Title: Remittances and Immigrant Health
Authors: Erika Arenas, Jenjira Yahirun, Graciela Teruel
For: Submission to PAA 2017, April 27-29, 2017 Chicago, IL
September 29, 2016

1. Introduction

The central bank of Mexico recently reported that Mexicans abroad sent nearly $24.8 billion home in 2015, overtaking oil revenues for the first time as a source of foreign income (Associated Press, 2016). Social scientists have examined the role that remittances play on the health and well-being of family members who remain behind, with the majority of studies finding positive associations between remittances received and the health of kin (Anton, 2010; Frank et al., 2009; Lindstrom and Munoz-Franco, 2006). Yet, far less is known about the link between remittances and those who send them. Recent research finds mixed evidence, with some studies suggesting a positive association between migrants who maintain strong cross-border ties and their own mental and physical health (Akay et al., 2014; Alcantara, Chen & Alegria, 2015; Alcantara, Molina & Kawachi, 2015; Torres, 2013), whereas others find the opposite (Ambugo & Yahirun, 2016; Murphy & Mahalingham, 2004) and still others find no effect (Shooshtari et al., 2014). The mixed findings may be due to: 1) dependence on cross-sectional data, 2) inconsistent use of measures (e.g. some use remittances, some use investments at home, others use visits home), and/or 3) different data samples in the sending countries. This study builds on prior research to ask how sending remittances affects the mental health and perception of overall health of Mexican immigrants living in the United States.

2. Background.

Previous research suggests several mechanisms that may explain the association between remittances and immigrants' health outcomes.

On the one hand, the literature suggests the existence of a positive association between remittances and health outcomes that can be explained, partially, by the idea that migrants send money to care for family members without any specific expectation of return (Carling, 2008; Rapoport and Docquier, 2006; Stark, 1995); consequently, migrants experience the "warm-glow" that accompanies altruistic behavior. Altruistic giving allows migrants to feel they are instrumentally engaged in the lives of friends and family members left behind (Akuei, 2005), and provide them with a sense of "mattering" and social engagement that may be associated with a lower risk of mental illness/psychological distress (Taylor and Turner, 2001). Ethnographic evidence shows that mothers who remit do so as demonstration of love and that sending remittances is associated with pride for producing "quality human beings" (Contreras and Griffith, 2012). Moreover, by sending money migrants may feel less guilty of being away by knowing that family and friends are cared for in the home country (McKay, 2007). A recent study of internal migrants in China found that those who remitted reported lower levels of mental stress than those who did not (Akay et al., 2014).

On the other hand, remittances may signal filial obligations that may reflect an implicit contract between migrants and their families that stay behind (Hoddinott, 1994), as well as payments of initial investments that helped individuals to migrate in the first place (Massey, 1990). Even though evidence from China shows that both motivations for sending remittances (i.e. altruism and contractual obligations) may lead to improvements on immigrants well-being (Akay et al., 2014), sending money to family and friends may exact a toll on immigrants, who are exposed to multiple challenges in their new environments, and for whom remitting may heighten the risk of depression by generating financial strain. Ethnographic accounts cite the extreme financial hardships that immigrants face in order to meet obligations to send money to family members (Abrego, 2009; Schmalzbauer, 2005). Research on mental health outcomes suggest that economic hardship is a negative stressor that exists separately from actual economic or financial status (Kahn and Pearlin, 2006). Economic hardship may reflect demands associated with the number of dependents, a specific standard of living, financial aspirations, and access to other assets. Sending money to friends and family may be especially hard for newly-arrived immigrants who are trying to advance in an unfamiliar context. Additionally, cultural obligations to remit may create pressure when there is little sensitivity to immigrant's social and economic conditions in the host country (Menjívar, 2000). For some, not being able to control monies that are remitted may lead to feelings of being exploited by loved ones **(**Akuei, 2005). Finally, obligations to remit may divert time, energy, and financial resources away from educational and career goals, or delays in starting a family (Murphy & Mahalingham, 2004). One recent study in the U.S. among recent documented migrants found a negative association between sending remittances and the likelihood of experiencing depression or sadness (Ambugo & Yahirun, 2016).

The link between remittances and health likely varies across immigrants of different backgrounds. Previous research has shown moderation by immigrant gender and economic status. As Abrego (2009) points out, several scholars have found that although the amount of remittances that men send abroad tend to be larger than the amount send by women, women remit more frequently than men. Whereas the amount of money sent is largely due to structural differences (immigrant men tend to earn more than women), the frequency of remitting is much more closely linked to norms about care and obligations to those in the sending country. For this reason, one might suspect that the link between sending remittances and health outcomes is stronger for women than for men. For example, Afulani et al. (2016) find a significant negative correlation between chronic disease status and remitting for women, but not men. In terms of economic status, immigrants with low levels of income feel the highest burden of remitting as the relative costs of doing so are greater for them than for those with higher income, this is then reflected in a higher probability of experiencing mental health distress (Ambugo and Yahirun, 2013).

Finally, the effect of sending remittances likely differs according to the purpose of those monies. If there is stress associated with the financial support of specific family members – children, for example (see Abrego, 2009), then this may explain why remitting is generally stressful. Afulani et al. (2016) find that when they include indicators for those who remained in the home country (e.g., spouses and offspring), the negative association between sending remittances and chronic disease of the immigrant was no longer statistically significant. The authors argue that sending remittances home as an obligation to family left behind is a source of

social stress for immigrants, especially women, in the case of sub-Saharan African women in France.

3. Objective

In this paper, we extend prior research and ask the following questions:

a. What is the effect of sending remittances on the mental health and perception of overall health of Mexican-origin immigrants living in the United States?
b. Does this effect differ by gender and socioeconomic status of immigrants?
c. How does the potential recipient of remittances (child, spouse, parent) mediate the link between health outcomes and money sent?
d. Does documentation status at entry mediate this effect?

4. Data

We will use unique and novel panel data from the Mexican Family Life Survey (MxFLS). These data is multidimensional and representative of the Mexican population at the national, urban/rural, and regional level. The MxFLS baseline survey included 8,400 households and 35,000 respondents and was conducted in 2002 (MxFLS-1) and the second wave (MxFLS-2) was conducted between 2005 and 2006. Re-contact rates at the household level in MxFLS-2 were about 90%.

One unique feature of the MxFLS is that it follows and interviews panel respondents, even if they move to the United States. Between 2002 and 2005, 854 respondents (about 2.5% of the sample) migrated to the United States. Re-interview rates of Mexican migrants to the United States in both waves were about 91%.

There are several advantages of using the MxFLS to investigate the impact of sending remittances on health outcomes. First, MxFLS collects a wide array of health measures; it collects subjective measures of health such as self-rated health, and self-rated health compared to others with the same age and sex. Second, MxFLS collects a mental health module that includes 21 questions assessing several aspects of individuals' psychological health and well-being. The first 20 questions can be used to construct the Calderón depression index (Calderón 1997), which was designed and tested by researchers at the Mexican Institute of Psychiatry to diagnose depressive symptoms and have proven reliable in the past. Third, the MxFLS includes rich data on remittances; specifically, MxFLS-2 includes information of who send remittances and the amount remitted. Fourth, given the multidimensional nature of the survey, the MxFLS allows controlling for other factors that may confound the effect of sending remittances on health outcomes, such as factors that reflect the context of reception experienced by the migrant upon arrival to the United States (e.g. employment status, documentation status, type of occupation and social support available). Fifth, the MxFLS allows linking information of migrants with their household of origin in the sending community, which allows us to investigate whether the configuration of the household in Mexico (e.g. number of children, age of the children) and the potential recipient of the remittances have an influence on the health on the migrant. Finally, given the longitudinal nature of the survey, the MxFLS will allow us to control for health conditions before migration.

5. Methods

We will use ordinal logit, logit and OLS regression models to estimate the association between remittances and health outcomes. We will examine several health outcomes measured during the third wave of MxFLS: self-rated health, relative rated health (compared to other of the same age and sex), and mental health outcomes associated with depression (e.g. wish to die, sadness). Our main covariate will be a dummy variable indicating whether immigrants sent remittances within the last 12 months before MxFLS-2 was conducted. However, examining the relationship between health outcomes and remitting behavior is not sufficient to understand if remitting behavior has an impact on health outcomes or if causality is reversed. Although in our study we will not be able to determine causality, the availability of data on several confounding factors measured upon arrival to the Unites States will allow a better assessment of the association between health and remittances, and will minimize omitted variable bias. Our models will include controls that reflect immigrants' context in the United States upon arrival (e.g. employment status, type of occupation, documentation at entry, family structure) and in Mexico (e.g. family structure, who is the recipient of the money, household income) as well as controls for health information before migration.

6. References

Abrego, L. (2009). Economic well-being in Salvadoran transnational families: How gender affects remittance practices. *Journal of Marriage and Family* 71(4): 1070–1085. doi:10.1111/j.1741-3737.2009.00653.x.

Akay, A., Giulietti, C., Robalino, Juan D., Zimmermann, K. (2014) Remittances and Well-Being amog Rural-to-Urban Migrants in China. *Review of Economics of the Household*. 12(3) 517-546

Akuei S. R. (2005) Remittances as Unforeseen Burdens: The Livelihoods and Social Obligations of Sudanese Refugees. Global Migration Perspectives. Geneva, Global Commission on International Migration.

Alcántara, Carmela; Chen, Chih-Nan; Alegría, Margarita (2015). *Transnational ties and past-year major depressive episodes among Latino immigrants*. Cultural Diversity and Ethnic Minority Psychology, Vol 21(3), Jul 2015, 486-495. http://dx.doi.org/10.1037/a0037540

Alcántara, Carmela, Kristine M. Molina, and Ichiro Kawachi. (2015) Transnational, Social, and Neighborhood Ties and Smoking Among Latino Immigrants: Does Gender Matter? *American Journal of Public Health* Vol. 105, No. 4, pp. 741-749.

Afulani, Patience, A., Jacqueline M. Torres, May Sudhinaraset, Joseph Asunka (2016) Transnational ties and the health of sub-Saharan African migrants: The moderating role of gender and family separation, *Social Science & Medicine*, Volume 168, Pages 63–71

Ambugo, A. Eliva. (2016). Remittances and risk of major depressive episode and sadness among new legal immigrants to the United States. *Demographic Research* 34(8) 243-258

Anton, J. (2010). The impact of remittances on nutritional status of children in Ecuador. *International Migration Review* 44(2): 269–299. doi:10.1111/j.17 47-7379.2010.00806.x.

Associated Press (2016) http://www.forbes.com/forbes/welcome/

Carling, Jørgen. (2008). The determinants of migrant remittances. *Oxford Review of Economic Policy* 24 (3): 581-598 doi:10.1093/oxrep/grn022

Contreras, R. and Griffith, D. (2012), Managing Migration, Managing Motherhood: The Moral Economy of Gendered Migration. Int Migr, 50: 51–66. doi:10.1111/j.1468-2435.2012.00771.x

Frank, R., Palma-Coca, O., Rauda-Esquivel, J., Olaiz-Fernandez, G., Diaz- Olavarrieta, C., and Acevedo-Garcia, D. (2009). The relationship between remittances and health care provision in Mexico. *American Journal of Public Health* 99(7): 1227–1231. doi:10.2105/AJPH.2008.144980.

Hoddinott, J. (1994). A Model of Migration and Remittances Applied to Western Kenya. *Oxford Economic Papers*, *46*(3), new series, 459-476. Retrieved from http://www.jstor.org/stable/2663576

Kahn, J.R. and Pearlin, L.I. (2006). Financial strain over the life course and health among older adults. *Journal of Health and Social Behavior* 47(1): 17–31. doi:10.1177/002214650604700102.

Lindstrom, D.P. and Munoz-Franco, E. (2006). Migration and maternal health services utilization in rural Guatemala. *Social Science & Medicine* 63(3): 706–721. doi:10.1016/j.socscimed.2006.02.007.

McKay, D. (2007) "'Sending Dollars Shows Feeling'. Emotions and Economies in Filipino Migration." Mobilities 2(2):175–194

Menjívar, C. (2000). *Fragmented ties: Salvadoran immigrant networks in America*. Berkeley: University of California Press.

Murphy Eleanor J, Mahalingam Ramaswami. Transnational Ties and Mental Health of Caribbean Immigrants. Journal of Immigrant Health. 2004;6(4):167–178. doi: 10.1023/B:JOIH.0000045254.71331.5e. [PubMed] [Cross Ref]

Rapoport, H. and Docquier F. (2006) The Economics of Migrants' Remittances. Chapter 17 in Handbook of the Economics of Giving, Altruism, and Reciprocity, Vol. 1, pp. 1135-1198

Schmalzbauer, L. (2005). *Striving and surviving: A daily life analysis of Honduran transnational*

families. New York: Routledge.

Stark, O. (1995). Altruism and beyond: An economic analysis of transfers and exchanges within families and groups. Cambridge, MA: Cambridge University Press.

Shooshtari, S., Harvey, C.D.H., Ferguson, E. et al. J Fam Econ Iss (2014) 35: 95. doi:10.1007/s10834-013-9356-1

Taylor, J., & Turner, R. (2001). A Longitudinal Study of the Role and Significance of Mattering to Others for Depressive Symptoms. *Journal of Health and Social Behavior, 42*(3), 310-325. Retrieved from http://www.jstor.org/stable/3090217

Torres, J. M., & Wallace, S. P. (2013). Migration Circumstances, Psychological Distress, and Self-Rated Physical Health for Latino Immigrants in the United States. *American Journal of Public Health, 103*(9), 1619–1627. http://doi.org/10.2105/AJPH.2012.301195