We propose that short-term community-based interventions focusing on generating a culture of peace, early childhood, and youth rehabilitation can generate strong positive effects such as increased citizenship activities, community empowerment, increased awareness, and increased reporting of violence. We can expect to see significantly more powerful impacts over time as community resilience strengthens, possibly creating changes in trust and security perception among community members.

Investing in South-North evidence based violence prevention in fragile cities in states like Honduras is particularly important for providing hope and guidance to national prevention policies, and for reaching the United Nations' Sustainable Development Goals on violence prevention, and inclusive, safe and resilient cities. Especially the many high-violence setting cities in Latin America, could advance significantly by implementing knowledge driven violence prevention strategies.

Compliance with ethical standards

Ethical approval All procedures were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. There were no conflicts of interest.

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