Segregation and Hispanic Homicide: An Examination of Two Measures of Segregation on Rates of Hispanic Homicide in Major Metropolitan Areas

Michael G. Bisciglia

Abstract
As the overall population of Hispanics within the United States has eclipsed that of African Americans, a mounting concern has developed regarding the rise in Hispanic lethal violence as a result of social and economic inequality. One means to measure this inequality is in the form of segregation. Research indicates that in many Hispanic communities, their levels of segregation from the White non-Hispanic population are similar to that of African Americans. Although a multitude of previous studies have looked at the impact of segregation among African Americans, the literature remains under-represented in terms of multi-city macro-level analyses among Hispanics. This current study extends the analysis of segregation’s effects on lethal violence to this population. To this end, two measures of segregation were used, the index of dissimilarity and exposure. Using data from the census and the Centers for Disease Control (CDC) mortality files, negative binominal regression models were created using a sample of 236 U.S. cities. The results indicated that both measures of segregation show a strong positive influence on rates of Hispanic homicides.

Keywords
Hispanic, Latino, homicide, segregation, lethal violence

Introduction
Over the last 20 years, there has been a decline in the U.S. violent crime rate. During this period of time homicides have declined from a peak in the early 1990s of 9.8 per 100,000 to 5.6 in 2007 (U.S. Department of Justice, 2007). Although this trend is promising, the decline has not been consistent among all racial/ethnic groups. Even though Hispanic crime has declined in a similar fashion to other minority groups (e.g., African Americans), the rate of homicide for Hispanics (7.6 per 100,000), although a third of that for African Americans, is still 3 times higher than the White population (Logan, Smith, & Stevens, 2011; Martinez & Valenzuela, 2006). Much like the African American community, this trend of victimization seems to be partially linked to the disorganized communities of large urban areas.

Researchers such as Hawkins (1999) assert that there has been insufficient progress made when attempting to understand the impact of race, ethnicity, and social class in homicide offenses and victimization. Although growing, the extent of research on the subject of macro-structural factors on Hispanic homicide is still dwarfed by the research on other racial/ethnic groups, such as African Americans (Martinez, 1996, 1997). This gap in the research also leaves an examination of the unique social/structural characteristics that influence violent acts among Hispanics practically untouched (Martinez & Lee, 1999a). There are two reasons commonly cited for this underrepresentation in the literature. First, the study of Hispanics is hampered by the limited amount of official data. Sources such as the Uniform Crime Report (UCR) fail to accurately report data for the Hispanic population (Martinez & Lee, 1999a). Second, apart from those of Mexican ethnicity, prior to the 1970s the Hispanic population was not recognized as an ethnic group in the United States. Until this point, much of the official data on victimization, employment, and so on failed to capture them (Bean & Tienda, 1987). Currently the recording of Hispanic ethnicity in the UCR is voluntary on the part of the policing agent, resulting in an uneven measure of Hispanic crime and victimization, particularly in cities where the Hispanic population is minimal. Another data limitation comes from victims studies, which to accurately identify the ethnicity of the...
offender requires the presence of the victim as well as an accurate recollection of the offender.

Given the limitations that exist with the study of Hispanics, researchers have postulated a variety of explanations to account for the overrepresentation of minority victimization, one being residential segregation. Massey and Denton (1993) have asserted that segregation has become a common feature of the modern urban community, with its result being that minority group members, through reduced contact with Whites, are alienated from social, political, and economic opportunities. In effect by segregating minorities from mainstream life, minorities have fallen victim to a number of negative outcomes, specifically violent crime (Feldmeyer, 2010; Hannon & DeFina, 2005; Krivo, Peterson, & Kuhl, 2009; M. R. Lee & Ousey, 2007; Peterson & Krivo, 1993, 2000; Shihadeh & Bisciglia, 2008; Shihadeh & Flynn, 1996).

It is generally agreed on that the impact of segregation is not uniformly felt across all racial/ethnic groups. For example, while the decreased contact of Hispanics to Whites may increase several negative outcomes, among them victimization, it is likely that few if any negative results are felt among members of the majority group (Shihadeh & Bisciglia, 2008; Shihadeh & Flynn, 1996).

With these factors in mind, there is an opportunity present to expand on the literature in reference to these macro-social relationships. Given that segregation between minority and majority groups can take a number of different forms, this analysis seeks to make two contributions. First this study seeks to bolster the number of multi-city macro-level analyses of Hispanics. Second, this analysis will make use of two separate measures of segregation (the Index of Dissimilarity and the Exposure Index) in an effort to determine which of these measures serves as a stronger predictor of Hispanic homicide.

Background

Although the American racial majority has generally supported the concept of racial integration in principle, as Farley and Frey (1994) reported, in practice little movement has been made in terms of this majority population accepting minorities into their neighborhoods. The result of this has been that minority groups such as Hispanics still face high levels of residential segregation, in many cities similar to that of African Americans (Massey & Denton, 1993). This feature of the modern urban environment has become institutionalized through real estate and banking practices. Initiatives on the part of the government have limited mobility for many individuals within the Hispanic community (Massey & Denton, 1993). This is further complicated by the fact that among the various Hispanic ethnic groups there is also variation in terms of race as well. As Massey and Denton (1993) pointed out, even among Hispanics, those of African American descent experience levels of segregation much higher than those of mixed race or of a White racial background.

Examination of the literature concerning the negative effects of segregation has consistently shown a positive correlation between this and violent crime in non-racially disaggregated crime (Hannon & DeFina, 2005; Messner & South, 1986; Potter, 1991; Rosenfeld, 1986; Sampson, 1985; South & Felson, 1990; Velez, Krivo, & Peterson, 2003). Subsequent studies have examined racially disaggregated crime that has shown that the violent crime-segregation link is more precarious for the minority rather than the majority group (Shihadeh & Bisciglia, 2008; Shihadeh & Flynn, 1996). Furthermore, a concentration of minorities in the interior of larger cities has also been shown to be an important element when predicting criminal violence (Charles, 2003; M. R. Lee, 2000; Parker & Pruitt, 2000; Shihadeh & Maume, 1997).

Although greater than in the past there are still fewer macro-social analyses focusing on Hispanics. Nonetheless a comparison between Hispanics and African Americans does point to some similarities between these two minority groups. For example, African Americans and Hispanics experience high levels of poverty concentration (DeNavas-Walt, Cleveland, & Roemer, 2001; Quillian, 2012). In addition, Hispanics have traditionally migrated to similar urban areas, as African Americans, often taking up residency in formally African American neighborhoods, thereby placing Hispanics in a similar structural environment (Cancino, Martinez, & Stowell, 2009; Cuciti & James, 1990).

Although structural similarities do exist between these groups, among the Hispanic population there are often additional challenges, such as the taking in of new immigrants that the African American community does not face (Sandefur & Tienda, 1988). As Feldmeyer (2010) noted, the examination of Hispanics and violent crime victimization has been limited when examining the impact of residential segregation. Although past studies have shown structural similarities between these two groups, there are additional issues that may impact the Hispanic population differently than African Americans. For example many Hispanics, primarily those who are a part of the recent immigrant group, face barriers to employment, political, and social institutions. Additional many must overcome language barriers, which is not a problem for most members of other urban poor groups. As a result Hispanics often face higher levels of segregation (Charles, 2003; Feldmeyer, 2010; Iceland & Nelson, 2008). In addition, they will often experience limited opportunities to attain a quality education (Feldmeyer, 2010; Martinez, 2002; Sampson & Bean, 2006) and limited housing opportunities as a result of discriminatory practices (Charles, 2003). Even within the Hispanic population, there are sub-cultural variations in terms of levels of segregation (Massey & Denton, 1993) and patterns of migration.

Even though Hispanics do experience more structural disadvantage than Whites, they generally experience less than African Americans. In addition, there is emerging data that seem to indicate that, unlike the African American population, the segregation of Hispanics from Whites, especially
when self-imposed, may serve to mitigate violent victimization rather than promote it. This phenomenon has been dubbed the Latino Paradox (Sampson, 2008; Sampson & Bean, 2006). The argument becomes that when Hispanics isolate themselves within an ethnic enclave, the informal social controls of the community will work to lessen rather than promote violent victimization. Further segregation may also work to insulate community members from the negative effects of poverty and isolation. At the same time, these communities can also fill the role of assimilating new immigrants (Charles, 2003; Iceland & Nelson, 2008) providing a shared cultural bond (Feldmeyer, 2009; M. T. Lee, Martinez & Rosenfeld, 2001; Shihadeh & Barranco, 2010) and providing economic aid, employment opportunities/information, and social support all of which may work to lower the rate of violent crime victimization (Desmond & Kubrin, 2009; Feldmeyer, 2009; Martinez, 2002; Sampson & Bean, 2006). Because the concept of the Latino Paradox hinges on a shared cultural background, one would expect that the segregation of Hispanics may only prove beneficial in situations where segregation occurs among a single ethnic group rather than a more diverse representation of Hispanic ethnicities. The end result becomes that although isolated from Whites, Hispanics may still thrive in these communities where these protective factors are more entrenched via the Latino Paradox (Sampson, 2008; Sampson & Bean, 2006). 

To summarize, previous research examining the relationship between minorities and the majority population has generally shown that the effects of segregation have promoted higher rates of violent victimization. Such a finding has been demonstrated in non-racially disaggregated analysis (Hannon & DeFina, 2005; Messner & South, 1986; Potter, 1991; Rosenfeld, 1986; Sampson, 1985; South & Felson, 1990; Velez et al., 2003) as well as within racially disaggregated data (Shihadeh & Bisciglia, 2008; Shihadeh & Flynn, 1996). Furthermore, although more macro-structural analyses of non-African American minority groups have appeared, further research is still necessary as Hispanics experience similar as well as unique structural differences compared with African American (Charles, 2003; Feldmeyer, 2010; Iceland & Nelson, 2008). Last, growing research has alluded to the possibility that unlike African American segregation has consistently been shown to be associated with rising levels of violent victimization (Shihadeh & Bisciglia, 2008; Shihadeh & Flynn, 1996), segregation among the Hispanic population may actually work to insulate some from lethal violence (Sampson, 2008; Sampson & Bean, 2006).

Given the body of literature on this topic, two research expectations are predicted from the forthcoming analysis. It is predicted that in major U.S. cities, residential segregation as measured by the index of dissimilarity between Hispanics and Whites will have a positive effect on rates of Hispanic homicide victimization. The second hypothesis asserts that Hispanic segregation as measured by exposure to the White population will also have a positive association on rates of Hispanic homicide victimization.

**Method**

**Data Sources**

This study examines the expectations presented above through the use of a city-level analysis within the United States. Data used for this analysis was taken from three sources. First, data for the independent variables were drawn from the U.S. Census Bureau’s Summary Tape File 3 (STF3). Further data regarding segregation (Index of Dissimilarity and Exposure) were acquired from Census data compiled and released by the Lewis Mumford Center for Comparative Urban and Regional Research. This included both the aforementioned segregation indices. The dependent variable (Hispanic homicide) was drawn from the Centers for Disease Control’s National Center for Health Statistics (NCHS) mortality files. These files are used primarily due to the inconsistency of reporting for Hispanics in the UCR (see Martinez, 1996). To avoid the possibility of year-to-year fluctuations in homicide rates, a 3-year average will be used bridging the 2000 census (1999, 2000, 2001).

**Unit of Analysis**

The unit of analysis for this study is cities in the United States, as this is the most probable location of poverty, crime, and social disorganization. Using cities with large populations also allows access to ethnic enclaves that may not be present in smaller communities. For the purpose of this study, cities to be included should satisfy two criteria: (a) They must have a total population of 100,000 or greater and (b) they must have a Hispanic population of greater than 2,000. Based on these criteria, some 236 cities were included in this analysis.

**Dependent Variable (Hispanic Homicide)**

The dependent variable is the Hispanic homicide rate. To examine homicides there are two primary sources that one may turn to. The first is the UCR, and the second is taken from the vital statistics data collected by the NCHS. While the methods of collection differ, research has shown a similar rate of homicide between the two sources. Data collected by the NCHS gain its information through the collection and coding of death certificates from throughout the United States. Like the UCR, these reports are reliant on the decisions of the individual imputing the original data, in this case a medical examiner or coroner. While this may be problematic, there is consistency between the two measures (Riedel, 1999). A singular benefit for the use of the UCR over the mortality files rests on the fact that the UCR may provide
information on the offender as well as the victim; however, as the majority of homicides are intra-racial, for the purpose of this study, such a distinction is unnecessary (Martinez, 1996). Because the UCR has not required the collection of data on Hispanics since 1980 (Martinez & Lee, 1999b), this analysis will rely on the data taken from the Centers for Disease Control (CDC) Mortality files. In addition, as we are concerned with Hispanic homicide, data from victimization sources such as the National Crime Victimization Survey would not provide this information. Through the use of the CDC data, information on race/ethnicity of victim, city of death, and residence can be obtained. To be assured of the potential structural effects of Hispanic homicides, only homicides where the residency and occurrence of the homicide were the same are included in this analysis. Due to the rarity of a homicide event, a 3-year average will be used to account for possible year to year fluctuations.

**Independent Variable (Segregation)**

For this analysis segregation will be measured through the use of the index of dissimilarity, which measures unevenness (see Massey & Denton, 1988). The index of dissimilarity is calculated by the following formula:

\[
D = \left[ \left( \frac{1}{2} \right) \Sigma |X_i - A_i| \right] \times 100
\]

where \(X_i\) refers to the proportion of all Hispanics in a given census tract and \(A_i\) refers to the proportion of Whites in a given census tract.

The index of dissimilarity is used to assess the segregation between two groups (in this analysis Hispanics and Whites). Ranging from 0 to 100, the higher the values, the greater the segregation between these two groups and the more residents who would need to relocate from one census tract to another to produce racial parity across a given city, the geographic unit of analysis for this study (Shihadeh & Flynn, 1996; Shryock, Siegel, & Stockwell 1976; Siegel & Swanson, 2004). In the case of this analysis, as the index of dissimilarity gets larger, Hispanics and Whites become more segregated from one another. As a result, it would mean that members of one group would need to relocate to lower the overall level of segregation in the city.

In addition to the measure of dissimilarity, this analysis will measure segregation based on the exposure/isolation index. This index examines the possible contact that may exist between group members (Massey & Denton, 1988; Siegel & Swanson, 2004). This index ranges from 0 to 100, where lower values indicate a greater degree of isolation from other groups and higher values indicate that the group in question resides in areas with different races or ethnicities (Siegel & Swanson, 2004). The use of this measure offers insight into the settlement patterns among a specific group. For example, if the exposure to other groups is relatively high, this indicates that the minority group under investigation tends to reside among the reference group. Conversely if this value is low, then members of the minority group tend to reside among their own enclaves.

Exposure by means of the interaction index is calculated by the following formula:

\[
P^* = \Sigma \left( \frac{X}{X} \right) \left( \frac{Y}{t} \right)
\]

where \(X\) refers to number of Hispanics in area \(i\) (e.g., census tract), \(Y\) refers to the number of members in the reference group in a given area (e.g., Whites in a given census tract), \(X\) refers to the total number of Hispanics in the population (e.g., city) and \(t\) refers to the total population in a given area (e.g., census tract).

These data were calculated and compiled by the Lewis Mumford Center using the above-described method. Data were provided for exposure and dissimilarity scores for 2000 for Hispanics to Whites.

**Control Variables**

A recurring problem in the research of Hispanics has been the inconsistency of how this group is measured. This analysis proposes the traditional measure of Hispanics. This measure follows past studies that identify as individuals whose national origin is of Mexican, Cuban, Puerto Rican, or one of any other 20 Spanish-speaking nationalities (Bean & Tienda, 1987; Moore & Pinderhughes, 1993).

A secondary measure of the Hispanic population that will be used in this analysis is the Hispanic Index of Qualitative Variation (IQV). This measure indicates the degree of dispersion among the various Hispanic ethnicities under investigation. This analysis breaks Hispanic ethnicities into four groups, Puerto Ricans, Cubans, Mexicans, and Other Hispanics. When calculated, the Hispanic IQV produces a score of 0 to 1, where higher values indicate a greater level of dispersion of the various Hispanic ethnic groups. For example, if the value of a given city’s IQV were 0, it would indicate that all members of the Hispanic minority were of a common ethnicity (e.g., Puerto Rican). Conversely if a city’s Hispanic IQV were 1, then there would be an equal number of Hispanics in each ethnic classification. Although these measures seem similar, preliminarily analyses have not shown a high degree of correlation between the population counts of Hispanics and the Hispanic IQV. The use of this measure is unique to previous studies as most have relied only on a measure of total Hispanic population. I argue that the use of such a measure is misleading as it fails to capture the possible lack of social interaction between different Hispanic nationalities. Furthermore, the use of this measure will allow us to determine if heterogeneity in the Hispanic community acts to reinforce traditional roles and social structures compared with areas where these ethnic enclaves
may not be as pronounced. As stated earlier research has alluded to the idea that unlike minority groups, such as African Americans, segregation may work to insulate Hispanics from the negative effects associated with segregation (Sampson, 2008; Sampson & Bean, 2006). Such a finding may however be effected by not only the segregation of Hispanics to the majority population but may also be effected by the ethnic make-up of the Hispanic population. A measure such as this allows for an accounting not only of segregation between racial/ethnic groups but within the Hispanic community as well.

This analysis utilizes a number of additional control measures that previous research examining rates of homicide have used. To control for possible variations in welfare assistance, which may have an effect on family formation (Shihadeh & Steffensmeier, 1994), the average level of assistance will be used. Also, included in this analysis is the average age of the male population (ethnic specific), as areas with high concentrations of youths tend to have higher rates of criminal involvement (Greenberg, 1985; Steffensmeier, Allan, Harer, & Streifel, 1989). Population size for a given city will also be calculated as the total number of residences. In addition, race/ethnic-specific population measures will be used.

Education was also taken into consideration for this analysis and was reported as the average level of education attained by the race/ethnic-specific group under investigation. In addition to education, this analysis also examines Hispanic unemployment. This analysis uses the percentage for the Hispanic male population who are unemployed. Tied to this concept of unemployment are Hispanic male youth who are considered disengaged from common social institutions. This measure calculates the percentage of Hispanic males between the ages of 16 and 19 years who are in neither school nor the military nor the labor force. This analysis will utilize a gini concentration ratio to determine the inequality of income for a given city.

This study will also control for region with a southwest dummy variable. The southwest dummy was calculated by taking all cities considered to be in the southwest of the United States (Arizona, California, New Mexico, Colorado, and Texas). The primary reason for this is due to the large concentration of Hispanics who reside in this area.

To measure housing structure, two measures were considered. The first measure examined the percentage of homes within a city that were multi-family dwellings. This was calculated by taking the total number of structures with more than five units (e.g., apartments) and dividing them by the total number of housing structures within a community. The second measure used a calculation of population density. This was projected as the total number of individuals residing within a city’s geographically defined limits divided by the total available landmass of the city. An examination of these measures reported a high level of colinearity between the two and the latter was included in the forthcoming analysis (see Appendix for a complete correlation matrix for all variables use in this analysis). The decision to use population density was due to the increasing number of multi-family structures that are changing the urban landscape of many major cities (e.g., town homes and condominiums). Such a shift represents a change in the traditional concept of low-income apartment structures that the former measure had originally been used to for.

**Results: Descriptive Statistics**

Table 1 presents the means and standard deviations for the measures that were used in this analysis. Based on a sample of 236 cities, during the 1999 to 2001 period, the average number of homicides among Hispanics was 7.42 per year with a standard deviation of 26.38. As a point of comparison, African American homicides were also calculated in 208 cities with 100,000 and 2,000 African Americans. An analysis of these cities indicated that the average number of African American homicides was 19.76 with a standard deviation of 54.04.

By looking at these two racial/ethnic groups, we can see that not only do African Americans experience a higher number of homicides on average, but there is a greater amount of dispersion in their scores as well. As another point of reference, when looking at the number of homicide victims among the White population, the average number of homicides was 6.92 with a standard deviation of 22.69. This result confirms previous studies that have shown that Hispanics homicides fall more closely to that of Whites than to African Americans (Fox & Zawitz, 2001; Logan et al., 2011; Martinez & Valenzuela, 2006; Peterson & Krivo, 2000; Rennison, 2002). To illustrate the difference in segregation, this analysis presents two measures of segregation and will discuss them in relationship to African Americans to give perspective to the measures for Hispanics. Previous research documents the influence of African American segregation on a number of social problems (Sampson, 1987; Shihadeh & Steffensmeier, 1994). This study examined the impact of segregation to determine if a similar effect exists. To measure segregation, this study utilized two measures of segregation. The first is the index of dissimilarity. Among Hispanics on average 34.82% of this population would have to relocate to achieve an even distribution between Whites and Hispanics. These values ranged from a minimum of 12.45% to 67.30% with a standard deviation of 11.91%. In comparison, African Americans experienced a higher level of segregation than Hispanics. On average, African Americans exhibit a dissimilarity score of 51.11%, more than 15% higher than that of Hispanics. Furthermore, there is a larger range of dissimilarity for African Americans (17.4% to 97.7% with a standard deviation of 18.05%). Overall these data demonstrate that Hispanics experience a lesser degree of segregation than African Americans.

To further explore the issue of segregation, a measure based on isolation was also utilized. Isolation or exposure to
Table 1. Descriptive Statistics.

|                          | M     | SD  |
|--------------------------|-------|-----|
| Dependent variable       |       |     |
| Hispanic homicide        | 7.42  | 26.38 |
| Independent variables    |       |     |
| Index of dissimilarity   | 34.82 | 11.91 |
| Exposure/Isolation index | 47.30 | 20.11 |
| Control variables (demographics) | | |
| Hispanic IQV             | 0.61  | 0.17 |
| Female-headed households  | 20.42 | 9.36 |
| Education                | 11.59 | 0.87 |
| Average age of Hispanic male population | 26.42 | 2.43 |
| Population density (per square mile) | 4,386.36 | 3,549.94 |
| Control variables (economics) | | |
| Male unemployment        | 7.98  | 3.56 |
| Disengaged Hispanic males | 15.76 | 6.20 |
| Median income            | 35,496.69 | 9,306.77 |
| Income inequality (Gini) | 45.18 | 4.69 |

Note. IQV = index of qualitative variation.

Results: Multivariate Statistics

One question that has surrounded the literature concerning homicides has been the influence of negative disadvantages (e.g., segregation, poverty, lack of education, etc.) on minority groups as it relates to homicide. This section will examine the disadvantage of segregation on two separate dimensions. The first looks at segregation based on the index of dissimilarity (unevenness) while the second measures segregation on the basis of exposure (potential contact).

The first model of Table 2 examines the influence of segregation through the use of the index of dissimilarity. These findings show a strong positive association between segregation among Hispanics and Whites and the number of Hispanic homicides. Based on the these results, we find that for every one standard deviation increase in Hispanic/White segregation, there is a 144.31% increase in the number of homicides. This finding highlights the negative impact of segregation on Hispanics. This analysis also looks at the effect of ethnic isolation to see if it affects the number of homicides. Based on the findings of this analysis, the IQV, used to measure the dispersion of Hispanic ethnicities, indicates that no significant association exists. Based on these findings, a concentration of a single Hispanic ethnicity did not increase or decrease the number of Hispanic homicides.

Table 2 also presents the results of the analysis for Hispanics for a variety of control measures. These findings demonstrate that a variety of control measures significantly impact the number of homicides that occur among Hispanics. Within this community housing costs show a negative association with homicides. As the median rent for Hispanics decreases by a single standard deviation, there is a 35.47% increase in the number of homicides. Interestingly, among Hispanics income inequality does not significantly impact the number of homicides. Among Hispanics regionalism is also associated with homicides, where individuals residing in the southwest experienced a higher number of homicides compared with those in non-Southwestern regions of the United States. Finally, factors such as education and age are significant in this model. Educational attainment was found to lower homicides among Hispanics (3.76% for each standard deviation increase in education). Also, as the average age of the male population decreases homicides increase.

The second model presented in Table 2 analyses the impact of segregation on homicide using the measure of exposure. Exposure, like dissimilarity, is significantly associated with Hispanic homicide. In this case the association was negative, meaning that as Hispanics become more isolated within their own enclaves the number of homicides increased. For each standard deviation decrease in the exposure of Hispanics to Whites, the number of homicides increased by 27.51%. Regardless of which measure is used, the impact of segregation is clear, namely that segregation from the majority group has a negative outcome on the minority group.

The findings of the second model were generally consistent with the first model, with a few exceptions. First, in this model income inequality does show a statistically significant association to the number of homicides that occur. Second, unlike in the previous model Hispanic female-headed households were significantly associated with Hispanic homicide.
Finally, in the exposure model, Hispanic males who are unattached to social institutions (disengaged) are also positively associated with homicide.

**Discussion and Conclusion**

Based on a review of the literature on the subject of segregation and lethal violence, two hypotheses were predicted. The results of an analysis using negative binomial regression models on a 236-city sample was implemented to test these expectations. The first hypothesis asserted that increased segregation, measured by the index of dissimilarity, between Hispanics and Whites would result in higher instances of homicide. The results of this analysis were confirmed in the regression model, indicating that for each standard deviation increase in the index of dissimilarity resulted in a corresponding 144.31% increase in Hispanic homicide. Such a finding seems in line with previous research concerning segregation and homicide.

The second expectation of this study asserted that potential exposure (or isolation) would impact rates of Hispanic homicide. In this case, it was predicted that as Hispanics became more isolated from the majority population (Whites), the rates of homicide would increase, or that as they became more exposed to the majority group rates of homicide would go down. Results indicated that as exposure decreased (Hispanics became more isolated from Whites) homicides increased by 27.51%.

Theoretically, this research demonstrates that many of the structural factors that serve to disorganize metropolitan communities (e.g., income inequality, segregation, poverty, etc.) are shown to have an affect on members of the Hispanic community in a similar fashion as they affect African Americans. The findings of this analysis follow the consensus of previous research specifically in showing that segregation (measured in both manners) between the majority group and Hispanics is associated with rising homicide rates (Charles, 2003; M. R. Lee, 2000; Parker & Pruitt, 2000; Shihadeh & Flynn, 1996; Shihadeh & Maume, 1997; Shihadeh & Bisciglia, 2008). Even though Hispanics experience a lower number of homicide victimizations than African Americans (Logan et al., 2011; Martinez & Valenzuela, 2006), many of the same structural components that are associated with African American homicides had similar effects among this group. Such findings lend support to the concept that structural elements within urban communities as correlated with segregation are likely to affect any potential number of minority groups.

Notwithstanding, in recent years, a growing body of literature has asserted that among Hispanics, segregation may actually work to buffer violent crime rather than promote it (Sampson, 2008; Sampson & Bean, 2006). Although this analysis finds support for the link between segregation and Hispanic homicide, there are specific limitations. It has been suggested that the effect of self-segregation may be beneficial in specific Hispanic communities, namely those that

| Table 2. Negative Binomial Regression—Hispanics. |
|------------------------------------------------|
| Dissimilarity | Exposure |
|              |          |
| **Variables—Independent** |          |
| Dissimilarity Hispanic to White | 0.075*** | 0.011 |
| Exposure Hispanic to White | -0.016* | 0.008 |
| **Variables—Demographic** |          |
| % population Hispanic | 0.010 | 0.007 |
| Hispanic IQV | -0.285 | 0.762 |
| Population density | 0.000* | 0.000 |
| Southwest dummy | 1.338*** | 0.237 |
| Average Hispanic education | -0.440* | 0.186 |
| Average Hispanic male age | 0.112* | 0.048 |
| **Variables—Economic** |          |
| Gini index | 0.030 | 0.025 |
| Hispanic male unemployment | -0.069* | 0.033 |
| Female-headed households | 0.024 | 0.012 |
| Median Hispanic rent | -0.003*** | 0.001 |
| Disengaged Hispanic males | 0.024 | 0.019 |
| Constant | -0.360 | 2.18 |
| Pseudo $R^2$ | 0.2265 | 0.1953 |
| N | 236 | 236 |

*Note: IQV = index of qualitative variation.

$p < .05$. **$p < .01$. ***$p < .001$. 

The results of this analysis were confirmed in the regression model, indicating that for each standard deviation increase in the index of dissimilarity resulted in a corresponding 144.31% increase in Hispanic homicide. Such a finding seems in line with previous research concerning segregation and homicide.
support a single ethnicity or in communities with a legacy of migration (Shihadeh & Barranco, 2010). Future analysis may seek to tease out this possible variation by distinguishing those urban spaces that have established patterns of migration from those that are representative of new migratory destinations and therefore are less likely to be representative of strong community cohesion and social control.

Subsequent analyses may also want to take into account the dispersion of Hispanic ethnicities within a community. The logic being, the more homogeneous Hispanics are within a community (concentrated into a single ethnicity), the higher the probability that members will interact with one another. Simply put, classification as Hispanic may not be enough to warrant meaningful contact with other Hispanics, instead a reliance on a more nuanced Hispanic identification may be necessary. As a direction for future analysis, such a distinction may show support for the Latino Paradox as presented by Sampson & Bean (2006) that the measures in this analysis failed to demonstrate.

Although the levels of segregation among the Hispanic population are less than those among African Americans, the results of this study point to a similar outcome as the literature on African Americans, simply that when segregated from the majority group of the population potential lethal victimization increases among the minority group. The findings of this study support some previous work regarding segregation and violent crime, while also demonstrating that the causal macro-social factors that lead to Hispanic homicide may differ from other racial/ethnic groups (Feldmeyer, 2010; Martinez, 1996). For this reason, explanations of violent crime that are applied to African Americans may not be serviceable for Hispanics. With a rapidly growing Hispanic population, understanding these causes is paramount to develop effective crime control policies and community-based programs to address violent crime.

Overall, the major limitation of this analysis is one that is all too often present among the research concerning Hispanics and that is the lack of distinction between the various Hispanic ethnicities. Although the U.S. Census collects data on more than 20 different Hispanic groups, researchers are often likely to place them into a monolithic category, treating these groups as though they have a common ethnic history to draw from, which would equally influence their structural characteristics and chances of criminal victimization (Bean & Tienda, 1987). Research has clearly shown that among the largest Hispanic ethnicities (Mexicans, Puerto Ricans, and Cubans), there are vast differences in terms of their structural location in society, patterns of settlement, and socioeconomic status. Although this study did examine Hispanics as an entire population, one improvement over previous studies was the incorporation of the Hispanic IQV measure that allowed for an analysis of the impact of the dispersion of the various Hispanic groups across a given city. Notwithstanding future macro-level studies should incorporate an ethnic-specific examination of larger Hispanic ethnic groups.

In summation, these findings demonstrate that segregation, measured as either the index of dissimilarity or exposure, as well as other macro-social indicators of community disorganization impact Hispanics in a manner that is consistent not only with previous research on Hispanics but with a similar body of research on African Americans as well. This as well as other findings of this analysis support the presence of a macro-link between segregation and homicide among Hispanics. Beyond conforming findings of previous research this study also deepens the macro-social understanding of Hispanic homicide victimization through the addition of its Hispanic IQV measure that has in effect provided an internal measure of segregation among Hispanics within these communities. Although this analysis failed to demonstrate a significant association of this measure, future analysis that is more focused on specific Hispanic communities or patterns of immigration may show that such a measure is more predictive of homicide victimization.
Appendix

Correlation Matrix.

|    | X1 | X2 | X3 | X4 | X5 | X6 | X7 | X8 | X9 | X10 | X11 | X12 | X13 | X14 |
|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|
| X1 | 1  |    |    |    |    |    |    |    |    |     |     |     |     |     |
| X2 | -0.287*** | 1  |    |    |    |    |    |    |    |     |     |     |     |     |
| X3 |    | -0.441*** | 1  |    |    |    |    |    |    |     |     |     |     |     |
| X4 |    |    | -0.678** | 1  |    |    |    |    |    |     |     |     |     |     |
| X5 |    |    |    | -0.545*** | 1  |    |    |    |    |     |     |     |     |     |
| X6 |    |    |    |    | 0.335*** | 1  |    |    |    |     |     |     |     |     |
| X7 | 0.124 | -0.057 | -0.321** | 0.548*** | 0.505*** | 0.026 | 1  |    |    |     |     |     |     |     |
| X8 |    |    |    |    |    | -0.178** | -0.261** | 1  |    |     |     |     |     |     |
| X9 | 0.044 | -0.050 | -0.176** | 0.152* | 0.314*** | 0.221*** | -0.052 | -0.091 | 1  |     |     |     |     |     |
| X10 |    |    |    |    |    |    | 0.137* | 0.252*** | 0.208*** | -0.266*** | 0.343*** | 0.372*** |       |
| X11 |    |    |    |    |    |    | 0.133* | -0.168** | 0.224** | -0.139** | 0.181** | 0.058* | -0.214*** | 1  |
| X12 | 0.128* | 0.368** | -0.133* | -0.008 | 0.051 | 0.332** | -0.247** | 0.289** | 0.139* | 0.321** | 0.577** |       |     |     |
| X13 | -0.078 | -0.278*** | -0.057 | 0.064 | -0.043 | 0.249*** | 0.315*** | -0.213** | -0.139* | -0.183** | -0.385** | -0.279** |       |
| X14 | 0.081 | 0.415*** | -0.080 | -0.039 | -0.261*** | -0.075 | -0.179** | 0.333*** | -0.248*** | 0.080 | 0.253*** | 0.104 | -0.359*** | 1  |

Note. X1 = Hispanic Homicide; X2= Dissimilarity Index; X3= Exposure Index; X4= Percent Population Hispanic; X5= Hispanic IQV; X6= Population Density; X7= Southwest; X8= Average Hispanic Education; X9= Average Hispanic Male Age; X10= Gini Index; X11= Hispanic Male Unemployment; X12= Hispanic Female-Headed Households; X13= Median Hispanic Rent; X14= Disengaged Hispanic Males. IQV = Index of Qualitative Variation.

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Notes

1. As a sensitivity analysis, models were also created that used thresholds of 5,000 and 10,000 for the group under investigation. Findings of these analyses were consistent with the models reported in the forthcoming analysis.

2. To interpret a negative binomial coefficient, the following formula is used: \((\exp(\beta \times s)) - 1) \times 100\). By taking the exponent of the product of the coefficient and the standard deviation of the independent variable, subtracted from 1 and multiplied by 100, the output allows for an interpretation of a percent change in the dependent variable for a one unit change in the independent variable (see M. R. Lee & Bartkowski, 2004).

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Author Biography
Michael Bisciglia, PhD, is an Assistant Professor of Criminal Justice at Southeastern Louisiana University. His research interests focus on the interrelationship between minority segregation and lethal violence in metropolitan areas.