Estimating the effects of Mexico-U.S. migration on elevated depressive symptoms: evidence from pooled national cohorts

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Abstract (150 words)

Estimates of the health effects of migration may be biased due to migration selectivity, whereby migrants systematically differ from their non-migrant counterparts on pre-migration characteristics (*e.g.,* education) that also influence post-migration health outcomes. Time-dependent mediator-confounders, which influence migration probabilities but are also mechanisms by which migration may influence health, make it difficult to account for selection without controlling for mediators. Pooling data from the Mexican Health and Aging Study (N=17,628) and Mexican-born participants in the U.S. Health and Retirement Study (n= 898), we evaluated effects of migration (at any age and in childhood, adolescence, or adulthood) to the U.S. on elevated depressive symptoms. We used covariate-adjusted generalized estimating equations, with inverse probability weighting to account for age-specific migration selection. Migration to the U.S. was unrelated to depressive symptoms among men. Among women, there was some evidence that migration in early adulthood protected against depressive symptoms in late life.

Background

Research evaluating mental health outcomes among migrants from Mexico to the U.S. has shown equivocal results. Some studies suggest that Mexican-born migrants have lower levels of depression, anxiety, and substance use disorders (1-7) compared to their U.S.-born counterparts. However, other work has shown that longer U.S. residency and acculturation may negatively influence migrant health, including mental health (6, 8-10), diminishing these potential advantages. Potential mechanisms to explain these disparate findings might include selection of healthier migrants into the U.S. (11-13) as well as cumulative effects of stressors experienced by migrants when living in the U.S. (14, 15).

An abundance of health inequality research compares migrants residing in the U.S. with U.S.-born individuals in order to estimate health inequalities of migrant populations in the U.S. (16-19). However, estimating the effects of migration would ideally compare outcomes observed for Mexican-born migrants to the same outcomes observed for their non-migrant counterparts who remain in Mexico. This comparison more appropriately evaluates the potential outcomes migrants would have experienced had they, counter-to-fact, never migrated and remained in Mexico. Such a direct comparison requires harmonized cross-national data and has motivated several prior studies of migrant mental health (5, 6, 13, 14, 19, 20). These cross-national comparisons, however, may fail to estimate the true effects of Mexico-U.S. migration if important determinants of migration chances, i.e. selective factors into migration, are not taken into account.

Research suggests that individuals may be selected into migration based on childhood factors such as early-life socio-economic status and educational attainment as well as time varying factors which may influence migration but are also potentially influenced by migration status (5, 21, 22). For example, underemployment in Mexico may push individuals to seek employment opportunities in the

United States via migration (23). Migration to the U.S., however, may itself positively or negatively influence an individual's employment status by changing labor market opportunities (21, 24, 25). Comparisons of the health of migrants to that of non-migrants may be biased unless such migration selectivity is accounted for (5). Conventional approaches would control for measured factors that influence migration, but since many of these factors may also be affected by migration such control would systematically underestimate the effects of migration. Conventional regression approaches that account for the factors that increase migration may simultaneously (and incorrectly) control for the mechanisms by which migration is likely to influence health.

Thus, we revisit and adopt age-specific inverse probability of treatment (migration) weights to provide an improved estimate of the effects of migration on depressive symptoms in middle- and late-life using harmonized national studies of U.S. and Mexican adults, age 50 years and older.

Methods

Sample

The Health and Retirement Study (HRS) is an ongoing national cohort study of U.S., non-institutionalized adults ages 50 years and older and their spouses. It includes oversampling of African Americans, Hispanics, and residents of the state of Florida. Study participants are interviewed approximately every 2 years with new enrollment periods every 6 years to maintain representation of the aging U.S. population (26, 27). Likewise, the Mexican Health and Aging Study (MHAS) is a sister study of HRS, designed as a longitudinal study with protocols highly comparable to HRS (28). Data collection for the HRS is approved by the Institutional Review Board (IRB) at the University of Michigan and MHAS is approved by the IRB at the University of Maryland, University of Pennsylvania, and the University of Texas Medical Branch. All respondents provided informed consent. The University of California, San Francisco IRB determined this study was exempt from human subjects regulations.

The present study is a pooled analysis using data from the 2000 through 2012 waves of HRS (7 study waves) and the 2001, 2003, and 2012 waves of MHAS (3 study waves), allowing for new enrollment across waves. We merged harmonized data for Mexicans living in Mexico who participated in MHAS (N=18,302) with data for Mexican-born migrants living in the U.S. who participated in HRS (n= 924). The analytic sample was restricted to adults age 50 years and older at the time of study participation with complete covariate information (n=3,817 observations from 1,175 participants (6.3% of observations) excluded due to missing CESD score), for a final sample of n=18,526 participants who participated in the 2000/2001, 2002/2003, and 2012 waves (HRS/MHAS, respectively).

Exposure: Migration

Among HRS participants, migrants to the U.S. were identified using self-reported country of birth (Mexico). MHAS participants were restricted to Mexican-born participants and return migrants (Mexican-born persons who returned to Mexico from the U.S.) were identified using the question "Not counting vacations and short visits, have you ever worked or lived in the U.S.?" Migration status was operationalized ("yes"/"no") as ever migrant (U.S. residing migrant or return migrants) versus never migrant. Measures of age-specific migration were also created using self-reported age at first migration to the U.S., available in both datasets. Migration before age 18, migration between the ages of 18 and 24, and migration after age 24 were operationalized as migrated within the age range versus did not migrate within the age range with both migrants and non-migrants present in the respective reference groups.

Outcome: Elevated depressive symptoms

At each wave, depressive symptoms were measured using a modified 8-item (HRS) or 9-item (MHAS) version of the Center for Epidemiologic Studies Depression (CESD) scale querying symptoms experienced in the past week (29, 30). Seven identical items in each of the scales (HRS and MHAS) were

used to create a harmonized scale score: a sum of the five "negative" indicators and two reverse-coded "positive" indicators ("yes"/"no" response; score range 0-7). The negative indicators measured whether the participant experienced the following sentiments all or most of the time: depression, everything is an effort, sleep is restless, felt alone, and felt sad. The positive indicators measured whether the participant felt happy and enjoyed life, all or most of the time. Elevated depressive symptoms were operationalized as >4/7 symptoms as a conservative alternative to the usual >4/8 cut point (30, 31).

Covariates

Demographic characteristics included age (in years at each evaluation, centered at 65), birth year (centered at 1924), maternal educational attainment (categorized as <8 years, ≥8 years, or "do not know"), and paternal educational attainment (categorized as <8 years, ≥8 years, or "do not know"). Inverse probability weighting models (IPTWs) were used to additionally account for time-varying confounders that both influence selection into migration and may also be influenced by migration status at later times. IPTWs were based on models of the cumulative probability of migration from birth till either age of migration or last study visit, conditional on time-varying covariates: smoking status (current smoker versus not current smoker), job status (employed versus unemployed), marital status (married versus not married), height (cm), and own educational attainment (in years).

Statistical Analysis

We estimated the association between migration status on elevated depressive symptoms using generalized estimating equations with an independent working correlation matrix, logit link, and clustering by participant to account for repeated measures on the same individual. It was necessary to use an independent correlation structure to correctly incorporate the weights used to account for selection into migration (32). We adjusted for alternative covariate sets guided by our conceptual model (Figure 1). In Model 1, to estimate the total effect, we adjusted for potential confounders that were determined at or before participant birth (age at evaluation, sex, birth year). In Model 2, we additionally

adjusted for potential childhood socioeconomic confounders that would almost certainly have occurred before exposure to migration (parental education). We would have ideally adjusted for potential confounders of the association according to Figure 1 in Model 3. However, in actuality, these confounding relationships are time-dependent and are more likely to be represented by Figure 2, i.e., potentially influenced by the decision to migrate. Therefore, we account for potential time-varying confounding through inverse probability weighting (IPTW) to account for selectors into migration described previously. Weights were estimated with a stacked logistic regression evaluating the probability that each individual in the pooled data set migrated at each year of his/her life, adjusting for covariates that would have been established by that age (e.g., labor force status was set to zero for every year of the individual's life up to his/her self-reported first job) (33). Weights were stabilized and trimmed at the 1st and 99th percentiles. We additionally stratified results by sex to account for effect modification, as is consistent with NIH guidelines (22, 34). To evaluate if the estimated effect of migration differed according to age of migration, we also evaluated the estimated effects of age-specific migration, comparing migration before age 18, migration between 18 and 24, and migration after age 24, each compared to not migrating within the respective age range.

Sensitivity Analyses

To account for potential uncertainty in the choice of the binary cut point for elevated depressive symptoms, we conducted sensitivity analyses modeling elevated depressive symptoms as a count measure with a negative binomial distribution.

All analyses were conducted using SAS 9.4.

Results

Descriptive Statistics

At baseline, mean age was 61.1 (range 50-111) years, 13% were migrants (5% U.S. residing migrants and 8% return migrants), and the prevalence of elevated depressive symptoms was 20%. On

average, participants contributed to 2.1 (std 0.99; range 0-7) observations to the analyses. Compared to non-migrants, migrants were older, were more likely to be male, had completed more education, and had higher parental education (Table 1). At baseline, migrants had fewer depressive symptoms than non-migrants (Table 1). However, differences between migrants and non-migrants in depressive symptoms appeared to only be present among women (Table 2). Overall, men had fewer depressive symptoms than women (Table 2).

Migration and Depressive Symptoms

In models operationalizing depressive symptoms with a binary threshold (>4/7 symptoms), migration status among men was not associated with elevated depressive symptoms in study participants when adjusting for birth year, age, race/ethnicity, and sex (OR=1.03 (95% CI: 0.91, 1.17)). Additional adjustment for parental education and weighting for selection into migration revealed similarly null results (Table 3). Among women, migration status was non-significantly associated with lower odds of elevated depressive symptoms in models adjusting only for birth year, age, race/ethnicity, and sex (OR=0.89 (95% CI: 0.76, 1.03)). Additional adjustment for parental education attenuated the association (OR=0.98 (95% CI: 0.84, 1.14)), and the point estimate was close to null after weighting for selection into migration (OR=1.01 (95% CI: 0.76, 1.35)).

Estimates from a negative binomial model using a count of depressive symptoms (0-7) instead of a binary measure revealed similarly null results among men. When adjusting only for birth year, age, race/ethnicity, and sex, migration status among men was not associated with an increase in depressive symptoms (ratio of symptom-count for migrants to non-migrants=0.97 (95% CI: 0.92, 1.02)). Additional adjustment for parental education and weighting for selection into migration likewise revealed null results (Table 3). Among women, when modeling the count of symptoms, migration appeared to predict fewer depressive symptoms. Adjusting only for birth year, age, race/ethnicity, and sex, migration status

among women was protective (ratio of symptom-count=0.87 (95% CI: 0.81, 0.93)). Additional adjustment for parental education attenuated the association but remained significant (ratio of symptom-count=0.91 (95% CI: 0.85, 0.98)). The point estimate remained protective but confidence intervals were wide and the association was not significant in models weighted for selection into migration (IRR=0.95 (0.82, 1.11)).

Age-Specific Effects of Migration

Evaluating the potential of age-specific effects of migration, migration before age 18 was non-significantly associated with fewer depressive symptoms for both men and women (ratio of symptom-count for both=0.93 (95% CI: 0.80, 1.08)). Additional adjustments for parental education and selection into migration further attenuated association (Table 4).

Migration between ages 18 and 24 revealed non-significantly fewer depressive symptoms among men, and this association was robust to adjustment (Table 4). Among women, however, migration between ages 18 and 24 was associated with fewer depressive symptoms, adjusting for birth year, age, race/ethnicity, and sex (ratio of symptom-count=0.78 (95% CI: 0.67, 0.91)). This association remained protective and significant after adjusting for parental education (ratio of symptom-count for migrants to non-migrants=0.83 (95% CI: 0.70, 0.97)). The coefficient was very similar but not statistically significant after accounting for selection into migration (ratio of symptom-count=0.84 (95% CI: 0.65, 1.09)).

Finally, migration after age 24 was also non-significantly associated with fewer depressive symptoms among men (Table 4). Among women, the estimated effect of migration after age 24 was, again, protective against increasing depressive symptoms, adjusting for birth year, age, race/ethnicity, and sex (ratio of symptom-count for migrants to non-migrants=0.87 (95% CI: 0.81, 0.97)). This association remained protective and but lost significance after adjusting for parental education (ratio of

symptom-count for migrants to non-migrants=0.92 (95% CI: 0.85, 1.00)) and was no longer observed when accounting for selection into migration (ratio of symptom-count=1.05 (95% CI: 0.95, 1.16)).

Discussion

In harmonized, nationally representative samples, there was little difference in elevated depressive symptoms in mid- and late-life among migrant men compared to non-migrant men. For women, results suggested lower depressive symptom count among migrant versus non-migrant women. Age-specific associations suggested that such potential protective relationship between migration and depressive symptoms among women might be specific to early-adulthood (migration in ages 18 to 24). We interpret results for women cautiously because the findings appeared sensitive to outcome specification. Across all three age-specific migration comparisons, the adjustment for selective factors into migration using IPTW resulted in an attenuation of the association and loss of significance.

Literature evaluating the effects of Mexico-U.S. migration on mental health outcomes is presently unclear (1-4, 6-9); disentangling the effects of migration from confounding by potential selective factors into migration is a critical component of elucidating the true relationship between migration and depressive symptoms. We initially operationalized depressive symptoms using a conservative cutoff of 4 or more symptoms, based on prior literature emphasizing that a high level of symptoms may indicate greater clinical consequences. We evaluated models of the count of depressive symptoms only as a robustness check of our models. There was uncertainty in the placement of the cutoff, however, and further exploration revealed results were sensitive to cutoff placement. Previous literature has argued that dichotomization of continuous measures can lead to misleading results and is not a preferable form (35-37), potentially explaining some differences in our results. The association between depressive symptoms and other health consequences may also be better characterized by considering the dimensional nature of symptoms. For example, in the HRS, endorsement of any single

symptom on the CESD predicts higher risk of incident stroke, with similar patterns for whites, blacks, and Hispanics (38).

These results differ from some of the existing literature, but prior findings on the consequences of migration on migrant health have been contradictory and limited by data availability (8). Prior literature has shown that migrants residing in the U.S. have lower levels of depression and other mental health outcomes compared to U.S.-born Mexican Americans (19, 39). Studies evaluating migrants compared to non-migrants in the country of origin have shown positive health selection among Mexican immigrants to the U.S. compared to non-migrant Mexicans, which may extend to mental health outcomes as well. Mexican migrants are generally taller, have lower BMI, have higher levels of education in their family, have lower prevalence of hypertension, and report better self-reported general health status compared to non-migrants in Mexico (8, 11, 12). In contrast, a 2011 study comparing U.S. residing migrants from Mexico to non-migrant family remembers residing in Mexico found that migrants had a significantly higher risk for onset of any depressive or anxiety disorder than did non-migrant family members residing in Mexico (OR=1.42 (95% CI: 1.04, 1.94)) (6).

There are many components of the migrant experience that could result in different and potentially contradictory effects on health outcomes, particularly mental health outcomes. For example, cohort differences in the conditions of migration and residency in the U.S. may be contributing factors making comparability of the literature difficult (8, 40-42). Participants in our sample generally migrated in the 1950s and 1960s during the pre-Immigration Reform and Control Act of 1986 (IRCA) and possibly include those who engaged in circular labor migration during the Bracero period (1942-1964). Thus, migrants in our study were potentially more likely to move for economic purposes and, thus, may have greater health selection into migration. However, in other studies such as Breslau (2007) and those using the Mexican Family Life Survey (13), participants generally migrated in the late 1980s through 2000s, the post-IRCA and even post the Personal Responsibility and Work Opportunity

Reconciliation Act of 1996 (PRWORA). Migrants in these periods were arriving in a very different political climate and may have had diminished health selection due to different drivers for migration at the time (family reunification, for example). Thus, it is likely the effects of migration on mental health vary over time due to the changing political, social, and economic contexts driving and inhibiting migration between Mexico and the United States. These varying cohort differences may explain some differences between our findings and the existing literature.

Moreover, the short-term and long-term effects of migration on mental health may, themselves, differ. For example, literature comparing migrants to family members of migrants ages 18-65 has shown that the immediate post-migration period may have detrimental effects on the onset of psychiatric conditions (6, 8). This may be due to increased physical and psychological stress as a result of recent relocation: limited financial resources, separation from family and social context, and/or changing environmental exposures. However, these results appear to be specific to younger birth cohorts and may thus not extend to our older sample. The long-term effects of migration on mental health and health generally may be beneficial, such as by providing increased economic opportunity or health care access (8, 20, 43, 44). Previous work has shown that migration to the U.S. consistently improves the wealth of middle-aged and older Mexican return migrants, which is, in turn, associated with better health outcomes (8, 44, 45). However, existing literature has also shown that immigrant health and health behaviors deteriorate with longer durations of residence (8, 9, 46), consistent with the acculturative stress hypothesis (14, 15). Thus, together, these results do not provide definitive theoretical guidance about the net impact of migration, but effects may qualitatively vary over the lifecourse. Our own findings add to this literature and suggest little to no long-term effect of migration on elevated depressive symptoms among men, and possibly a protective effect for women who migrated in early adulthood.

Strengths of the study include the harmonized, nationally representative samples allowing for counterfactual comparisons not frequently evaluated in the literature and advanced methods allowing adjustment for time-varying confounding. However, our study also has several limitations. Our measure of depressive symptoms was a brief assessment of past-week depressive symptoms, and findings may differ with measures of longer-term symptoms or diagnostic measures. Additionally, the unclear diagnostic threshold in the harmonized CESD scale introduces uncertainty in the interpretation and translation of findings to clinical diagnostic measures, and sensitivity analyses revealed that results were sensitive to model specification (as was discussed previously). Finally, as is common with data sources available to evaluate health among migrant populations, many theoretically important variables were not measured or not measured in a way that could be harmonized between data sets. Thus, many additional factors probably influence selection into migration beyond those used in the selection model. For example, Mexico-U.S. migration patterns vary widely across regions of Mexico and decisions to migrate may be influenced by prior family, community, and regional migration experiences (8, 40, 41, 47). In fact, region of origin within Mexico may serve as a large predictor of selection into migration (40-42, 47, 48). Future work should seek to replicate this study in data sources with measures of pre-migration residence characteristics.

Overall, in pooled national cohorts of U.S. residing Mexican migrants and Mexico residing return migrants and non-migrants, we observed little difference in elevated depressive symptoms among men when comparing migrants and non-migrants while accounting for selective factors into migration. However, among women, there was some evidence to suggest that migration in early adulthood may provide protective effects from increasing depressive symptoms. Future studies are needed to investigate the heterogeneous effects of the differing lifecourse pathways between U.S. residing migrants and Mexico residing return migrants, including selection into return migration.

Table 1. Baseline characteristics (first evaluation) of the sample by migration status

	Migrant (n=2,439)	Non-Migrant (n=16,087)
Baseline age (years), mean (SD)	61.4 (9.2)	61.1 (8.9)
Birth year, mean (SD)	1943 (12.2)	1943 (11.3)
Female, %	31.6%	56.7%
Age first married, mean (SD)	24.4 (7.8)	23.9 (10.3)
Mother's education, %		
Missing/Do not know	11.8	12.1
None	41.1	46.9
Some primary	28.3	27.9
Primary	10.8	9.0
More than primary	8.0	4.1
Father's education, %		
Missing/Do not know	15.7	14.5
None	38.2	39.8
Some primary	27.3	29.6
Primary	10.3	9.6
More than primary	8.6	6.5
Own education (years), mean (SD)	5.5 (4.6)	5.3 (4.7)
Ever Smoke, %	63.0%	47.6%
Age first smoked, mean (SD)	19.5 (9.9)	20.7 (9.7)
Ever worked, %	92.0%	79.0%
Age at first job, mean (SD)	22.6 (16.0)	17.4 (10.2)
Baseline Depressive Symptoms, %		
0	35.1	29.2
1	19.3	18.2
2	12.4	13.0
3	8.0	9.6
4	7.8	9.3
5	7.3	8.3
6	5.3	6.9
7	4.9	5.5
Baseline Elevated Depressive Symptoms (>4/7), %	17.5	20.7

Table 2. Baseline depressive symptoms (first evaluation) by migration status and sex

	Migrant		Non-Migrant	
	Males (n=1,668)	**Females (n=771)**	**Males (n=6,975)**	**Females (n=9,112)**
Baseline Depressive Symptoms, %				
0	36.7	31.5	36.8	23.5
1	20.5	16.6	21.0	16.0
2	13.3	10.5	13.9	12.4
3	8.2	7.5	8.6	10.3
4	8.0	9.3	7.1	10.9
5	6.4	9.3	5.8	10.3
6	3.4	3.4	4.1	9.1
7	3.6	3.6	2.8	7.5
Baseline Elevated Depressive Symptoms (>4/7), %	13.4	26.3	12.7	26.9

Table 3. Estimated associations between migration and depressive symptoms

	Unadjusted Model	Model 1[a]	Model 2[b]	Model 3[c]
	Binary outcome (>4/7 symptoms)			
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Males	1.03 (0.91, 1.17)	1.00 (0.88, 1.13)	1.03 (0.91, 1.18)	1.07 (0.72, 1.60)
Females	0.86 (0.75, 1.00)	0.89 (0.76, 1.03)	0.98 (0.84, 1.14)	1.01 (0.76, 1.35)
	Count outcome with negative binomial distribution			
	Ratio of Symptom Count (95% CI)	Ratio of Symptom Count (95% CI)	Ratio of Symptom Count (95% CI)	Ratio of Symptom Count (95% CI)
Males	1.00 (0.95, 1.06)	0.97 (0.92, 1.02)	0.99 (0.94, 1.04)	0.85 (0.67, 1.09)
Females	0.86 (0.81, 0.91)	0.87 (0.81, 0.93)	0.91 (0.85, 0.98)	0.95 (0.82, 1.11)

[a] Model 1 is adjusted for age at measure, sex, and birth year.
[b] Model 2 is adjusted for age, sex, birth year, and parental education.
[c] Model 3 is adjusted for age, sex, birth year, parental education, and IPTW weights (stabilized and trimmed).
Ratio of symptom count is based on the exponentiated coefficient from the negative binomial model.

Table 4. Estimated ratio of symptom count and 95% confidence intervals for age-specific migration and depressive symptoms (count outcome with negative binomial distribution)

	Unadjusted Model	Model 1[a]	Model 2[b]	Model 3[c]
	Ratio of Symptom Count (95% CI)	Ratio of Symptom Count (95% CI)	Ratio of Symptom Count (95% CI)	Ratio of Symptom Count (95% CI)
Migration before age 18				
Males	0.90 (0.77, 1.04)	0.93 (0.80, 1.08)	0.99 (0.85, 1.15)	1.02 (0.84, 1.23)
Females	0.91 (0.78, 1.06)	0.93 (0.80, 1.08)	0.99 (0.85, 1.15)	1.00 (0.84, 1.19)
Migration between ages 18 and 24				
Males	0.92 (0.84, 1.00)	0.91 (0.83, 1.00)	0.92 (0.84, 1.00)	0.94 (0.84, 1.05)
Females	0.76 (0.65, 0.90)	0.78 (0.67, 0.91)	0.83 (0.70, 0.97)	0.84 (0.65, 1.09)
Migration after age 24				
Males	1.04 (0.97, 1.11)	1.02 (0.95, 1.09)	1.03 (0.96, 1.11)	1.03 (0.91, 1.17)
Females	0.88 (0.80, 0.96)	0.87 (0.81, 0.97)	0.92 (0.85, 1.00)	1.05 (0.95, 1.16)

[a] Model 1 is adjusted for age at measure, sex, and birth year.
[b] Model 2 is adjusted for age, sex, birth year, and parental education.
[c] Model 3 is adjusted for age, sex, birth year, parental education, and IPTW weights (stabilized and trimmed).

Figure 1. Ideal conceptual diagram with time-constant confounders

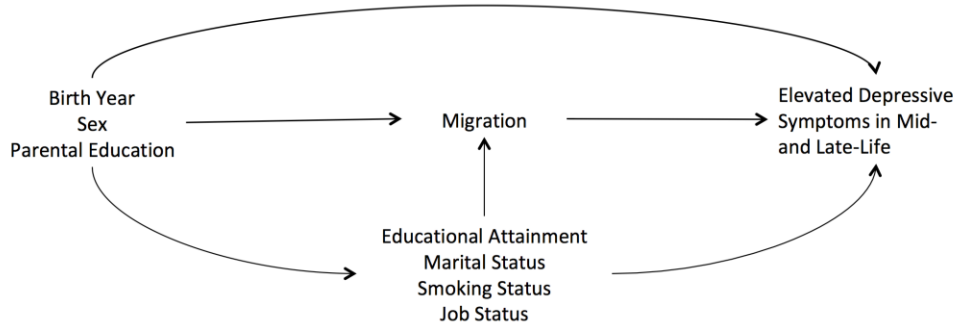
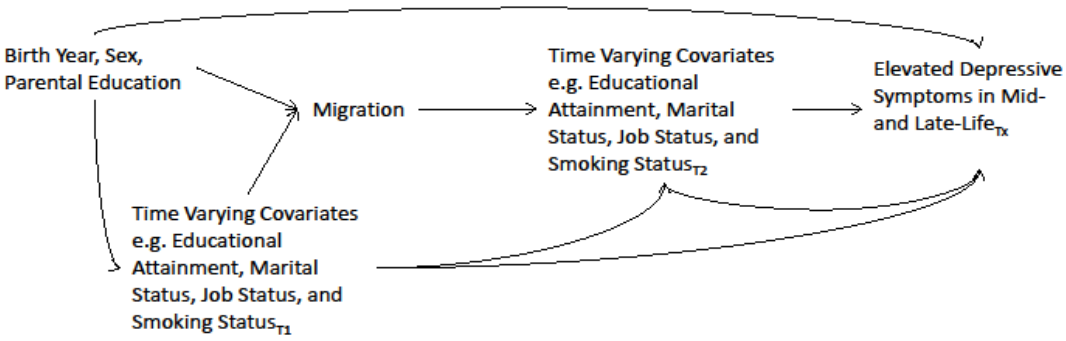


Figure 2. Conceptual diagram displaying likely time-varying confounder-mediators



Note: age at evaluation is not represented in the figure, but we adjust for age at evaluation in our models given that the distribution of this covariate may be associated both with the exposure and outcome, although conceptually it is not an exposure-outcome confounder.

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Appendix

eTable 1. Baseline characteristics of the sample by migration status

	Return Migrants to Mexico (n=1,541)	Migrants to the U.S. (n=898)	Non-Migrant in Mexico (n=16,087)
Baseline age (years), mean (SD)	63.0 (9.4)	58.6 (8.1)	61.1 (8.9)
Birth year, mean (SD)	1941 (12.1)	1947 (11.3)	1943 (11.3)
Female, %	19.1%	53.0%	56.6%
Age first married, mean (SD)	24.5 (8.1)	24.2 (7.2)	24.0 (10.4)
Mother's education, %			
Missing/Do not know	11.9	11.6	12.2
None	46.3	32.2	46.9
Some primary	29.3	26.5	27.9
Primary	7.4	16.7	9.0
More than primary	5.1	13.0	4.1
Father's education, %			
Missing/Do not know	13.4	19.6	14.6
None	42.6	30.5	39.7
Some primary	30.5	21.7	29.6
Primary	7.7	14.7	9.6
More than primary	5.7	13.5	6.5
Own education (years), mean (SD)	6.3 (4.4)	5.1 (4.7)	5.3 (4.7)
Ever Smoke, %	71.9	47.8	47.6
Age first smoked, mean (SD)	19.1 (9.2)	20.5 (11.6)	20.6 (9.7)
Ever worked, %	95.1	86.9	79.0
Age at first job, mean (SD)	14.5 (7.8)	45.4 (9.0)	17.3 (10.1)
Baseline Depressive Symptoms, %			
0	31.4	41.3	29.2
1	20.7	16.8	18.1
2	12.9	11.6	13.0
3	9.0	6.2	9.6
4	8.8	6.1	9.3
5	7.6	6.8	8.3
6	5.2	5.5	6.9
7	4.4	5.7	5.5
Baseline Elevated Depressive (>4/7) Symptoms, %	17.2	17.9	20.7