

The Risk of Psychological Distress among Unemployed and Underemployed Mexican and Colombian Immigrants in the US and in their Countries of Origin

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This is the accepted manuscript of an article published in Latino Studies. The final authenticated version is available at: <https://doi.org/10.1057/s41276-021-00315-6> or <https://rdcu.be/cj8J9>. Accepted: 26 Jan 2021. First published online: 06 May 2021. Published in Vol. 19(2), pp. 226–252.

Abstract

We compare unemployed and underemployed Mexican and Colombian immigrants in the US with people in the countries of origin in similar conditions, to understand better differences in psychological distress, thereby deviating from the literature on the Hispanic Paradox. We designed and conducted a survey that enabled to capture aspects not broadly available in general surveys. Mexican immigrants report less distress than respondents in Mexico City, differences that disappear when controlling for differences in socioeconomic situation, financial tensions, and labor satisfaction. Colombians, generally in more favorable conditions than Mexican immigrants, report more distress than their counterparts in Colombia. Subjective factors such as the intentions of migration and especially the perceptions regarding mental health, but not the social networks, appear relevant for the reported distress. We conclude that heterogeneities between Colombians and Mexicans – immigrants and in the countries of origin – regarding objective and subjective characteristics must be addressed in greater depth.

Keywords: Immigration, Psychological Distress, Unemployment, Underemployment, Mexico, Colombia.

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The approach and set-up of the analysis

The aim of this article is to analyze the differences in Non Specific Psychological Distress reported by unemployed and underemployed Mexican and Colombian immigrants in the US, while, moreover, comparing them with unemployed and underemployed non-migrants in the sending countries. The comparisons allow us to explore the relationship between migration and Non Specific Psychological Distress, while also capturing the heterogeneity between Hispanics of different origins. Our analysis contributes to the literature because we have developed a small but detailed survey that permits us to address qualitative values that are not broadly available in general surveys, enabling us to study the association between unemployment, migration, and distress in a specific population that is particularly prone to observe distress while simultaneously analyzing the roles of (objective) living circumstances and (subjective) perceptions and opinions.

In particular, we intend to understand better which objective and subjective characteristics contribute to the differences in psychological distress between various groups of Latin-American immigrants and their counterparts in a comparably precarious labor situation in the sending countries. It is known that unemployed Hispanic immigrants have a higher tendency to develop severe mental illnesses, compared to employed immigrants (Thapa and Hauff 2005; Caicedo and van Gameren 2016). For our research, however, we consider that also underemployed people who want or need to work more hours should be treated as being in a precarious employment situation that perhaps is not very different from that of the unemployed (van der Noordt et al. 2014; Kim and von dem Knesebeck 2015), and that therefore they are also susceptible to develop problems with mental health due to an unstable labor situation. The comparison with counterparts in the sending countries in similar employment situations, moreover, will allow to shed more light on the role that immigrant status may have, understanding that migration is not randomly assigned but is a decision taken by migrants themselves that could be an additional determinant of health in general and psychological distress in particular, or an explanatory factor for differences therein (Castañeda et al. 2015).

Our starting point is the hypothesis that differences in the observed risks to develop psychological distress are incompletely explained by sociodemographic and objective economic factors. We hypothesize that also (subjective) work-related factors such as concerns about the financial future and satisfaction with the job are important determinants. Moreover, we expect to

find that personal and cultural factors such as aspirations for life and work as well as opinions and perceptions about mental health are determinants of the risk to develop and to report psychological distress. Finally, we expect to find that factors related to the immigrant status mitigate the development and reporting of psychological distress.

In order to advance the understanding of the relation between a precarious employment status, immigration, and psychological distress, we developed and carried out a survey among members of the respective communities, with detailed questionnaires to investigate the role of objective and subjective factors that are not often asked for in nationally representative surveys. In doing so, instead of adding to the literature on the Hispanic paradox, we contribute on two aspects that often remain underexposed – the heterogeneity between Hispanics immigrants in the US, and a comparison with the conditions in the sending countries.

The article is organized as follows. The next section provides a brief background on the relations between psychological distress, employment status, and migration found in the literature, followed by a review of theoretical aspects regarding migration and social determinants of health that may contribute to the explanation of differences between the groups included in the analysis. The next two sections focus on methodological choices, starting with the research population, where we also provide information on the historical migration patterns of the two countries that are compared. The subsequent section presents the survey that was conducted, including the measurement of psychological distress and of the other objective and subjective characteristics that were identified as potential factors to explain differences. The results section presents the findings obtained with the information gathered by the survey. Being aware of the limitations of our research, we address them in a short section. The concluding section derives three fundamental aspects from the research that should be taken into consideration when designing policies that intend to help to improve mental health standards among Latin-American immigrants.

The literature on unemployment, migration, and health

Since the initial publication of *Marienthal. The Sociography of an Unemployed Community* (Jahoda et al. [1933] 1971), many studies have analyzed the negative effect of unemployment on mental health (Linn et al. 1985; Björklund 1985; Ezzy 1993; Jin et al. 1995; Murphy and Athanasou 1999; Mossakowski 2009; Tefft 2011, to mention a few). According to the

International Labour Organization (2000), the presence of mental illnesses among workers can have different causes, but changes in the labor market that translate, in broad terms, as greater labor insecurity, unemployment and defenselessness, exacerbate the individuals' vulnerability and constitute a fundamental element in the development of affective disorders (Houssemand and Meyers 2011; Mandal et al. 2011). Generally, immigrants are exposed to less favorable labor market circumstances, and therefore might be expected to be disposed to develop psychological distress.

There is abundant literature that corroborates that in spite of the more precarious socioeconomic conditions, Latin American immigrants are healthier than the native population and do not display the elevated levels of morbidity and mortality patterns that would be expected – a phenomenon coined as the “Hispanic Paradox” (Markides and Coreil 1986; Acevedo-García and Bates 2008). The Hispanic Paradox has been observed for child and adult mortality, life expectancy, as well as for various specific health outcomes including cancers and cardiovascular diseases (Martinez et al. 2015; Velasco-Mondragon et al. 2016). The effect is found primarily among recent immigrants while reducing with time, especially in the second and later generations (Martinez et al. 2015), which may be related to the process of acculturation (Horevitz and Organista 2013). Comparisons of migrants with people in the country of origin, however, are scarce.

Relevant for our analysis is that the apparent paradox has also been reported for mental health problems (Karno and Edgerton 1969; Rehkopf et al. 2008; Potochnick and Perreira 2011; Caicedo and van Gameren 2016), but that on the other hand studies with psychiatric, psychological and sociological perspectives have articulated the negative effect of migration on people's mental health, particularly when they are socially and financially vulnerable (Vega et al. 1987; Vega and Rumbaut 1991; Hovey and Magaña 2000; Ku and Waidmann 2003; Guarnaccia et al. 2005; Alegría et al. 2008). The results have allowed to establish that aspects such as immigration status, immigration experiences, the diverse processes of adaptation to the receiving society, the attitudes of the receiving society, the level of ethnic concentration, the goals and expectations immigrants define from the beginning of their immigration career (Bhugra and Jones 2001), the social and demographic profile of the immigrants, the extent of their stay in the receiving country, and low income and unemployment, among others, are all factors that have an impact on immigrants' mental health (Vega et al. 1987; Kennedy and McDonald 2006). On the

other hand, it has been noted that factors that help to protect against mental health problems, such as close family ties and support, are common among Latin Americans (Mendelson et al. 2008), while furthermore it has been suggested that mainly the healthier and more resilient decide to migrate (Kennedy et al. 2015; Rubalcava et al. 2008; Riosmena et al. 2017).

This brief revision of the literature suggests that the question regarding the relation between immigration and mental health has features that deserve more research. For instance, Jasso et al. (2004) point out that, in order to generate a more complete understanding of the differences in immigrant health, comparisons must be made with similar people in the countries of origin. Expanding the scope and diverging from the Hispanic Paradox literature by bringing another relevant comparison into the picture may generate additional insights. Evidence on this aspect is limited, but for example Breslau et al (2011) found that Mexicans who emigrated to the United States have greater risks of developing mental illnesses than their counterparts in the country of origin.

Theoretical perspectives

The review of the literature has made clear that the debate about the relation between migration and health in general and mental health in particular is ongoing. On the one hand it could be argued that immigrants have a relative advantage in mental health due to a selective migration of people in better socioeconomic and health conditions, while on the other hand it could be argued that the implications of migration may distort mental health. Moreover, the literature suggests that a broad scope of social, cultural, and personal factors may be behind the observed differences.

Healthy immigrant effect

Selective migration is related to the fact that people who decide to migrate from a country are not randomly selected, and thus do not constitute a representative sample of the population as a whole. The migration selectivity hypothesis suggests, in particular, that the highest educated, most productive, and healthiest people decide to emigrate in search of better opportunities abroad. Therefore, immigrants may show a health advantage in comparison with the native US population even despite the often less favorable economic circumstances that immigrants witness (Martinez et al. 2015). At the same time, the outflow of healthier people, leaving behind the less

healthy, directly implies that migrants will compare favorably, health-wise, with the people who do not emigrate. Note that the same outcomes will result if, instead of (or in addition to) the positive migration selection, migrants who get sick are more likely to return to the country of origin to seek medical or other help. Especially in the case of migrants with limited access to health care services in the US this phenomenon may be at hand.

Among the factors that explain this selection are the scarcity of economic resources, the geographical proximity between countries of emigration and immigration – which is an important difference for the two countries that we compare –, trade agreements, and migration policies. Feliciano (2005) points out that migrants self-select themselves according to characteristics such as schooling, occupational profile, sex, and age; therefore, their demographic and socioeconomic characteristics generally tend to be different from the population of the country of origin (Ichou and Wallace 2019). In the case of Latin American and Caribbean immigration in the United States, it has been found that immigrants have higher educational and occupational profiles than the population in their countries of origin (Pellegrino and Martínez-Pizarro 2001).

As shown in the previous section, there are no conclusive results, especially not with respect to mental health. On the one hand, there is evidence of the positive relationship between migration and health hypothesized by the selective migration theory, but on the other hand negative relationships have been documented (Findley 1988; Breslau et al. 2011; Kennedy et al. 2015; Constant et al. 2018).

Social determinants of health

Migrants' health is not only mitigated by the selectivity of migration, but also by the social and cultural determinants of health – both before migration as well as in the host country. In particular, social factors may not only explain selective migration, as addressed in the preceding paragraphs, but may also have a direct effect on (mental) health (Velasco-Mondragon et al. 2016). The World Health Organization (WHO) defines the social determinants of health as “the conditions in which people are born, grow, live, work and age”, circumstances that are the result of “the distribution of money, power and resources at global, national and local levels”, which in turn depend on the policies adopted (WHO 2020). The social determinants of health approach makes it possible to see how social, economic and political mechanisms give rise to a set of

socioeconomic positions that stratify populations according to income, education, occupation, gender, race, ethnicity and other factors that in turn determine the health of individuals (WHO 2010). It has been found to explain most of the health inequities within and between countries (WHO 2020).

Castañeda et al. (2015) point out that not only socioeconomic circumstances but also the migration decision itself can be considered as a social determinant of health, as it constitutes an experience that directly affects the health and well-being of individuals, in many cases provoked or aggravated by a scarcity of economic resources and unemployment. Migration to a large extent places many individuals in vulnerable conditions, limiting their possibilities of access to quality jobs, education, housing and, above all, hinders the full exercise of rights, particularly among immigrants who are in conditions of irregularity. Even when positive selection is at hand, the hardships related to migration may have negative impacts on health and turn an initially beneficial health comparison into a health disadvantage. In particular for mental health this may be at hand, as the hardships may result in disappointments that translate into increased levels of psychological distress. Treating immigration as a social determinant of health poses challenges to conventional knowledge and practices because it requires going beyond the control of individualism and behaviorism in public health and, instead, requires addressing a broader sphere of factors and structures that affect health (Castañeda et al. 2015, 386).

The assessment that individuals make of their mental health is built on the knowledge, beliefs and meanings that prevail in society around mental illness. These vary from culture to culture. In societies where mental illnesses contain negative connotations or where the definition of symptoms is infused with prejudices or mythical ideas, diagnosing, preventing, and treating the disease could become complex (Ayestaran and Paez 1986).

Research population

The theoretical developments depicted by the selectivity of migration and the social determinants of health, suggest that it is relevant to compare immigrants with non-migrants in their home country. Therefore, instead of adding to the abundant literature on the Hispanic Health Paradox, our purpose is to better understand the differences with respect to the presence of psychological distress between Hispanics of various origins in precarious labor situations, as well as the role that being an immigrant may play. In this section we briefly address the selection of the research

population – unemployed and underemployed persons from and in Mexico and Colombia. The set-up of the survey including the measures used for psychological distress and its determinants are presented in the subsequent section.

Unemployed and underemployed adults

For our analysis we targeted unemployed and underemployed adults between 18 and 65 years old. We selected adults because the study addresses labor market questions, and although people become part of the labor force at 16 in the US, and at 14 and 12 in Mexico and Colombia respectively, it was decided to exclude people under 18 years old due to the contents of the questionnaire.¹

An unemployed person was considered to be someone who had not worked in the week previous to responding the survey, had been looking for a job in the month before the survey, and was available to start work as soon as they would be called to do so. In the case of the underemployed, they were required to have done paid work for no more than 34 hours during the reference week, and also to be looking for more labor hours and available to start to work more as soon as they were called to do so. These groups were selected given their high degree of vulnerability and the negative relation that unemployment and underemployment bear with mental health (Dooley 2003). Having one reference week implied that, for example, (vulnerable) seasonal workers were eligible to participate, unless the reference week was exactly during their high-season. An interesting group that is not included in our analysis are people who were working full-time but not pleased with their job, wage, or labor conditions. We briefly discuss the various methodological choices in the following subsections.

Countries of origin and cities of residence

We compare the risk of psychological distress of unemployed and underemployed Latin-American immigrants in the US from two countries, Mexico and Colombia. These two countries were selected because of the differences in migratory history, locations of concentration, and economic situation. Although often treated jointly as Hispanics, the underlying heterogeneity

¹ The application of the survey obtained IRB approval from DePaul University and San Diego State University. Interviewing younger people and asking detailed questions about migration status could have complicated the IRB approval.

may lead to differences in levels of reported and experienced mental health problems (Alegría et al. 2008). Caicedo and van Gameren (2016) have shown that the risk of developing a severe mental disorder such as anxiety or depression is higher among the unemployed, and that, compared to other Hispanic immigrants and the US-born population, Mexican immigrants exhibit the lowest prevalence and probability of developing these disorders.

We included the Mexican immigrants due to their numeric relevance – Mexicans constitute the most populous group of immigrants in the US – and its long tradition of migration to the US. Various factors have favored their presence for over a century: geographic proximity, the Mexican Revolution, the recruitment of workers at the end of the 19th century to work in the construction of railroads, Chicago's incipient industry (Verduzco 1997), the agricultural sector via the Bracero Program between 1942-1964, and later the reforms to the immigration laws in 1965, the economic crises of 1982 and 1995, the Immigration Reform and Control Act of 1986; and the economic needs and the desire of many to achieve better life conditions (Caicedo 2010).

Despite this long history, Mexicans represent one of the majorly disadvantaged Latin American immigrant groups in the US labor market. Initially, most of the Mexicans in the US came from rural areas and were predominantly male and single with low schooling levels, and usually inserted in temporary jobs (Verduzco 1997). California and Texas were the main settlement areas, followed by Illinois (Chicago) and, later, the Northeast of the country (Verduzco 1997). Nowadays, Mexican migration to the US is still ongoing, with some changes in the destinations and the composition of the flows. These are immigrants who tend to remain in the US, with a growing participation of women and indigenous people, and with a wide diversification of the points of origin including an important participation of people from urban areas. Currently, Mexicans have the lowest educational and occupational profiles among all Latin American immigrants, with the lowest average income and the highest poverty rate (Caicedo 2010).

Colombians were incorporated because they are the fastest-growing group of South American immigrants in the last five decades in the US and because, generally speaking, they have better educational and occupational profiles and a better socioeconomic situation in comparison with the Mexican immigrants (Caicedo 2010). The violence that Colombia has gone through since the start of its civil war, a conflict that has taken different shades throughout the years, is one of the factors that contributed to the movement of people from the countryside to

the cities and to other countries. Other factors are the high levels of unemployment and the deterioration of working conditions. This group of immigrants is mainly found in Miami and New York.

Survey design

In order to answer our research questions we developed a survey (*Unemployment and Mental Health in Latin American Immigrants in the US and in the Sending Countries (DSM) 2015*) that was conducted during April, September and November of 2015 at the Mexican consulates in Chicago and New York and the Colombian consulate in New York, as well as at the employment offices of the 16 boroughs of Mexico City and the National Learning Service (SENA) in Cali (Colombia), targeting unemployed and underemployed people – in the consulates, immigrants born in the country of origin – between 18 and 65 years old.

The specificity of the target population made it impossible to apply a probability sampling framework, and a non-probabilistic accidental (convenience) sampling strategy was used instead. This kind of sampling is common in both qualitative and quantitative research, especially when the aim is to get to know deep information regarding the values, attitudes and perceptions of a particular group of individuals. The sampling was combined with voluntary choice or self-selection to participate, a method that is frequently used in social and medical sciences.

In the consulates, the questionnaire was responded by immigrants that went there to receive information or carry out an administrative procedure.² Once it was verified through a preliminary filter form that the individuals met all the criteria to participate in the survey and expressed their willingness to respond the questionnaire, an informed consent form was read to them indicating the project's objective and the way in which their information would be used. The consent form made clear that the person could end the procedure at any time without any consequences. The preliminary filter also determined whether the questionnaire for unemployed or underemployed respondents would be employed, with the main difference that for the underemployed, labor-related questions referred to the current job while for unemployed the last

² For example, Mexicans who visit the consulate generally do that to obtain a Consular ID Card (a document used as identification by those whose status in the US is irregular). There were no financial or other incentives to participate in the questionnaire; at all research locations, filling the waiting time was the only incentive.

job was of interest. The questionnaire had an average duration of 25 minutes. The strategy in the employment offices was similar.

The survey was conducted by a field team with coordinators who were in charge of paving the way for the conduction of the survey, and pollsters – all of them IRB-certified – who applied the filter and the questionnaire by reading out the questions and writing down the responses. Each day, the staff responsible for the project handed a fixed number of questionnaires to the supervisors who, in turn, oversaw handing them to the pollsters. Upon completion of each questionnaire, pollsters had to verify that the information was complete; in case it was not, they would obtain the missing information from the respondent.

Altogether, questionnaires were completed with 1000 unemployed and underemployed respondents. Due to budgetary and logistical limitations it was not possible to carry out a quota sampling, but we were able to balance participation by gender (Table 1). Table 1 shows the number of interviewed people by origin and place of residence, and their distribution according to labor status. More underemployed than unemployed immigrants participated, related to the fact that finding better employment opportunities was an important reason to migrate. The employment offices in Mexico City and Cali, on the other hand, may attract more unemployed visitors in search of a job or training opportunities.

Table 1 Surveyed population by country of origin, place of residence, gender, and labor status

	Total number of questionnaires	Male (%)	Female (%)	total (%)	Unemployed (%)	Underemployed (%)	total (%)
Mexicans in Chicago	223	39.5	60.5	100	36.3	63.7	100
Mexicans in New York	178	62.4	37.6	100	23.0	77.0	100
Colombians in New York	75	24.0	76.0	100	30.7	69.3	100
Mexicans in Mexico City	277	50.2	49.8	100	83.8	16.2	100
Colombians in Cali (Colombia)	247	47.8	52.2	100	78.1	21.9	100
total	1000	47.4	52.6	100	57.0	43.0	100

Source: DSM-2015.

Measurement of Non-Specific Psychological Distress

The concept of psychological distress describes non-pathological clinical manifestations rooted in an individual's character, and – although not a diagnosis but a description of alterations – indicates that psychological attention may be required (Espíndola et al. 2006). We use the Spanish translation of the Kessler Psychological Distress scale, K10 (Kessler and Mroczek 1994)

as an approximation for the experiences with symptoms of depression and anxiety, items that typically form the focus of scales intended to measure non-specific psychological distress (NSPD) (Kessler et al. 2002; Kessler et al. 2003).³ The K10 scale consists of the following questions: In the last 30 days, how frequently did you feel: tired out for no good reason? Nervous? So nervous that nothing could calm you down? Hopeless? Restless or fidgety? So restless that you could not sit still? Depressed? So depressed that nothing could cheer you up? That everything was an effort? Worthless?, each with possible answers: (1) None of the time, (2) A little of the time, (3) Some of the time, (4) Most of the time, and (5) All of the time. Summing the scores on the ten questions gives a scale that moves between the values of 10 and 50. A result between 10 and 19 indicates there is no NSPD, and a value between 20 and 24 indicates a mild level of NSPD. Scores 25-29 correspond to a moderate level, whereas values between 30 and 50 indicate severe NSPD and a high risk of developing depression or anxiety. The scale does not identify a specific diagnosis but can be considered a good predictor of the need for treatment in people with common disorders (Andrews and Slade 2001). The K10 scale has been validated for different populations, including Latin Americans (Chatterji et al. 2007; Vargas et al. 2011; Andrews and Slade 2001). In our empirical analysis we obtained a Cronbach's alpha of 0.89, which confirms the internal consistency of the scale items and the reliability of the scale to measure the risks of NSPD, also in our respondents.

Other survey questions: living circumstances, perceptions, and opinions

In addition to the questions about the psychological distress, the survey contained questions based on the factors identified in the literature as potentially relevant, and on the hypotheses presented in the Introduction.⁴ This selection includes the standard demographic information – age, gender, marital status – as well as socioeconomic information – the level of education, the ability to speak English,⁵ and the respondent's number of financial dependents.

³ Available via https://www.hcp.med.harvard.edu/ncs/k6_scales.php. Translations in many languages have been used in the WHO's World Mental Health Initiative. Several other translations and validations of the Kessler-10 scale in Spanish are used in different countries; see for example, Brenlla and Aranguren (2010) and Vargas et al. (2011).

⁴ Some questions included in the questionnaire were inspired by the ENOE-INEGI, the World Values Survey, and the instruments of the PHQ-9 and GAD (Kroenke et al. 2001; Spitzer et al. 2006).

⁵ The question has been asked only in the questionnaires in the US. In the analysis, our assumption that respondents in the home country do not speak English affects only group indicators but none of the other estimates.

Various indicators of the respondents' labor conditions were included in the survey. The first was the respondent's (weekly) total income, from labor and other sources. Other survey questions were used to construct, by means of a multiple correspondence analysis, two indices of the conditions in the respondents' current or last job. The first index, an indicator of the attractiveness of the job's labor hours, took into consideration the following variables: number of hours worked per day in the main job (less than, equal to, or more than 8 hours), timing of the labor hours (by day, by night, or combinations of day and night shifts), number of days worked per week (less than, equal to, or more than 5 days) and whether the job is done on weekdays, weekends, or both. The second index is a measure of the fringe benefits the job offers, in particular: health insurance paid through the employer, thirteenth salary, bonuses or premiums, paid vacations, and an indicator on whether the respondent did not receive any of a long list of employee benefits. Both indices are constructed such that higher values indicate a preferable situation (fewer or 'nicer' hours, more fringe benefits).

Perceptions about the economic situation and labor conditions were captured by three indices. The first of them, measuring financial tensions, was based on the answers to questions regarding the frequency with which the respondent worried about lack of money and whether the salary received at the main job was enough to make a living (in the case of the unemployed, the reference was their last main job). The second, asked only from migrants, combines three questions regarding the (labor) opportunities in the US, where a higher score indicates that despite the hardships, living and (searching for) work in the US is preferable over the country of origin. For both indices, a higher value indicates a preferred situation – fewer financial worries, more satisfaction with having migrated. The third index in this group refers to the respondent's commitment to their job in relation to the satisfaction derived from it. It combines two variables related to the satisfaction with the use of time at work and the off-labor time, and the responses to the following three statements: "Most of the time you keep on working on a task until you are satisfied with the result"; "You feel disappointed when you can't reach your personal goals" and "You like your job so much you tend to stay till late to finish it." A higher value of this index indicates the respondent has a stronger job commitment and satisfaction, and is expected to reduce psychological distress.

Also we consider the respondents' opinions on the importance of work for life and their aspirations regarding favorable job characteristics. An index could be constructed based on six

statements; we included the degree of agreement with the statement “Work is what makes it worth living” together with information on the importance given to a job that is “steady and with a good wage or salary”, “with a good schedule”, “that allows you to develop your creativity”, “with abundant vacations and holidays”, and to “working with people you like”, where a higher value of the index indicates that a job with better characteristics is important for the respondent.

Moreover, we include three indices that assess the individuals’ perceptions regarding various indicators of the K10 scale to measure psychological distress. The first is based on the answers to the statements: “Complaining to others about our problems does not help solving them”; “If a person acts correctly, he/she doesn’t have a reason to be scared or nervous”; “Strong people don’t get depressed”; “Problems and worries are an intimate matter; only your family should know about them”, and “People who complain about life are ungrateful.” A higher value of the index indicates that the respondent agrees more with these statements and is probably less willing to admit they suffer mental health problems. The second index is based on three questions regarding the respondent’s difficulty to recognize problems, growing up in a family that was not used to talk about problems, and their habit to invent something to forget about problems.⁶ A higher score on this index indicates avoidance of thinking about problems. A third index specifically addressed migrants and compares their situation in the US with the home country; it is based on the level of agreement with the statements “There’s no reason to complain about hard work. We came here to work” and “Although my financial situation in the US is not as I had expected, in my home country it was worse”. A higher value of the index indicates more resistance to see reasons to complain about having migrated to the US.

Ultimately, we include two indices regarding the social networks of the migrants in the US. One is an indicator of the network intensity (participating in and receiving support from migrant organizations or volunteers, giving support to relatives or friends), while the second combines four questions regarding the importance the respondent attaches to those networks (maintain traditions, better understanding, missing the country, but also restricting contact with others). Larger values of the indices indicate stronger networks and more importance being given to them, respectively, and could be expected to reduce psychological distress.

⁶ These questions were only asked in the questionnaires in the US.

The relevance of the analyzed determinants of distress

Before presenting the results, we want to verify that our (non-probabilistic) sample of respondents comprises a reasonable reflection of the population at hand. Therefore, we compare our survey with the American Community Survey (ACS) of 2014 (United States Census Bureau 2015). The average age of our respondents is very similar to the average age of immigrants in the ACS-2014. Mexicans in New York, whose average age is 37 years in our data and 36 in the ACS-2014 (Table 2), are the youngest immigrants, while the oldest group is formed by the Colombian immigrants, with an average age of 45 years (44 in the ACS-2014). We note that with an average of 31 years on our sample in Cali is rather young, related to a likely overrepresentation of youngsters who access the SENA offices for occupational training. The groups with higher marriage/cohabiting rates are the Mexicans in Chicago and New York (68.5 and 64.6%, respectively). In the ACS-2014, these groups count with marriage rates of 60.5 and 42.3%, respectively. Colombian immigrants in New York report similar marriage rates in both surveys, while the marriage rates among respondents in the sending countries are slightly lower than among the immigrants (Table 2). Since the survey was conducted at the consulates, more recently arrived individuals show a higher presence in our survey than in the ACS (Table 2). Except for the Mexicans in Chicago, over 55% of the immigrants in our sample arrived in the US between 2001 and 2014.

Table 2 Representativeness of the surveyed population

	Average age		Married or cohabiting (%)		Year of arrival between 2001 and 2014 (%)	
	DSM	ACS	DSM	ACS	DSM	ACS
Mexicans in Chicago	39	40	68.5	60.5	49.1	21.5
Mexicans in New York	37	36	64.6	42.3	61.9	44.4
Colombians in New York	45	44	49.3	53.3	55.4	32.1
Mexicans in Mexico City	35	-	42.0			
Colombians in Cali (Colombia)	31	-	37.7			

Source: DSM-2015 and ACS-2014

We conclude that, although due to the sampling strategy we cannot talk about a representative sample that would permit the generalizability of our findings, our data reflect the tendency observed in the ACS-2014 for unemployed immigrants from Mexico and Colombia in

the respective metropolitan areas. Moreover, the samples in the country of origin are comparable with the immigrants. In the quantitative analysis, we correct for a variety of other differences between respondents.

Factors behind the differences in psychological distress

Table 3 presents the distributions of the scores of our respondents on the K10 scale by nationality and place of residence. Most of the Mexican immigrants in our samples in Chicago and New York are located at the lowest levels of the scale, indicating low risks of mental health problems. For Colombians in New York we find a relatively high number of respondents with a severe NSPD, at the expense of respondents with moderate NSPD. For the Mexicans in Mexico City the scores are spread more evenly across the whole scale than in the other groups; they thus have a relatively larger number of respondents with an elevated risk to develop a severe mental disorder such as depression or anxiety. At a first glance, these results suggest that Mexican immigrants are more prone to develop NSPD than job seekers in Mexico; while for Colombians – a country with a migration history that differs from Mexico – the opposite is found. Different migration patterns are also reflected in the differences between Mexicans and Colombians in New York, the former with the lowest NSPD rates.

Table 3 Kessler 10 Scale Distributions in the surveyed population

	No NSPD (%)	Mild NSPD (%)	Moderate NSPD (%)	Severe NSPD (%)	total (%)
Mexicans in Chicago	65.0	17.0	11.2	6.7	100
Mexicans in New York	63.5	23.6	6.7	6.2	100
Colombians in New York	66.7	17.3	6.7	9.3	100
Mexicans in Mexico City	51.3	21.7	13.4	13.7	100
Colombians in Cali (Colombia)	71.8	18.4	4.9	4.9	100
total	62.7	19.8	9.1	8.3	100

Source: DSM-2015

Note: No NSPD: value on the Kessler scale between 10 and 19; Mild NSPD: value between 20 and 24; Moderate NSPD: value between 25 and 29; Severe NSPD: value between 30 and 50.

Table 4 shows the results of the model explaining the reported scores on the K10 scale in our sample while controlling for other factors, what permits to single out the role of migration and employment status, and thereby allows us to review the hypotheses presented in the

Introduction. We successively expand from a model with only demographic and socioeconomic variables (column 1) to models including the objective information about the economic and labor situation (column 2), the subjective satisfaction with the job (column 3) and more general subjective information regarding the attitudes towards work and the perceptions about mental health issues (column 4), while finally information about social networks gets included (column 5).⁷ It is important to emphasize that the analysis refers to a non-probabilistic sample and that we should be careful with extrapolation outside the sample, even though we have established that the sample appears to mimic the population.

In column 1, the smallest model, we note that our results confirm what has been systematically observed in the mental health literature: women in our sample have a higher (although not significantly different) propensity to develop depression or anxiety. Even though there are biological explanations to these differences (Rosenfield 1980), and other explanations show that the risk of developing depression depends for between 40 and 50% on genetics (Heim et al. 2004), this should not diminish the importance of the suggestions proposed by sociological theory, which stresses how the individual's role and status in society help determine their mental health (Rosenfield and Mouzon 2013; Tausig et al. 2003; Ezzy 1993). As shown in other studies, being married or cohabiting appears to be a protective factor of mental health problems (Vega and Sribney 2008), while people who used to live with a partner in the past have greater possibilities of developing anxiety or depression than those who are married or cohabiting at the moment of the survey. Age did not turn out to be statistically significant. We find a positive relation between the K10 scale and the number of financial dependents: the higher the number of dependents, the higher the possibility of developing depression or anxiety. In line with numerous publications (Tausig et al. 2003), a higher educational level significantly reduces the possibility of developing either of these disorders. A respondent with (upper) secondary education has a strongly reduced possibility when compared with someone who did not study beyond elementary school. However, the effect is not found among respondents with (some) college education, perhaps because more advanced studies not only give more opportunities but also come with increased aspirations and expectations that may turn out difficult to achieve. Moreover, we find

⁷ Given that the distribution of scores on the Kessler scale is highly skewed, the assumption of a normal distribution required for an OLS analysis is not satisfied. We opted for a count data model assuming the underlying process follows a Negative Binomial distribution, interpreting the scores on the Kessler scale (relocated to the range 0-40) as a variable that 'counts' the level of NSPD. See Cameron and Trivedi (1998).

that a better comprehension of the English language contributes to the explanation of psychological distress; migrants who are more fluent in English report lower scores on the Kessler scale.

The status of underemployment, compared to being unemployed, reduces the likelihood that our respondents develop NSPD. That is, with only demographic controls and education (col. 1), a part-time job seems to protect against mental health problems. However, upon accounting for differences in the labor conditions and the satisfaction with work and life, and social network (col. 2, 3, 4, and 5), we see that the underemployed are not better off, in terms of psychological distress, than the unemployed; their job may imply slightly preferable conditions but they do not seem to be structurally better off. This confirms that employment by itself is not necessarily a protective factor of mental health, but suggests that the precariousness of the situation matters.

One of the most noteworthy results is the one referring to the differences by nationality and place of residence. We find that, controlling for demographic and economic characteristics (col. 1 and 2), there are no significant differences in terms of the K10 scale among Mexicans established in Chicago and those residing in New York, despite the differences in the profiles of both groups – Mexican immigration in New York is of more recent arrival, with a greater presence of young and indigenous individuals (Durand 2007). By contrast, large differences are found between Mexican immigrants and those in Mexico City, where the latter have a much higher chance of developing psychological distress. This suggests that, at least in the Mexican case, migration seems to influence K10 scores; Mexican immigrants appear less likely to report psychological distress (col. 1). However, these differences become insignificant when we account for differences in income, the satisfaction and commitment with time use on and off the job, the aspirations for work and perceptions regarding mental health, and the social network (col. 2, 3, 4, and 5).

For Colombians we find the opposite; Colombian immigrants in New York report more distress than Colombians in Cali, and (though weakly) more than the Mexican immigrants – when controlling for demographic and economic characteristics (col. 1). Controlling for the more subjective characteristics (col. 3, 4, and 5), the difference between Colombian immigrants and their counterparts in Colombia is maintained and even strengthened – the latter with a reduced

probability of developing an NSPD than the immigrants – while differences between Mexican and Colombian immigrants turn statistically insignificant.

We have already noted that in the second column, extending the model with the objective economic and labor conditions, current labor status and part of the differences between the groups lose significance; the differences previously assigned to these factors apparently being related to the observed differences in (current or previous) economic situation. We find a U-shaped relation between the respondent's income and the K10 scale, implying that the highest levels of psychological distress are attained at both the lowest and the highest income levels, while those with a more modal income report less distress. The estimated coefficients, however, imply that the lowest scores on the Kessler scale are attained at a weekly income of about 1060 USD, which is far above the average income in our sample; hence for the major part of the sample, higher income reduces distress. Although a higher value on the indices of the labor conditions – indicating more attractive labor hours and better non-wage compensations – has a negative relation with the K10 scale (i.e. the worse the labor conditions, the worse the mental health), the estimates are not statistically significant. The individual income derived either from the job or other sources appears more important for the respondent's mental status than the non-financial labor conditions. These results are consistent with the central proposition of sociological theory, which locates the roots of the individuals' mental problems in structural inequalities such as gender, socioeconomic status and ethnic group (Tausig et al. 2003). We have verified that even among the unemployed and underemployed population, those whose socioeconomic situation is more precarious, are more prone to develop a mental illness.

The third column adds indicators regarding the (subjective) satisfaction with the current or last job to the model. We find that people in our sample with greater financial worries have a higher probability to develop NSPD – that is, a higher risk to develop (severe) psychological distress such as anxiety or depression, while those who are more satisfied with their time use on and off the job and show more willingness to work longer when necessary report lower scores on the K10 scale. In other words, high levels of satisfaction and commitment with the job and free time as well as the perception regarding the income derived from it, constitute a protective factor against the development of a (severe) mental disorder. In contrast, being of the opinion that (searching for) work or working in the US is preferable over the country of origin on itself does not affect the distress reported by the migrants in the sample.

In the fourth column we add the values and perceptions regarding work and mental health. Agreement with the statement that work makes it worth living and having high job aspirations (captured by the first index) increases the reported psychological distress, and we can conclude that subjective preferences regarding work have an additional contribution, on top of the more objective job characteristics, on the likelihood to report NSPD. The results from the index measuring perceptions about the items of the K10 scale, however, show that those who agree more with the statements that mental health problems are a private issue and that strong people can surmount them without help from others, report lower scores on the K10 scale. On the other hand, the index that accounts for having grown up in an environment that avoided talking and thinking about mental issues, shows that those respondents are more likely to report higher levels of NSPD in our survey. Particularly for migrants, we find indications that agreement with the statements that they should not complain about their hardship in the US because the decision to migrate was taken consciously, are less prone to report distress. In other words, respondents who consider that they should be strong, not show weakness, and live with the decisions made, are less likely to report that they suffer mental health problems; however, the habit or tradition to push away those problems does not actually avoid the problems.

In the fifth and final columns we add information about the social environment of the migrants, and find that – after accounting for the other factors and facets discussed above – the size and role of the social network does not alter the psychological distress reported by our respondents.

Hence, we find that the initially observed differences between Mexican immigrants in the US and job seekers in Mexico are explained by differences in their labor conditions and attitudes, as well as by their perceptions about mental health. For Colombians that does not apply: differences between migrants and non-migrants are maintained when controlling for those factors, and thus other factors related to the migration decision must be at hand. Obviously, a crucial difference between migrants and the job seekers in the sending country is that the latter decided not to migrate; we have not been able to account for the precise reasons and intentions of the migration decision.

Table 4 Relation between Kessler K10 scores and individual characteristics ^a

	(1)	(2)	(3)	(4)	(5)
<i>control variables</i>					
Employment status: underemployed (<i>ref: unemployed</i>)	-0.11+ (0.07)	-0.04 (0.08)	-0.07 (0.08)	-0.07 (0.08)	-0.08 (0.08)
<i>Nationality / interview location (ref: Mexicans in Chicago)</i>					
Mexicans in New York	0.03 (0.10)	0.05 (0.10)	0.09 (0.09)	0.13 (0.10)	0.11 (0.10)
Colombians in New York	0.20+ (0.14)	0.15 (0.14)	0.01 (0.14)	0.06 (0.14)	0.08 (0.14)
Mexicans in Mexico City	0.22* (0.12)	0.04 (0.13)	-0.01 (0.13)	-0.05 (0.13)	-0.06 (0.13)
Colombians in Cali (Colombia)	-0.20+ (0.13)	-0.47*** (0.15)	-0.49*** (0.15)	-0.52*** (0.15)	-0.52*** (0.15)
Gender: female (<i>ref: male</i>)	0.08 (0.06)	0.00 (0.06)	-0.08 (0.06)	-0.10+ (0.06)	-0.10+ (0.06)
Age (divided by 10)	0.03 (0.18)	0.07 (0.18)	-0.07 (0.17)	-0.07 (0.17)	-0.06 (0.18)
Age (divided by 10) squared	-0.00 (0.02)	-0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)
<i>Marital status (ref: married/cohabiting)</i>					
Single (divorced, widowed)	0.24*** (0.09)	0.22** (0.09)	0.18** (0.09)	0.16* (0.09)	0.17* (0.09)
Single (never together)	0.04 (0.08)	0.07 (0.08)	0.05 (0.07)	0.04 (0.07)	0.04 (0.08)
No. of economic dependents	0.05** (0.02)	0.07*** (0.02)	0.04+ (0.02)	0.04+ (0.02)	0.04+ (0.02)
<i>Education (ref: up to elementary)</i>					
Junior high	-0.20* (0.11)	-0.19* (0.11)	-0.16+ (0.10)	-0.14 (0.10)	-0.14 (0.11)
High school	-0.22* (0.11)	-0.21* (0.11)	-0.22** (0.11)	-0.23** (0.11)	-0.22* (0.11)
Some college or more	-0.10 (0.13)	-0.06 (0.13)	-0.05 (0.13)	-0.05 (0.13)	-0.04 (0.13)
English proficiency (5-point scale from not able to very good)	-0.08** (0.04)	-0.09** (0.04)	-0.06+ (0.04)	-0.07* (0.04)	-0.07* (0.04)
Individual weekly income (100s of USD)		-0.13*** (0.04)	-0.11*** (0.03)	-0.12*** (0.03)	-0.13*** (0.04)
Individual weekly income (100s of USD) squared		0.01** (0.00)	0.01** (0.00)	0.01*** (0.00)	0.01*** (0.00)
index Labor conditions (labor hours) ^b		-0.03 (0.03)	-0.02 (0.03)	-0.02 (0.03)	-0.02 (0.03)
index Labor conditions (employee. benefits) ^b		-0.03 (0.04)	0.04 (0.03)	0.04 (0.03)	0.04 (0.03)
index Absence of Financial Stress (sufficient income)			-0.28*** (0.03)	-0.27*** (0.03)	-0.26*** (0.03)
index Satisfaction and commitment with the job			-0.09*** (0.03)	-0.09*** (0.03)	-0.10*** (0.03)
index Better opportunities in USA than in country of origin			0.03 (0.04)	0.03 (0.04)	0.03 (0.04)

index Aspirations for work and job characteristics				0.06**	0.05*
				(0.03)	(0.03)
index Perceptions: ‘don't complain be strong’				-0.07**	-0.08**
				(0.03)	(0.03)
index Perceptions: ‘avoid thinking about problems’				0.11**	0.11**
				(0.05)	(0.05)
index Perceptions: ‘resistance to complain about migration’				-0.14***	-0.14***
				(0.04)	(0.04)
index Social Network (more intense contacts)					0.01
					(0.05)
index Social Network (considered important)					0.05
					(0.05)
Constant	2.14***	2.34***	2.61***	2.67***	2.66***
	(0.38)	(0.39)	(0.38)	(0.38)	(0.38)
log(alpha) – dispersion parameter	-0.31***	-0.33***	-0.45***	-0.49***	-0.49***
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
No. of observations	979	960	948	920	903
Likelihood Ratio chi-square test	71.04	91.22	180.68	205.43	200.95
(degrees of freedom)	15	19	22	26	28
(p-value)	0.0000	0.0000	0.0000	0.0000	0.0000

Source: DSM-2015.

a Estimated coefficients of count data models assuming the Kessler scale (relocated to the range 0-40) has a Negative Binomial distribution, which accounts for the fact that the data are heavily skewed. See Cameron and Trivedi (1998) for the technical details of count data models.

b For underemployed, in the current main job; for unemployed in the last main job

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10, + p<0.15

Limitations and suggestions for further analysis

A broader set-up that would also include the native population or would permit comparison with migrants from other cultural backgrounds could further enrich the understanding of the phenomena at hand but is beyond the scope of this article. The specificity of the populations that we study implies that a probabilistic sampling is not easily achievable; ideally the questions of interest would be included in (existing) national surveys in the US and in the sending countries in such a way that direct comparison is possible. A limitation of our research is that, although we find differences between migrants and people in similarly precarious situations in the sending countries, we cannot establish what share of the difference is due to (positive) selective migration. For that, it would be necessary to interview migrants at different stages of the migration process. Another constraint is that our definitions of unemployment and underemployment, based on the number of hours worked in the week before the interview and the desire to work more, do not capture all workers in precarious labor situations such as those

with a low-paid full-time job. Due to the small sample sizes we do not attempt to perform a gender-specific analysis, or analysis for other specific populations. For example, we were not able to dig into the ethnic, racial, or indigenous aspect: it would be relevant to see if discrimination affects psychological distress of immigrants and people in the sending countries in the same or in different ways.

Conclusions: three fundamental aspects

We have analyzed factors behind the mental health status of unemployed and underemployed Mexican immigrants in Chicago and New York, comparing them with their counterparts in Mexico City, and Colombian immigrants in New York and Colombians in Cali. In order to do so, we developed a survey that enabled us to collect more profound information, particularly on subjective factors such as attitudes towards and perceptions about life and work, than is available from large-scale representative surveys. Despite being forced to apply non-probabilistic sampling methods, our approach made it possible us to contribute to aspects commonly overlooked in the Hispanic Health Paradox literature: the heterogeneity between Hispanics from different origins, and the comparison of immigrants with people in similar conditions in the sending countries.

When controlling for a limited number of demographic and economic conditions, we found large differences between (unemployed and underemployed) Mexicans in Chicago and New York and those in Mexico City; the latter being more likely to report symptoms that may lead to a severe mental disorder. The differences between immigrants and comparable non-migrated Mexicans vanished when we also considered differences in labor conditions, attitudes towards the importance of work, and perceptions regarding mental health. The results suggest that the lower levels of psychological distress reported by Mexican immigrants could be related to positive migration selection. In contrast, for Colombians, who are generally in a more favorable economic situation, the immigrants appear more prone to report distress than their counterparts in Colombia. As we pointed out before, our methodological approach does not allow us to establish whether in both cases the results are due to a positive or negative selection of migrants; nevertheless, our results are consistent with other research (Martinez et al. 2015).

Regarding the individual-specific characteristics, we found that a lower level of schooling, having a larger number of financial dependents, and a lower income increase the

chances to develop psychological distress. These results are consistent with the findings in psychiatric epidemiology and sociology that identify structural inequalities as one of the main causes of mental illness (Horwitz 2010; Thoits 2010; Dohrenwend 2000). Importantly, respondents who are more satisfied with their work and life, reflected by the absence of financial worries and by how they spend their time, are less likely to report on the psychological distress scale. On the other hand, respondents that give work a higher value in their life are more likely to develop psychological distress. Moreover, we found that respondents who think that people should not expose their weaknesses are less likely to report mental problems. Importantly, that applies for migrants: those who consider that they should not complain about the hardships encountered after migrating are indeed less likely to report distress. Somewhat counter to the expectations, the intensity of social networks and the importance given to them does not add to the explanation of psychological distress in our sample.

This research allows us to identify three fundamental aspects: first, unemployment, underemployment, and poor working conditions constitute a social determinant of the mental health of individuals, regardless of their migrant or non-migrant status. Second, the healthy migrant hypothesis is a plausible explanation of the differences in health between migrants and non-migrants, but it should be studied in more depth, since migrations of people who flee from extreme poverty or violence occur worldwide, that is, they are people in conditions of high socioeconomic vulnerability. Particularly interesting in our analysis is the finding that, upon controlling for other determinants of psychological distress, the role of migration seems to react differently according to the country of origin. These disparities, probably related to initial social and cultural differences, warrant more scrutiny.

Third, the results show that it must be acknowledged that the Hispanic population in the US is not a homogeneous group; differences in migratory patterns, history, integration and background imply that they should be analyzed and treated separately, especially in sensitive issues such as those related with mental health. Larger and probabilistic samples would help to achieve that goal, and moreover could, on the one hand, permit to obtain results that can be generalized outside the sampled respondents, while on the other hand it would enable for instance gender or age-specific comparisons or address the relevance of discrimination for mental health in both the US or the country of origin.

Acknowledgements: The project received financial support of a PIMSA grant 2013-2014 (UC Berkeley) and of the National Autonomous University of Mexico (UNAM), grants PAPIIT-IN301714 and PAPSA-2015. The project received certification from the Institutional Review Board (IRB) of DePaul University, City University of New York and San Diego State University. The authors acknowledge support from the Institute for Mexican Citizens Abroad (IME), the Mexican Consulates in Chicago and New York, the Colombian and Dominican Consulates in New York, the Coordination of Work Relations of the General Office for Employment, Training and Cooperational Development of Mexico City's Secretary of Employment, and of the National Learning Service (SENA) of the city of Cali. The authors thank the Erie House for their collaboration in the formation of focus groups in Chicago, and also all individuals who took part in the conducting of the survey, as well as everyone who agreed to respond the questionnaire and participated in the focus groups. We also thank Dr. Margarita Alegría for her valuable comments, and intern Luz Elena Anguiano and the entire team of professionals, academics and students who took part in the development of this project in all its stages, and especially Howard Rosing and Esther Quintero for the support received during several visits to Chicago. The questionnaires, consent forms, as well as the data are available upon request from the first author.

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