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The Risk of Psychological Distress among Unemployed and Underemployed Latin-American Immigrants in the US and in their Countries of Origin

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Abstract

We compare unemployed and underemployed immigrants from Mexico, Colombia, and the Dominican Republic in the US with people living under similarly precarious employment conditions in the countries of origin, in order to understand better differences in psychological distress. In doing so, we deviate from and add to the literature on the Hispanic Health Paradox, addressing heterogeneity between Hispanics and comparison with people in the sending country instead of the US-based population. We follow a mixed research strategy, performing and analyzing a survey, and by organizing focus groups, allowing for a profound analysis of the importance of both objective and subjective characteristics. We find that a more precarious socioeconomic situation, financial tensions, and a reduced labor satisfaction increase depression and anxiety levels. Mexican immigrants report fewer symptoms than those in Mexico City, but this difference disappears when controlling for differences in labor conditions and the importance respondent give to work. Colombian immigrants, generally in more favorable conditions than other immigrants, report more distress than their counterparts in Colombia. Subjective factors including the intentions of migration appear relevant for the reported distress. Importantly, we encounter ambiguity regarding the connotation respondents have with symptoms of depression and anxiety.

Keywords: Immigrants, Countries of origin, Unemployment, Underemployment, Psychological Distress, Depression, Anxiety, Qualitative research, Mexico, Colombia, Dominican Republic.

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Introduction [1]

Since the initial publication of *Marienthal. The Sociography of an Unemployed Community* (Jahoda, Lazarsfeld, and Zeisel, [1933] 1971), many studies have analyzed the negative effect of unemployment on mental health (Linn, Sandifer, and Stein, 1985; Björklund, 1985; Ezzy, 1993; Jin, Shah, and Svoboda, 1995; Murphy and Athanasou, 1999; Mossakowski, 2009; Tefft, 2011, to mention a few). According to the International Labour Organization (2000), the presence of mental diseases 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, Ayyagari, and Gallo, 2011). Generally, immigrants are exposed to less favorable labor market circumstances, and therefore might be expected to be disposed to develop psychological distress.

Nonetheless, there is an abundant literature that, in reviewing migrant health, corroborates that in spite of the more precarious socioeconomic conditions, Latin American immigrants are in better health 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 diseases, including for mental health problems (Karno and Edgerton, 1969; Rehkopf, Kubzansky, and Mandelson, 2008; Potochnick and Perreira, 2011; Caicedo and van

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Gameren, 2016). The effect is found primarily among recent immigrants while declining with time and especially in the second and later generations, a change that may be related with the process of acculturation (Horevitz and Organista, 2013).

This apparent paradox raises the question what is the relation between immigration and mental health. Studies with psychiatric, psychological and sociological perspectives have given account of the negative effect of migration on people's mental health, particularly when they are socially and financially vulnerable (Vega, Kolody, and Valle, 1987; Vega and Rumbaut, 1991; Hovey and Magaña, 2000; Ku and Waidmann, 2003; Guarnaccia, Martínez, and Acosta, 2005; Alegría *et al*., 2008; Aguilar-Gaxiola *et al*., 2011). 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 length 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, Kolody, and Valle, 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 commonly found 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, Kuhn, and Jochem, 2017). The latter argument implies selective migration, and suggests that it is relevant to compare the immigrants also with people in the home country who have not taken the decision to migrate.

Considering the evidence reviewed above, rather than making one more comparison of immigrants with the native-born US population, the objective of this paper to analyze the differences in mental health problems reported by Mexican, Colombian, and Dominican immigrants in the US, while, moreover, comparing them with non-migrants in similarly precarious economic situations in the sending countries. The latter allows us to better single out the impact the migration process may have, while capturing the heterogeneity between Hispanics of different origins. Differences in migratory patterns and histories may have contributed to differences in economic and health profiles.

For our analysis we concentrate on unemployed and underemployed working-age persons, because they are more likely to be in a precarious employment situation and more susceptible to problems with mental health. 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, 2014), but 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).

In particular, we intent 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. Our starting point is the hypothesis that differences in the observed risks to develop psychological distress are explained not only by demographic and economic factors, but also by sociocultural factors (such as the role played by the individual in its household and society), personal factors (such as high self-esteem and low mental stability) and attitudinal factors (such as satisfaction with previous jobs, previous unemployment experiences and expectations of taking on a new job or of going back to their country of origin). Cultural aspects such as the language in which Latin Americans are asked about the symptoms of these diseases as well as the negative connotations with them can also be expected to have an impact on the lower reported level 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 factors that are not often asked for in nationally representative surveys. Through the organization of focus groups we are able to add even more insight. 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 and their conditions in comparison with the sending countries.

The article is organized as follows. The next session provides more background information on the migration histories of the three countries that are compared. The details of our mixed quantitative and qualitative research methodology are presented in the subsequent section,

discussing, first, the structure of the survey that was conducted, including the measurement of depression and anxiety and of the other objective and subjective characteristics that were identified as potential factors to explain differences, and second, the set-up of the focus groups that were held in order to gain deeper knowledge regarding the issues at hand. The results section presents the findings obtained with the survey and the focus groups, respectively. The concluding section gives some recommendations for policies that may help to alleviate mental health issues among Latin-American immigrants.

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 three countries Mexico, Colombia, and the Dominican Republic. The three 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 may lead to differences in levels of reported and experienced mental health problems (Alegría *et al*., 2008). Caicedo and van Gameren (2014, 2016) have shown that the risk of developing anxiety or depression is higher among the unemployed, and that, compared to other Hispanic immigrants and the US native population, Mexican immigrants exhibit the lowest prevalence and probability of developing these disorders. Research on the mental health of Dominicans in the US is scarce (Baez 2005); some have pointed out that, just as with other immigrant groups, undocumented Dominicans experience situations of stress and psychological distress (Guarnaccia, Martínez, and Acosta, 2005).

We included the Mexican immigrants due to their numeric importance – Mexicans constitute the most numerous 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, 2010a).

Despite this long history, Mexicans represent one of the majorly disadvantaged Latin American immigrant groups in the US labor market. Since the 1970s, 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 (Canales, 2001; 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 toward 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 of indigenous individuals, and with a wide diversification of the points of origin. Currently, the Mexicans have the lowest educational and occupational profiles among all Latin American immigrants, with the lowest average income and the highest poverty rate (Caicedo, 2010a).

Generally speaking, Dominican immigrants display socioeconomic characteristics similar to Mexicans. They are the third largest group of immigrants in the US (Caicedo, 2010a). Dominican immigration has been favored by the neo-colonial relations established between the US and the Dominican Republic (Portes and Guarnizo, 1991). Members of this group concentrate in New York and New Jersey. Contrary to what is observed in the Mexican case, this group is characterized by women with high rates of labor participation (Caicedo, 2010b).

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 and Dominican immigrants (Caicedo, 2010a). The violence 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 into the cities and into other countries. Other factors are the high levels of unemployment and the deterioration of working conditions. This group of immigrants is mainly found in New York.

Methodological strategies

Our methodology combines quantitative and qualitative approaches. Regarding the quantitative analysis, a survey was conducted via the Mexican consulates in Chicago and New York and the Colombian and Dominican consulates in New York, as well as in the employment offices of the

16 boroughs of Mexico City and the National Learning Service (SENA) in Cali (Colombia),[2] targeting unemployed and underemployed persons – in the consulates, immigrants – 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 minors due to the contents of the questionnaire.

An unemployed person was considered to be someone who had not worked during 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 work hours and available to start to work as soon as they were called to do so.

The qualitative part of the analysis consisted of focus groups held with individuals with the same characteristics as for the quantitative analysis, staging the opportunity to ask more profound questions. We briefly discuss the various methodological choices in the following subsections.

The organization of the survey

Our survey (*Unemployment and Mental Health in Latin American Immigrants in the US and in the Sending Countries (DSM) 2015*) was conducted during the months of April, September and November of 2015, via the aforementioned consulates in the US and employment offices in the sending countries. 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.

[2] Budgetary and organizational restrictions made it impossible to carry out the survey in the Dominican Republic, and also focus groups could not be organized among Dominicans.

In the consulates, the questionnaire was responded by immigrants that went there to receive information or do an administrative procedure.[3] The only eligibility criteria were those previously mentioned and the respondent's willingness to answer the questionnaire. The strategy in the employment offices was similar. 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. Once it was verified that the individuals met all the criteria to participate in the survey and agreed 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 questionnaire had an average duration of 25 minutes.

The survey was conduct by a field team with coordinators who were in charge of paving the way for the conduction of the survey, and pollsters who applied the filter and the questionnaire. Linking each filter, informed consent and questionnaire by a file number allowed us to keep the information in order and avoid confusion when systematizing it. Each day, the staff responsible for the project handed a number of questionnaires to the supervisors who, in turn, were in charge of handing them to the pollsters. At the end of the day, each supervisor gave back to the coordinators the questionnaires received that morning, even if they had not been successfully completed. 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 1291 unemployed and underemployed respondents. 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.

[3] 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).

Table 1 Surveyed population by origin, place of residence and labor status, 2015

Origin and place of residence	Total population	Unemployed (%)	Underemployed (%)
Mexicans in Chicago	223	36.3	63.7
Mexicans in New York	178	23.0	77.0
Dominicans in New York	291	44.0	56.0
Colombians in New York	75	30.7	69.3
Mexicans in Mexico City	277	83.8	16.2
Colombians in Cali (Colombia)	247	78.1	21.9
total	1291	54.1	45.9

Source: DSM-2015.

Measurement of depression and anxiety

Key information for the research project is whether the respondents are at risk of developing a depression or anxiety. The World Health Organization (WHO, 2017) defines depression as "a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness, and poor concentration". According to the WHO (2017), depression occupies the first place among mental diseases with over 300 million people suffering from it around the world. It is also an underdiagnosed disease, only 50% of the affected people are properly diagnosed and treated, and furthermore it is one of the diseases that cause the most social and labor disability. Anxiety can be understood as the alarm system of the human body, that is, as the brain's means to let the body know something bad could happen. It turns pathologic when it is excessively intense and persistent and stops being a useful indication of alarm. Among the different forms of this disease we can identify: panic disorder, acute stress disorder, post-traumatic stress disorder, generalized anxiety disorder, social phobia or social anxiety disorder, specific phobias and agoraphobia (Chávez-Leon, 2012). However, it is not our intention to medically diagnose the survey respondents.

We use the Spanish translation of the Kessler Psychological Distress scale, K10 (Kessler and Mroczeck, 1994) as an approximation for the issues experienced with depression and anxiety.[4] The K10 scale consists of the following questions: In the last 30 days, how frequently did you feel: tired for no good reason? Nervous? So nervous that nothing could calm you down? Hopeless? Restless or fidgety? So restless you could not sit still? Depressed? That everything was an effort? So sad that nothing could cheer you up? Worthless?, each with possible answers:

[4] 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.

(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 a depression or anxiety disorder, and a value between 20 and 24 indicates a mild level of these disorders. Scores 25-29 correspond to a moderate level, whereas values between 30 and 50 indicate severe depression and anxiety. The scale does not permit establishing the precise type of disorder experienced by the individual; it is rather a summary measurement that accounts for the general level of co-morbidity of depression or anxiety (Kessler *et al*., 2002, 2003).

Other survey questions

In addition to the questions about the psychological distress, the survey contained questions that were chosen based on the factors identified in the literature as potentially relevant, and on the hypotheses posed in the Introduction. This selection includes the standard demographic information – age, gender, marital status – as well as socioeconomic information – the level of education and the number of financial dependents of the respondent.

Various indicators of the respondents' actual labor conditions were included in the survey, as well as in our quantitative analysis. 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 their 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 takes place 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 does 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 the

questions regarding the frequency with which the respondent worried over 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). A second index combined two variables related to the satisfaction with the use of time worked and time not worked. For both indices, a higher value indicates a preferred situation – fewer financial worries, more satisfaction with time use. The last index in this group referred to the respondent's commitment to their job in relation to the satisfaction derived from it. Answers to the following statements were included: "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 works longer hours to increase satisfaction.

Also we account for the respondents' opinions on the importance of work for life and aspirations regarding favorable job characteristics. The question "Work is what makes it worth living" appeared to measure a separate dimension. An index could be constructed on the basis of five statements that account for the aspirations regarding social welfare and security. We included 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 nicer job with better characteristics is important for the respondent.

Lastly, we included an index that aims to account for the individuals' perceptions regarding various indicators of the K10 scale to measure depression and anxiety. This index 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.

Organization and set-up of the focus groups

In addition to the survey and the accompanying quantitative analysis, we organized focus groups, with the purpose to find out more about the values, norms, ideas and perceptions of the different

social groups in our research regarding the concepts that form the Kessler K10 scale. In the focus groups, triangulation of three instruments was applied to obtain reliable results. We asked participants to score the same K10 scale as used in the survey. Importantly, we asked more specifically about the meaning and interpretation of each one of the indicators that form the Kessler scale. Moreover, participants were shown texts with hypothetical cases regarding depression and anxiety, and asked for their opinion regarding the mental health status of the cases described. The replies to those questions were obtained both in an individual (written) manner as well as in discussions during plenary sessions. For the analysis of the qualitative information the constant comparisons method was used (Corbin and Strauss, 2008).

Three focus groups were formed with Mexican immigrants in Chicago, with participants contacted at *Erie Neighborhood House*. Also in Mexico City three groups were formed: Individuals who had finished university studies, members of a community home (in the north of the city) and an indigenous community (in the east of the city). The two focus groups in Colombia had their participants gathered through the National Learning Service (SENA) in Cali. In each focus group between 8 and 15 persons participated, in sessions that had an average duration of 90 minutes. To each participant an informed consent form was read indicating the project's objective and the way in which their information would be used. The responsible researcher coordinated the focus group, and collected, systematized, and analyzed the information that was obtained.

Results

Before presenting the actual results, we want to verify that our sample of respondents is 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, with an average age of 37 years in our data (and 36 in the ACS-2014), are the youngest immigrants, while the oldest group is formed by the Colombian immigrants, with an average 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 at the SENA offices, where they go to request occupational training. Participation by gender varies between ethnic groups and the town where the survey was conducted. For example, in Chicago

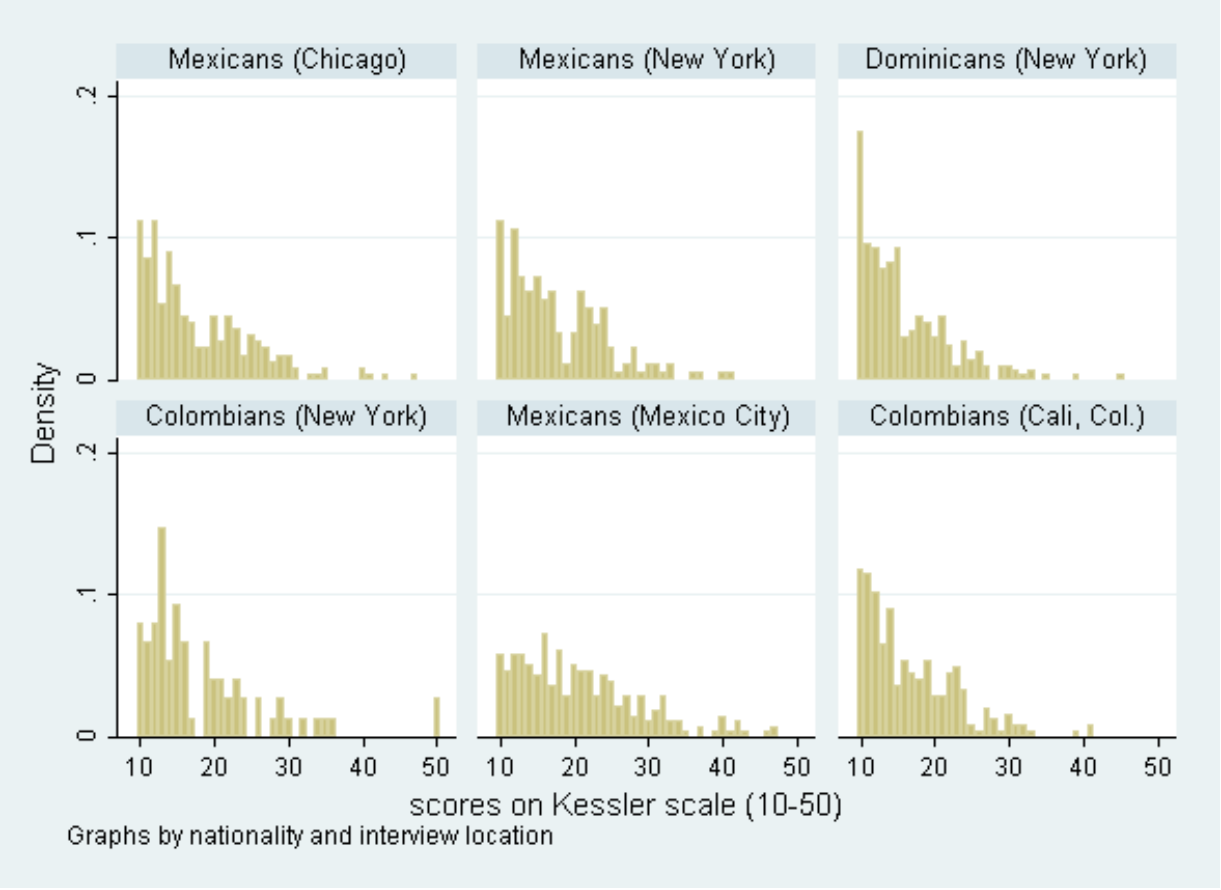
and New York, Mexican men constitute more than 60% of the respondents, while in Mexico City the distribution is almost even. Women form the majority among Dominicans and Colombians. The groups with higher marriage/cohabiting rates are the Mexicans in Chicago and New York (68.5 and 64.6%, respectively). In the ACS-2014, Dominicans are the ones with lower marriage/cohabitation rates and, logically, the ones with the highest rate of individuals who have never been married or lived with a partner (37.0 and 46.7%, respectively). 42.4% of the Mexicans in Mexico City and 49.6% of the Colombians in Cali who participated in the survey have never been married or lived with a partner. Due to the fact that the survey was conducted at the consulates, there is a higher presence of recently arrived individuals. In all cases, except that of the Mexicans in Chicago, over 61% of the immigrants arrived to the US between 1991 and 2014. There is an important concentration of people with education at high school level – especially in the case of the Colombians. The Mexican immigrants in Chicago – with a longer migration history – speak better English than those in New York. In general, the respondents' income level is low.

We conclude that, although due to the sampling strategy we cannot talk about a formal representative sample, our data reflect the tendency observed in the ACS-2014 for unemployed immigrants from Mexico, Colombian and the Dominican Republic 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 the remaining differences between respondents.

Factors behind the differences in depression and anxiety: the survey

Figure 1 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 Chicago and New York are located at the lowest levels of the scale, indicating low risk of mental health problems, same as the Dominican. For Colombians in New York the peaks off the extreme left imply that disavowal of any problem on the Kessler scale items is less common. For the Mexicans in Mexico City the scores are spread more evenly across the whole scale; they thus have a relatively larger number of respondents with an elevated risk to develop depression or anxiety.

Figure 1. Kessler 10 Scale Distribution for the Six Groups [a]



Source: DSM-2015.

a Shown are, in the six groups defined by nationality and interview location, the shares (on the y-axis) of the scores on the Kessler K10 scale (on the x-axis, ranging from 0 to 40, where a higher score indicates a higher probability of mental health problems).

Table 2 summarizes the results of the model explaining the reported scores on the K10 scale 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 about the attitudes towards work and the perceptions about mental health issues (column 4).[5] It is important to emphasize that the analysis refers to a non-probabilistic sample

[5] Given that the distribution of scores on the Kessler scale is highly skewed, an analysis using OLS under the assumption of an normal distribution does not satisfy the requirements of a multivariate analysis. We opted for a count data model assuming the underlying process follows a Negative Binomial distribution, interpreting the

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 have a higher 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, Plotsky, and Nemerof, 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 Mouzo, 2013; Tausig, Michelo, and Subedi, 2003; Ezzy, 1993). As shown in other studies, being married or cohabiting appears to be a protective factor of mental health problems (Aguilar-Gaxiola *et al*., 2011), 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 their number the higher the possibility of developing depression or anxiety. In accordance with numerous publications (Tausig, Michelo, and Subedi, 2003), a higher educational level significantly reduces the possibility of developing either of these disorders. In particular, a respondent with secondary or higher studies, has a strongly reduced possibility in comparison with someone who did not study beyond elementary school; moreover, the higher the level of education the larger the difference.

Importantly, the status of underemployment, compared to being unemployed, reduces the probabilities of developing anxiety and depression. 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 (col. 2, 3, and 4), we see that the underemployed are not better off, in terms of distress, than the unemployed; their job may imply slightly preferable conditions but they do not seem to be structurally better off.

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scores on the Kessler scale (relocated to the range 0-40) as a variable that 'counts' the level of non-specific psychological distress.

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 Mexicans immigrants and those in Mexico City, where the latter have a much higher chance of developing depression or anxiety. This suggests that, at least in the Mexican case, migration seems to have an effect on the K10 scores; Mexican immigrants appear less likely to report psychological distress. However, also these differences turn insignificant when we account for differences in the satisfaction and commitment with time use on and off the job and in the aspirations for work and perceptions regarding mental health (col. 3 and 4).

For Colombians we find the opposite; Colombian immigrants in New York report more distress than Colombians in Cali, and also (though weakly) more than the Mexican immigrants – when controlling for demographic and economic characteristics (col. 1). Controlling for the more subjective characteristics (col. 3 and 4), the difference between Colombian immigrants and their counterparts in Colombia is maintained and even strengthened – the latter with a reduced probability of developing depression or anxiety than the immigrants – while differences between Mexican and Colombian immigrants turn statistically insignificant. Dominicans immigrants, in contrast, are less likely to report psychological distress than the Mexican and the Colombian immigrants. The difference is significant (at a 90% confidence level) when accounting for differences in demographic and economic characteristics (col. 1), and become stronger when controlling for differences in satisfaction and perceptions (col. 4). After accounting for differences in objective conditions and subjective attitudes, Dominicans appear to be structurally less likely to report mental health issues than Mexican and Colombian immigrants.

We have already noted that in the second column, extending the model with the objective economic and labor conditions, gender and current labor status 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

lower distress. The estimated coefficients, however, imply that the lowest scores on the Kessler scale are attained at a weekly income of about 1100 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 sociologic theory, which locates the roots of the individuals' mental problems in structural inequalities such as gender, socioeconomic status and ethnic group (Tausig, Michelo, and Subedi, 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 disease.

The third column adds indicators regarding the (subjective) satisfaction with the current or last job to the model. We find that people with greater financial worries have a higher probability to develop depression or anxiety, while those who are more satisfied with their time use on and off the job report lower levels in the K10 scale. The last of the indices, related to the commitment to a job, on the other hand, does not show statistical significance. In other words, high levels of satisfaction 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 depression or anxiety. Adding these indices made that also marital status loses its significance.

In the fourth and last column we add the values and perceptions regarding work and mental health. We find that respondents who agree more with the statement that work makes it worth living, suffer more from depression and anxiety than those for whom work is not as important. On the other hand, the broader index on job aspirations does not have a clear relation with the dependent variable, although the positive estimate points in the same direction: those who put more value on a job with attractive characteristics may get disappointed if they cannot achieve their desires and may be more likely to report some mental health problem. The results from the index measuring perceptions about the items of the K10 scale show that those who agree more with the affirmations that mental health problems are a private issue and that strong people can overcome without help from others, report lower levels in the K10 scale. In order

words, respondents who consider that they should be strong and not show weakness are less likely to report that they suffer mental health problems.

Table 2 Relation between Kessler K10 scores and individual characteristics [a]

	(1)	(2)	(3)	(4)
Employment status: underemployed *(ref: unemployed)*	–**	(–)	(–)	(–)
Nationality / interview location (ref: Mexicans in Chicago)				
Mexicans in New York	(+)	(+)	(+)	(+)
Dominicans in New York	–*	–**	–***	–***
Colombians in New York	+[#]	(+)	(+)	(+)
Mexicans in Mexico City	+***	+**	(+)	(+)
Colombians in Cali (Colombia)	(–)	–**	–***	–***
Gender: female *(ref: male)*	+**	(+)	(–)	(–)
Age (allowing for parabolic effect)	(inv.U)	(inv.U)	(inv.U)	(inv.U)
Marital status (ref: married/cohabiting)				
Single (divorced, widowed)	+***	+**	+[#]	(+)
Single (never together)	(+)	(+)	(+)	(+)
Number of economic dependents	+**	+**	(+)	(+)
Education (ref: up to elementary)				
junior high	–**	–**	–*	–*
high school	–***	–***	–***	–***
some college or more	–**	–**	–*	–*
Individual weekly income (100s of USD) (parabolic)		U-sh.***	U-sh.***	U-sh.***
Index Labor conditions (labor hours) [b]		(–)	(–)	(–)
Index Labor conditions (employee. benefits) [b]		(–)	+*	+**
Index Absence of Financial Stress (sufficient income)			–***	–***
Index Satisfaction with the time occupation			–***	–***
Index Commitment and Satisfaction with the job			(–)	(–)
Work is what makes it worth living [c]				–*
Index Aspired job characteristics				(+)
Index Perceptions about mental health (“don't complain be strong”)				–**

Source: DSM-2015.

a Signs of the estimated coefficients of multivariate count data models. “U-sh.” indicates a U-shaped relation, while “inv.U” indicates an inverse-U-shaped relation. See Appendix Table A.1 for the estimated coefficients.

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

c Four-point scale, strongly agree, agree, disagree, strongly disagree

Significance level: *** p<0.01, ** p<0.05, * p<0.10, [#] p<0.15. Non-significant coefficients in parenthesis.

The meaning and connotation of depression: the focus groups

Working with focus groups allowed us to gather information that adds to the results obtained with the survey. We encountered that the majority of the questions of the K10 scale are understandable for most participants, except for “Feeling worthless” and “Feeling tired for no good reason”, two phrasings that caused confusion. For these items, the respondents’ definitions were completely ambiguous: very few people associated the concept “worthless” with feeling

one is not worth anything, and when asked for examples of "feeling tired for no good reason", answers like "tired due to having worked all day" were obtained.[6] Few people associated the statement with not knowing why they felt tired. The meaning of these concepts, validated for the version in English of the Kessler scale, may have a different connotation when translated to Spanish, especially for immigrants in rather precarious situations.[7]

Most focus group participants have a general idea of what depression is; they can identify specific symptoms and they acknowledge it as a mental disease. However, the symptoms that were mentioned are linked with severe depression, and may obstruct the identification of lighter versions of depression. Moreover, suffering from depression is considered to belong to the private area of a person's life. One should be capable of getting past it with the support of family and close friends, and only in "extreme cases" a health professional should be consulted. For the focus group participants, attitudes or behavior in which a depressed person may incur, such as excessive alcohol consumption, seem to be rather disconnected from the concept of a depression. There exists more confusion and lack of knowledge regarding the symptoms of anxiety. It tends to be seen as a synonym for nervousness, and as something that occurs in specific circumstances that are not necessarily related with a mental problem. Even more than with depressions, participants considered that individuals should be able to control anxiety without professional support. In general, the focus groups allowed us to confirm that there is a tendency towards the acknowledgement of the symptoms in the scale, especially when there is a feeling of frustration for not reaching proposed goals (particularly, in the case of immigrants).

Moreover, although the survey data did not show a strong relation of ethnic concentration and family support with the K10 scale, by means of the focus groups we were able to verify that, as shown by the literature on the subject (Aguilar-Gaxiola *et al*., 2011) social networks, and particularly family support and closeness with fellow-countrymen is a fundamental factor to protect the mental health of immigrants.[8]

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[6] The questions in Spanish, in the focus groups as well as in the survey questionnaire, said "*Sin mérito alguno*" and "*Cansado/a sin una buena razón*", respectively.

[7] Several translations and validations of the Kessler-10 scale in Spanish are used in different countries, see for example, Brenlla and Aranguren (2010), and Vargas Terrez *et al*. (2011).

[8] These variables could not be included in the empirical analysis because the questions regarding ethnicity-based networks were only asked from the immigrants in the US and not from their counterparts in the sending countries.

It is important to emphasize that the ideas of the focus group participants should not be considered as mistaken; they are in fact a reflection of popular knowledge, scientific knowledge and values incorporated into societies about mental disease (Giraldo-Mora, 2009; Ayestaran and Paez, 1986). It is to be expected that in a social group for which concepts such as "depression" have a negative connotation and the acknowledgement of the symptoms of a mental disease implies prejudices or ideas that are in disagreement with the medical definition, diagnosing the disease, preventing it and treating it becomes a challenging task that can even entail insubstantial results of public policies regarding mental health.

Conclusions

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 with Dominican and Colombian immigrants in New York and Colombians in Cali. For that we have developed a survey and organized focus groups, both with the intention 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. Our approach permitted to contribute on important aspects commonly overseen in the Hispanic Health Paradox literature: the heterogeneity between Hispanics from different origins, and the comparison with persons in similar conditions in the sending countries.

When controlling for a limited number of demographic and economic conditions, we found large differences between the 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 developing depression or anxiety. The differences between immigrants and comparable non-migrated Mexicans vanished when we also accounted for 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 are related to the reasons and intentions of the migration, and thus at least partly in line with 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 in Colombia. After controlling for objective and subjective factors, Dominican immigrants are consistently less likely to report psychological distress.

Regarding the individual-specific characteristics, we found, in particular, that a lower level of schooling, having a larger number of financial dependents, as well as a lower income increase the chances to develop psychological distress. These results are consistent with the wide sociological literature proposing structural inequalities as one of the main causes of mental disease. 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, the higher the value the respondents attach to work for their life, the more likely the development of a mental disease. Moreover, we encountered that respondents who have the opinion that people should not show their weaknesses are less likely to report mental problems. From the focus groups we learned that, although there is a general understanding of what a depression is, there exists ambiguity about the interpretation of the items on the Kessler scale, due to different connotations with the terms used in Spanish and English. Moreover, the focus groups allowed us to establish that social (ethnic) networks are relevant protective factors.

Our results imply that there is a capacity for resilience among immigrants when goals are about to be achieved, when there has been an investment in a project that jeopardizes elements such as prestige, family, and success. There is also strong reluctance to declare themselves down, or scared of the high vulnerability and uncertainty of everyday life; accepting that one is ill implies acknowledging that the project is at risk of not being fulfilled. Once the decision to migrate is taken, one feels obliged to cope with the situation no matter how adverse it may turn: many feel that it is not an option to give up and return to their native grounds.

As the results show, such a mindset does not imply the absence of psychological distress. This research allows us to identify four fundamental needs: First, mental health must be a part of the socioeconomic integration process of immigrants in the US society. The existence of enough jobs that are well paid and with better working conditions is fundamental. Second, it is necessary to acknowledge that mental diseases have different meanings and connotations for different ethnic groups; this implies strengthening the knowledge on and identification of the symptoms of depression and anxiety. Third, it is necessary to phrase indicators or questions according to the predominant language used in Hispanic cultures. This would help avoid the various misinterpretations of the same. Regarding future research, 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 permit gender or age-specific comparisons.

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APPENDIX

Table A.1 contains the estimated coefficients that underlie the results presented in Table 2.

Table A.1 Relation between Kessler K10 scores and individual characteristics [a]

VARIABLES	kessler0	kessler0	kessler0	kessler0
employment status: underemployed	-0.131**	-0.018	-0.050	-0.038
	(0.063)	(0.070)	(0.068)	(0.069)
nationality / interview location (ref: Mexicans in Chicago)				
Mexicans in New York	0.028	0.033	0.109	0.113
	(0.100)	(0.100)	(0.096)	(0.097)
Dominicans in New York	-0.171*	-0.226**	-0.354***	-0.333***
	(0.097)	(0.099)	(0.096)	(0.100)
Colombians in New York	0.217+	0.164	0.014	0.002
	(0.139)	(0.142)	(0.136)	(0.139)
Mexicans in Mexico City	0.390***	0.234**	0.062	0.019
	(0.097)	(0.107)	(0.103)	(0.105)
Colombians in Cali (Colombia)	-0.018	-0.271**	-0.424***	-0.423***

	(0.104)	(0.124)	(0.119)	(0.120)
gender: female	0.122**	0.053	-0.049	-0.056
	(0.057)	(0.059)	(0.057)	(0.058)
Age	0.016	0.018	-0.000	0.002
	(0.016)	(0.016)	(0.016)	(0.016)
Age squared	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Marital status (ref: married/cohabiting)				
single (divorced, widowed)	0.225***	0.201**	0.126+	0.111
	(0.084)	(0.085)	(0.082)	(0.082)
single (never together)	0.076	0.085	0.043	0.035
	(0.069)	(0.069)	(0.066)	(0.067)
No. of economic dependents	0.047**	0.055**	0.016	0.019
	(0.022)	(0.022)	(0.022)	(0.022)
Education (ref: up to elementary)				
junior high	-0.224**	-0.227**	-0.186*	-0.188*
	(0.105)	(0.105)	(0.100)	(0.101)
high school	-0.312***	-0.317***	-0.292***	-0.289***
	(0.106)	(0.106)	(0.102)	(0.103)
some college or more	-0.303**	-0.269**	-0.214*	-0.208*
	(0.118)	(0.120)	(0.114)	(0.116)
Individual weekly income (100s of USD)		-0.133***	-0.113***	-0.117***
		(0.031)	(0.029)	(0.030)
Individual weekly income (100s of USD) squared		0.006***	0.006***	0.006***
		(0.002)	(0.002)	(0.002)
index Labor conditions (labor hours) [b]		-0.020	-0.009	-0.007
		(0.030)	(0.029)	(0.029)
index Labor conditions (employee. benefits) [b]		-0.015	0.060*	0.063**
		(0.032)	(0.031)	(0.031)
index Absence of Financial Stress (sufficient income)			-0.292***	-0.288***
			(0.031)	(0.032)
index Satisfaction with the time occupation			-0.106***	-0.111***
			(0.030)	(0.030)
index Commitment and Satisfaction with the job			-0.005	-0.003
			(0.026)	(0.026)
Work is what makes it worth living [c]				-0.061*
				(0.034)
index Aspired job characteristics				0.022
				(0.028)
index Perceptions about mental health (‘don't complain be strong’)				-0.061**
				(0.029)
Constant	1.744***	1.969***	2.477***	2.602***
	(0.322)	(0.335)	(0.324)	(0.336)
log(alpha) – dispersion parameter	-0.236***	-0.257***	-0.395***	-0.406***
	(0.049)	(0.050)	(0.053)	(0.053)
No. of observations	1,263	1,224	1,210	1,186
Loglikelihood	-3872	-3746	-3642	-3573

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 Fig. 1).
b For underemployed, in the current main job; for unemployed in the last main job
c Four-point scale, strongly agree, agree, disagree, strongly disagree
Significance level: *** p<0.01, ** p<0.05, * p<0.10, # p<0.15. Non-significant coefficients in parenthesis.
Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10, + p<0.15