# Violence and social capital in post-conflict Guatemala

Cecilie Dinesen,<sup>1</sup> Henrik Ronsbo,<sup>1</sup> Carla Juárez,<sup>1</sup> Mariano González,<sup>2</sup> Miguel Ángel Estrada Méndez,<sup>2</sup> and Jens Modvig<sup>1</sup>

Suggested citation

Dinesen C, Ronsbo H, Juárez C, González M, Estrada Méndez MA, Modvig J. Violence and social capital in post-conflict Guatemala. Rev Panam Salud Publica. 2013;43(3):162–8.

#### **ABSTRACT**

**Objective.** Violence in post-conflict Guatemala has serious public health consequences for the population. The objective of this study was to assess the relationship between violence and social capital.

**Methods.** Data from a cross-sectional victimization survey conducted in 2008–2010 in Guatemala were analyzed. Two-stage proportionate sampling was used in the survey. Households ( $n=1\,300$ ) were randomly sampled within a random sample of communities (n=118) in five administrative departments. The survey collected information on the six-month violence exposure of 6 335 individuals. Social capital was measured at the household level using the short version of the Adapted Social Capital Tool (SASCAT). The odds ratio for household violence exposure was estimated using multiple logistic regression. Community-level data from the latest national census were included as explanatory factors at the community level. Income, ethnicity, and social capital were included at the household level. Data were analyzed using SPSS 18.0.

**Results.** In total, 2.7% of individuals and 11.7% of households had been exposed to violence within the past six months. The multivariate analysis showed that 1) structural social capital (in this case, the level of participation in social networks and civil society) was a risk factor for violence and 2) cognitive social capital (measured as trust, norms, and sense of belonging) was a protective factor for violence.

**Conclusions.** The opposite direction of the association between violence and structural and cognitive social capital challenges the use of social capital as a unified concept. If this finding is corroborated by other studies, structural and cognitive social capital will have to be treated as two distinctly different concepts.

Key words

Violence; social environment; Central America; Guatemala.

The Latin American region has the highest level of violence in the world (1). Guatemala is no exception, with a 2006 homicide rate of 48 deaths per 100 000 inhabitants. The average annual number of killings for the post–civil war ("post–

injuries. WHO expands the conventional use of the term, defining violence as "the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation" (6, p. 5).

Despite increased attention to violence as a public health concern in low- and middle-income countries (6), the current

conflict") period is almost as high as the average annual number of killings for the 36 years of internal armed conflict that ended in 1996 (2). The current level of violence threatens the country's economic and social development (3, 4), and the current level of violence-related morbidity, mortality, and disability represents a large public health burden (5). According to the World Health Organization (WHO), the public health consequences of violence are not limited to physical

<sup>&</sup>lt;sup>1</sup> International Department, Danish Institute Against Torture (DIGNITY), Copenhagen, Denmark. Send correspondence to: Cecilie Dinesen, ceciliedinesen@gmail.com

ceciliedinesen@gmail.com
 Oficina de Derechos Humanos del Arzobispado de Guatemala (ODHAG), Guatemala City, Guatemala.

evidence on risk and protective factors is largely limited to high-income countries (7). However, some studies in developing countries have shown that factors such as low social support (8) and low income (9) are associated with high levels of violence. Low social support is also a predictor for gang membership in Guatemala (10). There are indications that these factors exert their impact through community characteristics rather than at the individual level (11, 12).

This article investigates the role of social capital in understanding violence in Guatemala. Social capital—defined here as the quality and quantity of formal and informal social networks—might be a useful tool for identifying at-risk households and individuals. Moreover, and from a more intervention-oriented point of view, building social capital by strengthening civil society and social cohesion might be an effective bottom-up policy approach for reducing violence in post-conflict countries (13, 14).

The concept of social capital reflects a community's resources in terms of social organizations and formal networks based on trust and cohesion (structural social capital) as well as invisible, informal elements of trust, altruism, and charity experienced among individuals in the community (cognitive social capital) (15-17). Existing studies have demonstrated an association between social capital and violence. Vial et al. (18) studied urban violence and social capital (trust among neighbors, informal social control, and social action in neighborhoods) and found lower reported violence in neighborhoods with higher social capital. This implies that 1) a high level of social capital protects against violence or 2) conversely, violence erodes social capital. With regard to the latter scenario, studies of political violence have indicated a more complex relation than simply erosion (19, 20).

One of the limitations of existing social capital and violence research is that, due in part to the disputed nature of the concept of social capital, which has been the subject of theoretical disputes and methodological concerns, economic capital is rarely taken into account. The perspective that dominates public health research, as well as current thinking at the World Bank, is influenced by the theories of Robert Putnam and James Coleman (21–26). According to the World Bank, social capital is the collective resources

available to the poor for managing risk and vulnerability. According to theory, communities with a high stock of social capital are better positioned to resist poverty and manage risks and economic shocks than those with a low stock of this asset (27). On the other hand, according to Bourdieu (28), social capital is intrinsically linked to economic capital. Contrary to the World Bank, Bourdieu insists economic capital determines peoples' social connections and the resources they can effectively mobilize. The objective of this study is to identify associations between violence and social capital in the Guatemalan context and to assess the role of economic capital in the equation.

#### MATERIALS AND METHODS

This study is based on the Guatemala Violence Survey (GVS), a victimization survey conducted from 2008-2010 by the Guatemala-based Office of Human Rights of the Archbishop of Guatemala (Oficina de Derechos Humanos del Arzobispado de Guatemala, ODHAG) and the Danish Institute Against Torture (DIGNITY). The survey was conducted in five of Guatemala's 22 administrative departments: Guatemala, Chiquimula, Quetzaltenango, San Marcos, and Petén. The selection of departments was based on the presence of ODHAG. Therefore, the study results are only representative of specific departments and can not be generalized for the country as a whole. Household survey data were combined with communitylevel data from the 2002 national census conducted by the National Statistics Institute (Instituto Nacional de Estadística, INE).

#### Sampling and data collection

The GVS employed proportionate two-stage cluster sampling with an equal proportion of households (0.17%) sampled in each department. The first stage was a random sampling of communities within each of the five departments and the second stage constituted a random selection of 10 households within each of the communities. "Communities" were defined as the administrative geographical units employed by INE.

Data were collected using an interviewer-administered household questionnaire. An adult member of the household was selected as the primary study participant. Violence exposure was measured by asking the primary study

participant: "Has your family suffered an act of violence or death within the last six months?" The answers were categorized as "physical violence," "property-related violence," or "threats." Interviewers also recorded whether the violent episode resulted in the death of the victim. In cases that involved more than one violent event, the most recent was selected for further questions. If someone other than the primary study participant had experienced the violence, the interviewer asked to pose the questions directly to the victim. If the direct victim was not available, the primary study participant was interviewed as a proxy-victim.

Social capital was measured using the short version of the Adapted Social Capital Assessment Tool (SASCAT). The SASCAT instrument is an abbreviated version of the Adapted Social Capital Assessment Tool (ASCAT) originally developed by the World Bank specifically for measurement of social capital in lowincome settings (17). The SASCAT instrument has been validated in Vietnam and Peru, which supports its use in low-income settings (29). The instrument clearly differentiates structural social capital and cognitive social capital. Structural social capital comprises interpersonal relationships formed through participation in formal or informal organizations or networks, whereas cognitive social capital comprises values, norms, attitudes, and beliefs among neighbors, friends, and relatives at the community level (30).

## **Ethical considerations**

Before participating in the research, all respondents were given a verbal explanation of the study. Informed consent was given orally. Necessary precautions were taken to ensure that participation in the study did not expose the respondents to further danger. Data were anonymized in the analysis process by assigning a random identification number to each record. The research was submitted for internal peer-review at DIGNITY to ensure that the research design and data handling procedures were aligned with Danish Data Protection Laws that ensure the full anonymity of the informants.

# Description of variables

The hierarchical organization of the data resulted in information specific to the individual, household, and community

level. Data at the individual and house-hold level were obtained from the GVS. Community-level data from the INE 2002 national census were disaggregated and assigned to each household within the community. This study included household- and community-level variables.

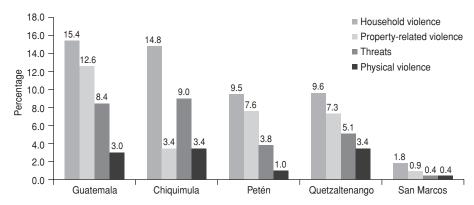
Household violence was defined as one or more violent episodes within the household over the past six months, including cases in which the primary study participant was the victim as well as cases in which he/she was interviewed as the proxy-victim. Thus, the household violence variable represents all three types of violence recorded in the survey (physical violence, property-related violence, and threats).

Ethnicity was measured by asking the respondent: "Are the members of the household indigenous or ladino<sup>3</sup>?"

Household income was defined as a categorical variable of the households' weekly income and classified in one of four categories: "extreme poverty," "poverty," "middle-income," and "high income." The categories "extreme poverty" and "poverty" corresponded to national definitions of those two income levels (2).

Social capital was measured using the SASCAT instrument, which comprises nine items: five measuring structural social capital (group membership, group support, social support from individuals, and two types of citizenship activities) and four measuring cognitive social capital, which was perationalized as trust, norms, and sense of belonging. A sum scale was computed for each of the two sub-components of social capital. The structural scale ranged from 0 to 28, with each of the groups the individual was a member of (or received support from) contributing one point to the overall structural social capital score. The cognitive scale ranged from 0 to 4, with each of the four items contributing one point to the overall cognitive social capital score. In line with De Silva (30), the sum scales were categorized to avoid assumptions of linearity. Structural social capital was grouped into three categories: low (scored as 0), medium (scored as 1–3), and high (scored as 4–28). This categorization was used because only 36% of the study population had a score

FIGURE 1. Breakdown of four types of violence by geographic area (administrative department), Guatemala, 2008–2010<sup>a,b</sup>



<sup>a</sup> Data source: Guatemala Violence Survey 2008–2010, Office of Human Rights of the Archbishop of Guatemala and the Danish Institute Against Torture (DIGNITY).

of 4 or higher. *Cognitive social capital* was dichotomized into low (scored as 0–3) and high (scored as 4) social capital because a very high proportion of the study population (41.8%) had a score of 4 on the cognitive scale.

*Urbanization* classified communities as urban or rural based on the definition employed by INE.

# Statistical analyses

Bivariate distributions were tested using the chi-squared test for nominal variables and the gamma test for ordinal variables. Multivariate logistic regression analyses were used to estimate odds ratios (ORs) for household victimization. Sequential forward model selection was used and distal confounders were included before proximal confounders to avoid control for mediating factors (31). The explanatory variables and their twoway interactions were selected based on a priori assumptions and considerations of the bivariate associations to minimize the risk of type II errors, and to yield meaningful interpretations. Geographic area was included in Model I to adjust for different levels of violence across the five administrative departments included in the GVS. The interaction between ethnicity and urbanization was added in Model II and income level was added in Model III. As these variables represent some of the main domains of inequality in Guatemala, they were considered before structural social capital and cognitive social capital were added

in Models IV–VI. Because the independent variable was household (versus individual or community) exposure to violence, and the survey respondent was not necessarily the direct victim, the analyses were not adjusted for sex and age. Data were analyzed using SPSS version 18.0 (IBM, Armonk, USA).

#### RESULTS

In total, 2.7% of 6 335 individuals and 11.7% of 1 300 households in the GVS had been exposed to violence within the past six months prior to the survey. There were, however, marked differences in violence exposure by geographic area (Figure 1). The highest levels of household violence were found in Guatemala and Chiquimula departments.<sup>4</sup> Quetzaltenango and Petén departments had similar patterns of violence, with an overall level of household violence of 9.5% in each department. The level of violence in San Marcos was considerably lower than in all other departments.

Table 1 shows exposure to violence across the explanatory variables. There was a strong and monotone income gradient in exposure to household violence. Overall, violence was significantly more prevalent among respondents residing in urban versus rural communities.

The properties of social capital are presented in Table 2. Indigenous respondents reported higher structural social

<sup>3</sup> Spanish term for "nonindigenous."

b Differences in the rates of household violence, property-related violence, and threats were statistically significant across departments (P < 0.05), based on the chi-squared test. There were no statistically significant differences in the rate of physical violence across departments.</p>

Guatemala Department is one of Guatemala's 22 administrative departments. The national capital, Guatemala City, is located in Guatemala Department.

TABLE 1. Distribution of explanatory variables (ethnicity, income, and level of urbanization) in relation to household exposure to violence, Guatemala, 2008–2010<sup>a,b</sup>

Variable	Total number of households (n = 1 300)	Households exposed to violence No. (%)	
Household level			
Ethnicity			
Indigenous	439	45 (10.3)	
Nonindigenous	819	101 (12.3)	
Missing values <sup>c</sup>	42		
Income			
Extreme poverty	225	10 (4.4) <sup>d</sup>	
Poverty	450	51 (11.3) <sup>d</sup>	
Middle income	302	41 (13.6) <sup>d</sup>	
High income	148	30 (20.3) <sup>d</sup>	
Missing values <sup>c</sup>	175		
Community level Urbanization			
Urban	891	129 (14.5) <sup>d</sup>	
Rural	409	23 (5.6) <sup>d</sup>	

<sup>&</sup>lt;sup>a</sup> Data source: Guatemala Violence Survey 2008–2010, Office of Human Rights of the Archbishop of Guatemala and the Danish Institute Against Torture (DIGNITY).

capital than nonindigenous respondents, as did respondents living in rural communities. Income was significantly associated with structural social capital but not with cognitive social capital.

Table 3 shows the results of the logistical regression analyses. In Model I, compared to respondents in Guate-

mala, respondents in San Marcos, Quetzaltenango, and Petén had a lower risk of household violence and respondents in Chiquimula had a similar risk. In Model II, there was a statistically significant interaction between ethnicity and urbanization, so the combined OR estimates are presented in the table. Compared to urban nonindigenous respondents, urban indigenous respondents had a similar risk of violence exposure. However, rural nonindigenous respondents had a 76% lower risk of violence exposure. The difference for rural indigenous people was less marked—the risk was only 24% lower than among urban nonindigenous people. The protective effect for rural nonindigenous increased after adjustment for income, whereas the risk for violence for both urban indigenous and rural indigenous increased. This suggests that the protective effect of living in a rural area differs by ethnic group. Model III showed a clear income gradient after adjustment for the confounding effect of geographic area (administrative department), urbanization, and ethnicity. Compared to the group with high income, risk of household violence decreased with decreasing income group.

Structural social capital was significantly associated with an increased risk of household violence (Model IV). Compared to the group with low structural social capital, the group with high structural social capital had an almost threefold increased risk of household

violence. The opposite relationship was seen with cognitive social capital (Model V). Compared to the group with high cognitive social capital, the group with low cognitive social capital had a 50% increased risk of household violence. Including structural and cognitive social capital in the same model did not alter the estimates for the two variables (Model VI). This indicates that structural social capital and cognitive social capital are two distinct constructs. The two components have an effect on the risk of violence exposure independent of each other, and in addition to the effect of income and the combined effect of ethnicity and urbanization.

#### DISCUSSION

The results of this study provide evidence that violence in Guatemala is demographically and socioeconomically differentiated and suggest that structural and cognitive social capital are oppositely and independently associated with violence. High structural social capital increased the risk of violence, whereas high cognitive social capital decreased the risk of violence.

The study found an individual victimization rate of 2.7% and a household victimization rate of 11.7% over a sixmonth period. These rates are considerably lower than those found in a study by the United Nations Development Programme (UNDP) in Guatemala City,

TABLE 2. Distribution of explanatory variables (ethnicity, income, and level of urbanization) in relation to levels of structural and cognitive social capital, Guatemala, 2008–2010<sup>a,b,c</sup>

		Structural social capital	Cognitive social capital		
Variable	Low (0) No. (%)	Medium (1–3) No. (%)	High (≥ 4) No. (%)	Low (0–3) No. (%)	High (4) No. (%)
Household level					
Ethnicity					
Indigenous	29 (9.3) <sup>d</sup>	165 (39.2) <sup>d</sup>	217 (51.5) <sup>d</sup>	235 (53.8) <sup>d</sup>	202 (46.2) <sup>d</sup>
Nonindigenous	138 (17.2) <sup>d</sup>	441 (55.1) <sup>d</sup>	222 (27.7) <sup>d</sup>	495 (60.7) <sup>d</sup>	320 (39.3) <sup>d</sup>
Income					
Extreme poverty	25 (12.0) <sup>d</sup>	94 (45.2) <sup>d</sup>	89 (42.8) <sup>d</sup>	114 (50.9)	110 (49.1)
Poverty	73 (16.6) <sup>d</sup>	206 (46.7) <sup>d</sup>	162 (36.7) <sup>d</sup>	269 (60.0)	179 (40.0)
Middle income	31 (10.4) <sup>d</sup>	167 (55.9) <sup>d</sup>	101 (33.8) <sup>d</sup>	176 (58.5)	125 (41.5)
High income	27 (18.6) <sup>d</sup>	71 (49.0) <sup>d</sup>	47 (32.4) <sup>d</sup>	78 (52.7)	70 (47.3)
Community level	,	,	,	` ,	,
Urbanization					
Urban	154 (17.7) <sup>d</sup>	468 (53.7) <sup>d</sup>	250 (28.7) <sup>d</sup>	560 (63.1) <sup>d</sup>	327 (36.9) <sup>d</sup>
Rural	26 (6.7) <sup>d</sup>	159 (40.9) <sup>d</sup>	20 (52.4) <sup>d</sup>	193 (47.4) d	214 (52.6) <sup>d</sup>

a Data source: Guatemala Violence Survey 2008-2010, Office of Human Rights of the Archbishop of Guatemala and the Danish Institute Against Torture (DIGNITY)

b Distribution of nominal variables (ethnicity and urbanization) was tested using a chi-squared test. Distribution of ordinal variables (income) was tested using a gamma test.
c Subjects with missing values were excluded from all subsequent analyses

<sup>&</sup>lt;sup>d</sup> Statistically significant distributions (*P* < 0.05).

<sup>&</sup>lt;sup>b</sup> Structural social capital was grouped into three categories (low, medium, and high) because only 36% of the study population had a score of 4 or higher. Cognitive social capital was grouped into two categories (low and high) because a very high proportion of the study population (41.8%) had a score of 4.

Distribution of nominal variables (ethnicity and urbanization) was tested using a chi-squared test. Distribution of ordinal variables (income) was tested using a gamma test.

<sup>&</sup>lt;sup>d</sup> Statistically significant distributions (P < 0.05).

TABLE 3. Logistical regression analysis with household exposure to violence as the dependent variable, Guatemala, 2008–2010<sup>a,b,c</sup>

	Model I	Model II	Model III	Model IV	Model V	Model VI
Variable			OR <sup>d</sup> (95% CI <sup>e</sup> )	OR (95% CI)	OR (95% CI)	OR (95% CI)
Department						
Guatemala	1.00	1.00	1.00	1.00	1.00	1.00
Quetzaltenango	0.58 (0.34-0.99)f	0.58 (0.32-1.05)	0.66 (0.36-1.22)	0.43 (0.23-0.85) <sup>f</sup>	0.7 (0.38-1.28)	0.45 (0.23-0.89) <sup>f</sup>
San Marcos	0.1 (0.04-0.27)f	0.15 (0.05-0.44)f	0.25 (0.09-0.76)f	0.18 (0.05-0.62) <sup>f</sup>	0.29 (0.1-0.87)	0.21 (0.06-0.72)f
Chiquimula	0.95 (0.51-1.78)	1.4 (0.68-2.8)	1.49 (0.76-3.15)	1.09 (0.5-2.36)	1.53 (0.73-3.24)	1.11 (0.51-2.43)
Petén	0.58 (0.29-1.14)	0.68 (0.29-1.59)	0.8 (0.34-1.94)	0.64 (0.26-1.57)	0.8 (0.34-1.92)	0.63 (0.26-1.54)
Ethnicity and urbanization						
Urban nonindigenous		1.00	1.00	1.00	1.00	1.00
Urban indigenous		0.99 (0.62-1.6)	1.18 (0.7-1.96)	1.12 (0.66-1.89)	1.13 (0.68-1.89)	1.12 (0.66-1.89)
Rural nonindigenous		0.24 (0.09-0.62)f	0.12 (0.03-0.49)f	0.11 (0.03-0.47) <sup>f</sup>	0.11 (0.03-0.48) <sup>f</sup>	0.11 (0.03-0.47) <sup>f</sup>
Rural indigenous		0.76 (0.4-1.45)	1.05 (0.53-2.07)	0.93 (0.46-1.89)	1.09 (0.55-2.17)	0.93 (0.46-1.89)
Income						
Extreme poverty			0.31 (0.14-0.72)f	0.32 (0.14-0.78) <sup>f</sup>	0.29 (0.13-0.67) <sup>f</sup>	0.3 (0.13-0.71) <sup>f</sup>
Poverty			0.59 (0.35-1) <sup>f</sup>	0.62 (0.36-1.06)	0.56 (0.33-0.96)	0.59 (0.34-1.02)
Middle income			0.67 (0.39-1.14)	0.65 (0.38-1.12)	0.65 (0.38-1.11)	0.64 (0.37-1.1)
High income			1.00	1.00	1.00	1.00
Structural social capital						
Low				1.00		1.00
Medium				1.37 (0.73-2.56)		1.41 (0.75-2.64)
High				2.69 (1.37-5.28) <sup>f</sup>		2.84 (1.45-5.57)

a Data source: Guatemala Violence Survey 2008-2010, Office of Human Rights of the Archbishop of Guatemala and the Danish Institute Against Torture (DIGNITY).

which reported a six-month individual victimization rate of 11.5% and a sixmonth household victimization rate of 37.6% (32). These findings could reflect a real decline in violence given the time spans between the GVS and the UNDP survey. However, no other evidence supports a general decline in the level of violence countrywide. Official homicide rates for the country overall increased more than twofold from 1999-2009 (2). There are several possible explanations for the discrepancy in rates. First, the data source for the current study (the GVS) covered urban and rural areas, whereas the data source for the UNDP results only covered the metropolitan area of Guatemala City. The level of violence in a metropolitan area is likely to be higher than in rural or peri-urban areas. This is seen across Latin America, where victimization rates have been shown to increase with both city size and rapid urban population growth (33). Second, the data source for the current study (the GVS) could have underreported violence due to selection bias. For example, it is plausible that the interviewers avoided households clearly inhabited by gang members due to safety considerations, or that people who had been exposed to violence refused to participate because of fear of repercussions from the perpetrators. Enumerators were trained well and necessary precautions were taken to avoid this, but the size of this potential bias is difficult to assess. Third, the use of a proxy-victim design for the questionnaire in the current study could have led to an underestimation of the different levels of violence. The proxy-victim design assumes that any member of the household has full knowledge of and is willing to report the violence exposure of other household members. In a study from Brazil that utilized data from different victimization surveys, studies that did not employ a proxy-victim design found victimization rates 2.8 times higher than surveys with a proxy-victim design (34).

This study also found evidence of a complex relationship between violence and social capital. One important finding was that the two sub-components had opposite associations with violence. Inclusion of both cognitive and structural social capital in the same logistic regression model did not alter the effect of either of the two factors. This indicates that the relationship between violence and structural social capital is relatively independent of the relationship between violence and cognitive social capital and vice versa.

The interest in the relationship between social capital and violence is justified by

the assumption that high levels of social capital are a protective factor for violence and, furthermore, that social capital can be built through interventions (13, 35). Therefore, the finding of a negative association between violence and structural social capital is at first glance contradictory. This contradiction is, however, mirrored in other victimization surveys from the region. In the aforementioned study from Brazil, political participation increased the risk of victimization two-fold compared to individuals with no political participation (34).

This finding suggests there may be some unrecognized risks related to civic participation in the region. One possible explanation is that people who participate actively in civil society are more apt to be targeted by violence as a result of their political activities. A publication by the International Trade Union Confederation (ITUC) reaffirmed that Latin America is the most dangerous place to be a member of a union and that Guatemala ranked second among the most dangerous countries, preceded by Colombia (36). Alternatively, it is possible that people with high structural social capital are more willing to disclose violent episodes than people with low structural social capital. Another possible explanations is that a high degree

b Structural social capital was grouped into three categories (low, medium, and high) because only 36% of the study population had a score of 4 or higher. Cognitive social capital was grouped into two categories (low and high) because a very high proportion of the study population (41.8%) had a score of 4.

 $<sup>^{\</sup>rm c}$  The overall Wald test was significant for all variables (P < 0.05) except income in Model II (P = 0.07).

d OR: odds ratio.

e CI: confidence interval.

<sup>&</sup>lt;sup>f</sup> Estimates with a significant derivation from 1 (*P* < 0.05).

of connectedness and participation in civil society is related to mobility patterns and thus indirectly exposes people to violence because of more time spent on the street and on public transport. Finally, selection bias might have affected this finding if households exposed to serious violent events had lower levels of structural social capital and refused participation because of lack of trust in strangers or fear of repercussions from the perpetrators. If the nonrespondents had lower levels of structural social capital and higher levels of violence than the respondents, this would lead to an overestimation of the association between violence and social capital. Because the refusal rate was not recorded in this study, it is difficult to assess the size of this possible source of bias.

The cross-sectional design of the study makes the interpretation of a possible causal relationship between social capital and violence difficult. If, despite the fact that time series data were not available to support causal inferences, it is hypothesized that there is a causal relation between the two factors, the direction of such relationship must be considered. This study has hypothesized that social capital influences the risk for violence. The underlying logic was that low social capital can be regarded as an indicator of exclusion from participation in society in terms of quantity and quality of proximate social relations, which is likely to increase the risk of becoming a victim of violence (21). The opposite relationship is, however, also plausible. For example, violence might create mistrust between neighbors, and thus lead to low cognitive social capital (15). While Bateson (4) found that victimization in Guatemala was associated with increased political participation, she argues that victims of crime become political activists rather than the opposite causal relation. A dual causal relation is also plausible: high structural social capital might increase the risk for violence, and high levels of violence over time might lead to destruction or alteration of social capital. Due to the complicated relationship between social capital and violence, including the dual nature of the causal direction, a longitudinal controlled study should be undertaken to assess the various possibilities.

The methodological strengths of this study include the fact that it is based on a widely applied victimization survey design that covers a representative sample of five departments in the country rather than solely Guatemala City. Moreover, the study employs a composite tool to measure social capital that was developed specifically for low-income countries and has been validated in lowincome settings. The major methodological limitations include the fact that the study employed a general definition of violence, so different degrees of violence severity are not reported in the study. Determining causality is also problematic, due to the cross-sectional design of the data source (the GVS).

In conclusion, this study documents endemic levels of violence in Guatemala. In terms of violence prevention, these findings suggest urban communities should be the primary targets of future interventions. The fact that structural and cognitive social capital did not follow similar patterns raises questions about whether interventions aimed at building civil society will automatically lead to increased levels of cognitive social capital. The increased risk of violence associated with structural social capital raises questions about whether such interventions would be relevant or desirable for the purpose of preventing violence. This is not to say that civil society should not be strengthened but rather that the current context is complex and requires a multifaceted response. As long as safety considerations prevent people from moving freely, and the social context does not allow for a pluralistic civil society, it is unclear what effect (if any) these types of interventions would have. Additional research on social capital and violence should focus on disentangling the relationship between different types of social capital and on the relationship between social and economic capital in relation to violence.

**Acknowledgments.** The authors thank the study respondents, for their participation in this study.

Conflicts of interest. None.

## REFERENCES

- 1. World Bank. World development report 2011: conflict, security and development. Washington: World Bank; 2011.
- 2. Oficina de Derechos Humanos del Arzobispado de Guatemala. Violencia en Guatemala. Estudio estadístico en 5 departementos. Guatemala City: ODHAG; 2011. Available from: http://www.odhag.org.gt/pdf/Violencia% 20en%20Guatemala.pdf
- Ayres RL. Crime and violence as development issues in Latin America and the Caribbean. Washington; World Bank Publications; 1998.
- Bateson R. The criminal threat to democratic consolidation in Latin America. In: Proceedings of the American Political Science Association 2010 Annual Meeting. Washington: APSA; 2010. Available from: http:// papers.ssrn.com/sol3/papers.cfm?abstract\_ id=1643239

- 5. Yacoub S, Arellano S, Padgett-Moncada D. Violence related injuries, deaths and disabilities in the capital of Honduras. Injury. 2006;37(5):428–34.
- Dahlberg L, Krug E. The world report on violence and health. Geneva: World Health Organization; 2002. Available from: http:// www.who.int/violence\_injury\_prevention/ violence/world\_report/en/
- Matzopoulos R, Bowman B, Butchart A, Mercy JA. The impact of violence on health in low- to middle-income countries. Int J Inj Contr Saf Promot. 2008;15(4):177–87.
- 8. Olate R, Salas-Wright C, Vaughn MG. Predictors of violence and delinquency among high risk youth and youth gang members in San Salvador, El Salvador. Int Soc Work. 2012;55(3):383–401.
- 9. Caicedo BG, Gonçalves H, González DA, Victora CG. Violent delinquency in a Brazil-

- ian birth cohort: the roles of breast feeding, early poverty and demographic factors. Paediatr Perinat Epidemiol. 2010;24(1):12–23.
- Winton A. Young people's views on how to tackle gang violence in "post-conflict" Guatemala. Environ Urban. 2004;16(2):83–99.
- De Coster S, Heimer K, Wittrock SM. Neighborhood disadvantage, social capital, street context, and youth violence. Sociol Quart. 2006;47(4):723–53.
- Beiser M, Wiwa O, Adebajo S. Humaninitiated disaster, social disorganization and post-traumatic stress disorder above Nigeria's oil basins. Soc Sci Med. 2010;71(2):221–7.
- Cuesta J. Social capital, crime and welfare: the cases of Colombia and Honduras. In: Cox M, editor. Social capital and peace-building: creating and resolving conflict with trust and social networks. London: Routledge; 2008. Pp. 37–57.

- World Bank. Violence in Colombia: building sustainable peace and social capital. Washington: World Bank; 2000.
- 15. McIlwaine C, Moser CON. Violence and social capital in urban poor communities: perspectives from Colombia and Guatemala. J Int Dev. 2001;13(7):965–84.
- 16. Harpham T, Grant E, Thomas E. Measuring social capital within health surveys: key issues. Health Policy Plan. 2002;17(1):106–11.
- Krishna A, Shrader E. Cross-cultural measures of social capital: a tool and results from India and Panama. Washington: World Bank; 2000
- Vial EA, Junges JR, Olinto MTA, Machado PS, Pattussi MP. Violência urbana e capital social em uma cidade no Sul do Brasil: um estudo quantitative e qualitativo. Rev Panam Salud Publica. 2010;28(4):289–97.
- Deng LB. Social capital and civil war: the Dinka communities in Sudan's civil war. Afr Aff. 2010;109(435):231–50.
- Goodhand J, Hulme D, Lewer N. Social capital and the political economy of violence: a case study of Sri Lanka. Disasters. 2000;24(4): 309–406
- 21. Halpern D. Social capital. Oxford: Blackwell Publishing; 2005.
- Kawachi I, Kennedy BP, Lochner K, Prothrow-Stith D. Social capital, income inequality, and mortality. Am J Public Health. 1997;87(9): 1491–8.

- Szreter S, Woolcock M. Health by association? Social capital, social theory, and the political economy of public health. Int J Epidemiol. 2004;33(4):650–67.
- Putnam RD, Leonardi R, Nanetti RY. Making democracy work: civic traditions in modern Italy. Princeton: Princeton University Press; 1994.
- Putnam RD. Bowling alone: America's declining social capital. J Democr. 1995;6(1): 65–78.
- Coleman JS. Social capital in the creation of human capital. Am J Sociol. 1988;94(suppl): S95–120.
- 27. Woolcock M. The place of social capital in understanding social and economic outcomes. Can J Pol Res. 2001;2(1):11–7.
- Bourdieu P. The forms of capital. In: Richardson J, editor. Handbook of theory and research for the sociology of education. New York: Greenwood; 1986.
- De Silva MJ, Harpham T, Tuan T, Bartolini R, Penny ME, Huttly SR. Psychometric and cognitive validation of a social capital measurement tool in Peru and Vietnam. Soc Sci Med. 2006;62(4):941–53.
- 30. De Silva MJ. Context and composition? Social capital and maternal mental health in low income countries [thesis]. London: London School of Hygiene and Tropical Medicine; 2005. Available from: http://www.social capitalgateway.org/sites/socialcapitalgate

- way.org/files/data/phdthesis/2011/08/04/socialcapitalandmentalhealth.pdf
- Victora CG, Huttly SR, Fuchs SC, Olinto MT. The role of conceptual frameworks in epidemiological analysis: a hierarchical approach. Int J Epidemiol. 1997;26(1):224–7.
- 32. United Nations Development Programme. Informe estadístico de la violencia en Guatemala. Ciudad de Guatemala: Programa de Seguridad Ciudadana y Prevencion de la Violencia del PNUD. New York; UNDP; 2007.
- 33. Gaviria A, Pagés C. Patterns of crime victimization in Latin American cities. J Dev Econ. 2002;67(1):181–203.
- Piquet Carneiro L. Violent crime in Latin American cities: Rio de Janeiro and Sao Paulo. São Paulo: University of São Paulo; 2000.
- 35. Moser CON, Shrader E. A conceptual framework for violence reduction. Washington: World Bank; 1999.
- 36. International Trade Union Confederation. Annual survey of violations of trade union rights [Internet]. Brussels: ITUC; c2010–2012. Available from: http://survey.ituc-csi.org/Accessed 6 October 2011.

Manuscript received on 1 May 2012. Revised version accepted for publication on 21 August 2013.

## **RESUMEN**

# Violencia y capital social en la Guatemala posterior al conflicto

*Objetivo.* La violencia en la Guatemala posterior al conflicto tiene graves consecuencias para la salud pública de la población. El objetivo de este estudio fue evaluar la relación entre la violencia y el capital social.

*Métodos.* Se analizaron los datos de una encuesta transversal sobre victimización realizada del 2008 al 2010 en Guatemala. Se empleó el muestreo proporcional en dos etapas. Se obtuvo una muestra aleatoria de hogares ( $n=1\,300$ ) seleccionados de una muestra aleatoria de comunidades (n=118) de cinco departamentos administrativos. La encuesta recopiló información sobre la exposición de 6 335 personas a la violencia durante seis meses. El capital social se midió a escala doméstica mediante la versión abreviada de la Herramienta Adaptada de Evaluación del Capital Social (SASCAT, por sus siglas en inglés). Se calculó la razón de posibilidades de exposición a la violencia doméstica mediante regresión logística múltiple. Se incluyeron los datos a escala comunitaria del último censo nacional como factores comunitarios explicativos. A escala doméstica, se incluyeron el nivel de ingresos, el grupo étnico y el capital social. Los datos se analizaron mediante el SPSS 18.0.

**Resultados.** En total, 2,7% de las personas y 11,7% de los hogares se habían visto expuestos a la violencia en los seis últimos meses. El análisis multifactorial mostró que 1) el capital social estructural (en este caso, el nivel de participación en las redes de relaciones sociales y la sociedad civil) constituía un factor de riesgo de violencia; y 2) el capital social cognitivo (medido como la confianza, las normas y el sentido de pertenencia) constituía un factor protector frente a la violencia.

Conclusiones. La dirección opuesta de la asociación entre la violencia y el capital social estructural y el cognitivo cuestiona el empleo del capital social como un concepto unificado. Si este hallazgo se corrobora en otros estudios, el capital social estructural y el cognitivo deberán considerarse como dos conceptos marcadamente diferentes.

#### Palabras clave

Violencia; medio social; América Central; Guatemala.