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Article

Mental health, interpersonal trust and subjective well-being in a high violence context

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ABSTRACT

This paper assesses whether two factors of wellbeing, social capital (interpersonal trust and social networks) and subjective well-being are associated with frequent mental distress and if there are any mediating effects by gender in a city of high urban violence. This paper relies on data that comes from a sample of over 1300 people representative by gender, race/ethnicity, and socioeconomic breakdown of the city of Cali in Colombia, which was collected in 2017 through face-to-face surveys.

Our study uses logistic regression with fixed-effects at the district level to control for unobserved time-invariant factors. At the individual level, our analyses account for social and demographic context variables. The dependent variable is mental distress, defined as having 14 or more days feeling mentally ill in the previous 30-day period. Independent variables of interest are "interpersonal trust in unknown people" measured in a scale 0–10 and, social networks measured using the number of family members and close friends and subjective well-being through a question about life satisfaction in a scale 0–10. We find risk factors for mental health distress were low trust in unknown people, low life satisfaction, high levels of depression, living in cohabitation, being female, not having children, and living in middle socio-economic status. The odds of feeling mentally ill decreased as trust in unknown people increased by each unit in the trust scale (OR: 0.92). There were gender differences, with women's mental health being less likely to be affected by lack of interpersonal trust (OR: 0.94) than men (OR: 0.76).

Our study suggests that actions aimed at fostering interpersonal trust in unknown people could positively affect mental health distress for both males and females. In the context of high urban violence, our study shows that men are more likely to benefit from such actions.

Introduction

The purpose of this paper is to assess the relationship between mental health and different measures of social capital including interpersonal trust, social network and subjective well-being in Cali, Colombia. The context matters because Cali is well known for its high rates of crime and violence given a long history of drug-trafficking. In addition, Cali is a host of a large population of displaced population victims of the armed conflict. The interest in studying a context like Cali is based on the high rates of crime that affect social capital, subjective well-being, and mental health. In Cali by 2017, there were reported 53 homicides per 100.000 inhabitants as compared with 16 homicides in Bogotá, the city capital of Colombia (Cali como Vamos, 2018)

Mental health is increasingly gaining attention in the academic literature given the negative impact it has on quality of life, productivity and health system costs (Artazcoz, Benach, Borrell, & Cortès, 2004; Collins et al., 2011; Kawachi, 2001; Prada, Takeuchi, Merchán-Galvis, & Ariza-Araújo, 2017). The literature on the social determinants of health has evolved (Harpham and Grant, 2002; Almedom, 2005; De Silva, McKenzie, Harpham, & Huttly, 2005), and it now recognizes the relevance and the sensitivity of health to measures of social capital. Where people live, the interactions they have and their involvement with the community matters and affect their mental health (Wilkinson & Marmot, 2003).

Despite the methodological challenges to measure social capital, social scientists and different international organizations converge to proxy social capital with self-reported measures of interpersonal trust and interpersonal relationships (De Silva et al., 2005). Subjective well-

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being -measured through life satisfaction-, is not *per se* a measure of social capital but it has been linked to both, social capital and health outcomes. There is empirical evidence on how low levels of social capital and life satisfaction are associated with poor mental health outcomes (Bray & Gunnell, 2006; Kim, Chung, Perry, Kawachi, & Subramanian, 2012; Tomita & Burns, 2013). These studies were conducted in developed countries. Less is known on how social capital and subjective well-being interact with mental health in environments with high exposure to crime and violence, and whether such interactions differ by gender.

There is only one previous study in Colombia looking at these questions. However, it focused only on youth (15–25 years) and a single low-income community (Harpham, Grant, & Rodriguez, 2004). Our study uses data from a survey that is representative of the entire city, all socioeconomic strata and includes adults from 18 to 65. The same survey has been used recently to show how high homicide rates are associated with a higher likelihood of being obese, frequent physical distress and mental distress (Martínez, Prada, & Estrada, 2018).

Literature review

A "positive" mental health state is not necessarily the absence of a mental disorder, but instead, it refers to good health quality and the functioning of individuals, families, and communities (Barry, 2009). According to the World Health Organization, mental health can be defined as a state of well-being in which every individual can cope with the normal stress of life while contributing to the community and live a productive life (World Health Organization, 2013). The bulk of the literature on risk and protective factors associated with a positive mental health focus on populations living in high-income countries. Despite awareness on the need to study mental health in the context of low and middle-income countries, the evidence is still scarce for these populations (World Health Organization, 2014).

There is a consensus that mental health is shaped by social conditions, which encompasses economic factors, living conditions, inequalities, exposure to traumatic events, violence, crime and poverty amongst other factors. It is also known that mental health varies in function of gender, race, education, and income (World Health Organization, 2014). There is good evidence showing that the vulnerable, the poor, those belonging to racial minorities, and women suffer disproportionally common mental health disorders such as anxiety and depression (Lund et al., 2010; Melzer, Fryers, & Jenkins, 2004; Patel et al., 2010).

An important strand of research has focused on the study on how social capital and subjective well-being impacts mental health. The results of this body of research have offered potential insights into how to intervene in community conditions to improve health. Authors from different disciplines coincide in that it is necessary to understand the relationship between social capital and health outcomes since social capital interventions tend to be relatively inexpensive and are easily accepted by people intervened (Berry et al., 2010).

Social capital can be broadly defined as the features of social life, such as social networks, norms, and trust, that allow members of social groups to act together in a practical way, so that they can achieve shared objectives (Putnam, 1993a). Social capital has also been defined concerning structural components -social networks- and cognitive components -interpersonal trust- (Almedom, 2005).

The quality and quantity of social interactions and social capital play a significant influence in educational achievement (Coleman, 1988), democracy (Putnam, 1993b), levels of crime (Walberg, McKee, Shkolnikov, Chenet, & Leon, 1998), emotional health (Rose, 2000b; 2001) and mental health (Harris, Brown, & Robinson, 1999a). There is also an association between social capital –measured through membership in organizations, social trust, and civic engagement-with better health outcomes (mental and physical) and violence decrease in high-income countries (Kawachi, Kim, Coutts, & Subramanian, 2004). Similar results in OECD countries have been reported (Poortinga, 2006). Hamano et al. (2010), concluded that individuals with high levels of cognitive and structural social capital have better mental health outcomes in Japan. Social participation also contributes positively to strong mental health in Australia (Berry et al., 2010) and United States (Kawachi, Kennedy, & Glass, 1999). Cross-country comparison of 93 countries also confirms the strong and positive link of social capital and individual health. Social interactions and social capital, have been also studied in the context of race and gender, particularly in labor outcomes. This body of research suggest that race minority population and women are trapped with limited social capital, information and resources that provide limited opportunities to access to better paid or prestigious job opportunities (McDonald, 2011; McGuire, 2000, 2002; Smith, 2005)

Moreover, analysis suggests that social capital seems to have a stronger link in developing than developed countries (Rocco & Aas, 2016). For Colombia, there is one study that was published 15 years ago and concludes the opposite of the studies revised. Harpham et al. (2004) used logistic regression with mental health as the dependent variable and found that having low trust in people was a potential risk factor for mental health illness in a low-income, young community (age 15–25 years) in the city of Cali. Results also showed that when violence factors were added to the model, the trust effect on mental health was lost. A more recent study conducted in Colombia about social capital and self-reported health (Hurtado, Kawachi, & Sudarsky, 2011) found a strong correlation between interpersonal trust and different measures of social capital -cognitive social capital and associational membership-. Regional differences were not established, but it is reported that gender-related groups and farmers had a higher probability of reporting poor health.

Subjective well-being has also been linked with better health outcomes through pathways of social networks and support. In other words, social capital is strongly related to subjective well-being thought different channels –marriage, family, social ties, civic engagement, interpersonal trust, neighborhoods-which in turn affect overall health (Berry et al., 2010; World Health Organization, 2013). Subjective well-being can be defined as "good mental states, including all of the various evaluations, positive and negative, that people make of their lives, and the affective reactions of people to their experiences" (OECD, 2013, p. 29).

The positive relation between subjective well-being and health has been documented in several contexts. In a comparative study of 33 European countries combining different data sets, was found that high levels of life satisfaction and happiness were negatively correlated with suicide rates (Bray & Gunnell, 2006). In Canada, using the World Values Survey is reported that marriage and family, social networks, civic engagement and trust are independently related to life satisfaction and health (Helliwell & Putnam, 2004). In South Asian countries (Japan, South Korea, Singapore, five areas in Mainland China, and Taiwan) is reported that lack of trust in organizations and a person to consult were related to poor life satisfaction. Differences by gender are also reported in which women present lower health satisfaction (Yamaoka, 2008). Using multi-level estimation methods, it has been reported a positive association between social capital, health and subjective well-being in rural China (Yip et al., 2007). The strength of the association varies by countries or by outcomes measured, but, in general, all scholars found a positive association between subjective well-being (measured through life satisfaction) and mental health outcomes.

Violence or crime rates have not been tested directly in these studies. However, the perception of being safe (as a proxy of violence context), has been directly associated with self-rated health. Kim et al. (2014) studied the association between district-level safety and residents' self-rated health, by using a mixed effect logistic regression. Results showed that if people perceived that their district was unsafe, then the probability of rating health as poor was higher. Likewise, family social capital has been related to children's and adolescent's well-

being, health and development (Almedom, 2005; Kawachi, Kennedy, Lochner, & Prothrow-Stith, 1997).

The associations between mental health, social capital and subjective well-being in a context of high-violence have not been studied recently. This paper seeks to show how social capital and well-being may affect mental health outcomes for people living in a high violence context.

Methods

Source of data

Data for this analysis comes from a large population survey conducted annually in the city. The survey, called CaliBRANDO is conducted by the Observatory of Public Policy–POLIS- of Universidad Icesi uninterruptedly since 2014. CaliBRANDO is a structured survey representative of the socioeconomic, gender, and racial/ethnic composition of the city with a margin error of 2.8% and confidence level of 95%. More than 1200 surveys are collected annually for a representative sample for the adult population in the city. The survey uses a multistage stratified sampling. First stage is the selection of 38 points around the city. Second stage, defines quotas according to socioeconomic strata, gender and race/ethnicity. Third stage is the random selection of target population. For full description of the survey, including questionnaire and use of the data see Martínez (2017).

Surveys are collected in face-to-face interviews by trained pollsters from randomly selected adults across different points in the city. Interviews takes about 35 min, respondents are approached explaining the purpose of the study and assuring confidentiality. No personal information that allows identification is collected such as names, address, contact information or national ID number. This analysis uses data collected in 2017. Over 1300 adults were randomly selected for a face to face interview about health outcomes, life satisfaction, and interpersonal trust. The survey included a new module of interpersonal and institutional trust that have been tested by The Organization for Economic Co-operation and Development (OECD, 2017) and which is the basis of our analysis.

Outcome variables

CaliBRANDO uses the guidelines designed for the Centers for Disease Control and Prevention (CDC) to measure “healthy days” (Centers for Disease Control and Prevention–CDC, 2002). For this analysis we use the following question to proxy for mental health: “Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?”. Mental health illness is defined as a person that had 14 or more days in the previous 30-day period feeling mentally ill. This last measure corresponds to the definition of frequent mental distress (Centers for Disease Control and Prevention–CDC, 2002).

Independent variables

To measure interpersonal trust, we use the following question from the OECD guidelines: “And now a general question about trust. On a scale from zero to ten, where zero is not at all, and ten is completely, in general, how much do you trust most people?” (OECD, 2017). We proxy social capital through two questions: i) the number of family members, and ii) number of relatives and close friends (someone to discuss personal problems or whom will help in a difficult situation). Other measures of social capital suggested in the literature such as participation in the local community, work connections, proactivity in social contexts and tolerance of diversity was not collected (Harpham, Grant, & Thomas, 2002). Subjective well-being is measured through an evaluative question about life satisfaction: “Overall, how satisfied are you with life as a whole these days?” in a 0–10 scale (OECD, 2013)

Cofounders

We controlled for different individual characteristics that can affect mental health outcomes.. Depression and health satisfaction are also measured in a 0–10 scale (0 not depressed and 10 very depressed, 0 not satisfied with health and 10 satisfied with health status). Feeling safe (yes or no type of question) is used as a proxy of perceived violent and criminal environment. Other socio-demographic factors included in the statistical analysis that have been found to have mediating effect on health variables are age, race, gender, having children, socioeconomic strata and civil status (Nieminen et al., 2010; Feng, Vlachantoni, Liu, & Jones, 2016).

Statistical analyses

The statistical analysis is conducted using a nonlinear estimator: the logistic regression. Our aim is to assess whether the independent variables of interest increase or decrease the probability of the event of feeling mental distress while considering mediating factors and their nonlinear interactions. We estimated three different equations. One for all individuals in the sample, one for women and one for men. Estimations by gender allow to control for the full interaction of all the independent variables, or right-hand side variables and gender. The latter is important because effects of certain factors may differ by gender. Each regression estimation included: trust in unknown people score, life satisfaction score, self-reported depression score, self-reported health satisfaction score, an indicator for whether the person feels safe, number of family members, number of friends, age in single years, age to the square, marital status (reference category: married), self-reported ethnicity (reference category: white), sex, indicator for being parent, and socioeconomic status (reference category: Low SES). Results reported as odd ratios.

In addition, each regression includes an indicator for district level. This makes use of within-subject within-district variation to identify the association of included regressors in our outcome of interest. By including these indicators for district level, the estimations account for all unobserved (meaning that no measure is available) characteristics common to all individuals living in the same district that did not vary in the year of analysis, for instance the level of poverty, the amount and quality of public goods. This is known in the literature as fixed effects regression analysis (Allison, 2009). Standard errors accounted for cluster effects at the city zone level. All analyses were conducted using Stata 14 (StataCorp, College Station, TX).

Results

Table 1 gives demographics and other characteristics of individuals in the survey. The sample had a very similar number of women and men; average age was 38 years, and nearly 48% of those interviewed were either married or living in common law. Two-thirds of the sample had at least one child, and almost a fourth of them were black. Concerning social capital, 15.5% of the sample express high levels of trust in unknown people, have on average 3 family members and 4 close friends on which they can rely on. About 60.7% express high levels of satisfaction with their health status, and 4 out of 10 (38.4%) individuals feel safe.

Table 2 gives results for the full sample and by gender. Trust in unknown people were associated with a lower probability of being mentally ill for men (e.g., OR = 0.755; 99% CI: 0.71,0.85) but not for women. Individuals, men or women, that experienced high levels of life satisfaction were less likely to feel mentally ill. Results differ by gender in magnitude, with men benefitting more than women. Feeling safe was associated with a lower probability of being mentally ill for the full sample, but not statistically significant for either gender.

Table 1
Overall characteristics of the study sample, cali: CaliBRANDO (2017)

Characteristic	Year
	2017 (n = 1 066)
Trust in unknown people a(%)	15.0
Mean number of familiy members (SE)	3.4 (0.4)
Mean number of friends (SE)	3.9 (3.0)
Subjective well-being	
High Score in Life Satisfaction[b]	49.2
High Score in Depression c	6.8
Feels safe	38.4
Demographics, %	
Men	50.7
Women	49.3
Mean Age (SE), y	38.8 (0.4)
Indigenous	6.1
Black	25.3
Marital status, %	
Married	20,7
Living common law	28,1
Single	46.1
Divorce/Widower	5.1
Children, %	
Parent	65.5
Health, %	
Health satisfactiond	60.7
Felt mentally ill 14 days or more	8.0
Mean days per month felt mentally ill (SE)	2.7 (0.2)

Note: [a] Respondents were asked: "On a scale from 1 to 10, how much do you trust unknown people?" Where 1 is no trust and 10 is trust a lot. On this scale 8, 9 and 10 are consider a high score in trust. [b] Respondents were asked: "On a scale from 1 to 10, how satisfied are with your life?" Where 1 is very dissatisfied and 10 is very satisfied. On this scale 9 and 10 are consider a high score in life satisfaction. [c] Respondents were asked: "On a scale from 1 to 10, how depress do you feel?" Where 1 is no depress and 10 is totally depress. On this scale 9 and 10 are consider a high score in depression. [d] Respondents were asked: "On a scale from 1 to 10, how satisfied are you with your health?" Where 1 is very dissatisfied and 10 is very satisfied. On this scale 9 and 10 are consider a high score in health satisfaction.

As expected, men and women that experienced high levels of depression had higher odds of reporting being mentally ill. The number of family members was not associated with self-reporting as being mentally ill. Lastly, those who lived in cohabitation compared to those that were married were more likely to self-report as being mentally ill. The strongest association was for women living in cohabitation (e.g., OR = 3.912; 99% CI: 1.38,11.09).

In the full sample, being a woman was associated with twice the odds (OR = 1.939; 99% CI: 1.28,2.95) of self-report as being mentally ill. Women that had a child also experienced a lower probability of being mentally ill, as compared to those that do not have children. Moreover, those who lived in middle socioeconomic strata also were almost four times more likely to report being mentally ill than those who live in poor socioeconomic strata. This relationship was found statistically significant for women but not for men.

Discussion

The objective of our analysis was to assess whether social capital (interpersonal trust and social networks) and subjective well-being were associated with frequent mental distress and the mediating effects by gender in a city of high urban violence. A previous study in the same city found no association between social capital and mental distress when crime was accounted for, but it focused only on youth (15–25 years) and a single low-income community. In a larger sample representative of all communities in the city and including adults, we found that an internationally tested measure of trust is statistically associated as a protective factor against self-reporting as being mentally ill, accounting for violence in two ways. First, by including a self-reported measure at the individual level on feelings of safety; and second, by including fixed-effects at the district level, meaning that all time-invariant unobserved factors are statistically controlled for. Our findings however, are in line with a larger study in Colombia. As the results reported by Hurtado et al., (2011), we find that higher interpersonal trust and larger social networks are positively correlated with better self-reported health. Likewise, higher educational attainment has a positive association with the outcomes of the interest of this analysis.

Table 2
Results of logistic regression analysis of CaliBRANDO survey data: Cali, 2017

Variable	Full sample			Men			Women		
	14 or more unhealthy mental days			14 or more unhealthy mental days			14 or more unhealthy mental days		
	OR	SE	CI	OR	SE	CI	OR	SE	CI
Trust									
Trust in unknown people (from 1 to 10)	0.920***	−0.02	[0.89,0.96]	0.763***	−0.04	[0.69,0.85]	0.939	−0.03	[0.88,1.00]
Subjective well being									
Life satisfaction (1–10)	0.746***	−0.06	[0.64,0.88]	0.656***	−0.07	[0.54,0.80]	0.756***	−0.08	[0.62,0.92]
Depression (1–10)	1.266***	−0.03	[1.22,1.32]	1.377***	−0.07	[1.24,1.53]	1.285***	−0.04	[1.21,1.36]
Feels safe (yes)	0.817	−0.16	[0.56,1.20]	1.205	−0.27	[0.78,1.87]	0.829	−0.28	[0.42,1.65]
Social capital									
Number of family members	0.915	−0.08	[0.77,1.08]	0.845	−0.12	[0.64,1.12]	0.911	−0.15	[0.66,1.26]
Number of friends	1.018	−0.04	[0.94,1.10]	1.084	−0.08	[0.93,1.26]	1.004	−0.09	[0.85,1.19]
Demographics									
Age (years)	1.080	−0.06	[0.96,1.21]	1.366*	−0.22	[1.00,1.86]	0.994	−0.03	[0.94,1.06]
Age squared	0.999	0.00	[1.00,1.00]	0.996*	0.00	[0.99,1.00]	1.000	0.00	[1.00,1.00]
Common in law	2.677**	−1.14	[1.17,6.15]	1.865	−2.32	[0.16,21.37]	3.912***	−2.08	[1.38,11.09]
Divorce	1.926	−2.17	[0.21,17.58]	0.509	−0.84	[0.02,12.72]	3.182	−4.4	[0.21,47.83]
Single	1.754	−0.65	[0.85,3.62]	2.409**	−0.991	[1.08,5.40]	2.281	−1.14	[0.85,6.10]
Black	0.361***	−0.06	[0.25,0.51]	0.638	−0.56	[0.11,3.59]	0.385***	−0.09	[0.24,0.61]
Indigenous	0.905	−0.60	[0.25,3.29]	0.660	−0.60	[0.11,3.91]	1.196	−0.88	[0.28,5.05]
Woman	1.939***	−0.42	[1.28,2.95]						
Have child	0.673**	−0.13	[0.46,0.98]	1.17	−0.85	[0.29,4.84]	0.491*	−0.17	[0.25,0.96]
Middle SES	3.641***	−0.87	[2.28,5.82]	2.342	−1.49	[0.67,8.13]	7.013***	−2.32	[3.67,13.41]
High SES	1.074	−0.36	[0.55,2.09]	0.210**	−0.16	[0.05,0.89]	5.087**	−3.53	[1.30,19.85]
District included	YES			YES			YES		
Number of obs.	1054			462			478		

Protective factors

Our results are in line with the international literature (Berry & Welsh, 2010; Hamano et al., 2010; Kawachi et al., 1999; Nieminen et al., 2010) and strongly suggest that social capital policies aimed at building community could help people to better cope with unsafe environments, even in the context of high violence. It is worth noting that a "positive" mental health state is not necessarily the absence of mental distress, but instead, it is having the tools to navigate problems with the help of others (Barry, 2009).

The analysis also showed other protective factors: higher scores in the life satisfaction scale, having children, and being afro Colombian. Children and marriage are also correlated with higher subjective well-being and social capital in the context studied (Martínez, 2019). Having children might be a protective factor through bridging. It might be that having children increase the need to connect with the extended family or local community to get social support, taking care of child while working, and incentivizing school participation and making social connections with other parents. Stanger, Fisher, Howat and Wood (2014) found that families with children aged 0–5 years located in residential areas in Western Australia are more likely to connected with the community, because their need for social support and community engagement, which in turn increased social capital.

The fact that afro Colombians people experience a lower odd of being mentally ill than any other race is also not common in the literature. McKenzie, Whitley, and Weich (2002) explained that since often minorities, such as black people, experience marginalization, exclusion or persecution unless they adapt to the norms and way of networking to function they tend to experience higher odd of being mentally ill. Cali is particularly interesting in this respect. Of all the 21 Colombian cities with more than 300 thousand inhabitants in 2013, Cali is the city with the highest percentage of black people, at 26.2% (Dane. (n.d); Alcaldía de Santiago de Cali, 2013). And according to Alcaldía de Santiago de Cali (2013) is the second city in Latin America behind Salvador Bahia in Brazil. While blacks as a group are not a minority in Cali, they still maybe marginalized in forms such as: education, economically and work opportunities. However, these results might suggest that in cities where black people concentrate in large numbers, such as Cali, their social capital operates as a protective factor against mental distress. An empirical and comparative analysis of such phenomena is granted but out of the scope of this paper.

Risk factors

On risk factors, we found that for the full sample these were: self-reported depression, living in common law (as opposed to being married), living in middle socioeconomic status (as opposed to living in low socioeconomic status), and being a woman. Self-reported depression might increase the likelihood to self-report being mentally ill since it is normally used to diagnose clinical major depression (Prusoff, Klerman, & Paykel, 1972), and has been linked to several negative medical outcomes, such as, low birth weight infant or preterm delivery (Steer, Scholl, Hediger, & Fischer, 1992). Besides that, depression has also been associated with social capital; being the latter a mediating mechanism for making weaker the effects of stressors on depression (Fujiwara & Kawachi, 2008; Irwin, LaGory, Ritchey and Fitzpatrick, 2008). Further studies should consider these factors.

Living in common law is found to be a risk factor, which seems counterintuitive since several studies have found that being married can be a protective factor (Macintyre, 1992; Joutsenniemi et al., 2006). Maybe the effect of marital status on mental health depends on household context, not just the living arrangement. Latin America context differs widely from most of the studies made in developed countries, and this could be playing a role in explaining these results. Besides this, further studies could introduce an interaction between having children and marital status, since one is considered a protective factor and the other a risk factor.

Other studies have shown woman more likely to self-report being psychological distress (Kawachi & Berkman, 2001) or mentally ill than men (Gove & Tudor, 1973; Berry et al., 2010). Even though Berry et al. (2010) found that women reported higher overall levels of community participation and social cohesion (part of structural social capital) than men, they tend to report worse mental health, which might mean that the benefits from social capital are outbalanced by the stress factors caused by the need to give to others. For the middle class, there are some possible explanations of a higher odd of being mentally ill. First, an important share of the middle class in the city is vulnerable. Income has risen, but many are not incorporated to formal employment, over 50% consider that they can lose their job in the next six months, and more than half are left out for some parts of the social protection system such as saving for retirement. Likewise, conspicuous consumption is increasing but a cost of indebtedness and meager rates of savings. Despite middle class is growing, both in Colombia and the city studied, those who belong to this social category are growing vulnerable and left out from many social protection structures, which may be a stressor (Martínez, Short, & Zafra, Forthcoming).

Results by gender

Lastly, we found that most of the results were consistent by gender, which shows that the association of social capital (interpersonal trust and social networks) and subjective well-being with frequent mental distress affect similarly (in magnitude) both genders. For instance, trust is positively correlated with males but not for females. Literature show mixed results about the relationship of trust and gender. Buchan, Croson, and Solnick (2008) explained that this occur because each study focusses on a different aspect of trust and there is not a standardized instrument to measure it. However, through questionnaires and playing an investment game they showed that men may be more likely to trust that women because they expect to receive more in return of the trust they give.

On the other side, being a woman living in cohabitation increases the odds of being mentally ill by a factor of two as compared to men. Brown_et_al_2005 Brown, Bulanda, and Lee (2005) found that people that live in cohabitation and are over 50 years old, tend to report higher depression scores, which can occur since cohabitation is characterized by having economic and social support resources that differ from those that are married. However, Brown et al. (2005) found that married or cohabitating woman reported similar levels of depression, but cohabiting men showed higher levels of depression that married men. They explained that this can happen since men and women view relationships differently, and also because men perceive cohabiting of a situation of less care receiving that married men have.

We conclude by suggesting that policies at the city level aimed at fostering interpersonal trust in unknown people could positively affect mental health distress even in the context of high urban violence showing that the government must work in parallel in both fronts, building community trust and policing effectively on crime.

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