Gendered Migrants Networks and the Health of the Left Behind: Evidence from Indonesia

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Introduction

In less developed countries, rural-urban migrants have contributed to socioeconomic exchange and support networks between migrants' origin and the economic development of rural origin communities (Stark, 1991; Massey, 1990; Massey et al., 1999; Taylor and Wyatt, 1996; Taylor et al., 1999; Gardner, 1995; Portes, 1996; Lee, 2000). In particular, migrants affect the development of rural communities through wealth transfers from migrants, consumption and investment enable by such transfers, the local availability of socially productive and reproductive labor, and the multiplier effects of these factors over time (Krieken, 2001). According to World Bank estimates for 2005, the 200 million people who lived outside their country of origin sent $167 billion in remittances to their home countries, twice as much as in 1995 and twice the total annual flow of development aid (World Bank 2006).

The United Nations and the Copenhagen Consensus Project emphasize the potential development benefits of migration for sending countries, yet few micro-level studies have addressed the consequences of migration for the left behind (Martin 2004). Fewer still identify potential positive and negative consequences of migration; contextual features of the migration-health relationship, or the impact of migration on health disparity. The migration-health relationship is mediated through social networks which Bond et al. (1999: 1601) define as "patterns of relations such as friendship, kinship, and neighborliness that cut across bounded, institutionalized groups, and may be distinct from institutional structures."

This study will address these gaps in the existing literature in the context of the differential impact of migrant sons and daughters on parental health in Indonesia. We focus on kin networks in particular in order to build upon two strains of past research on migrant social networks. First, cross-cultural, comparative studies of interhousehold and intergenerational financial transfers have found that preexisting differences in gender and kinship preferences as they relate to coresidence and non-material support are also reflected in financial transfer arrangements, even among migrants (Kim 200x; Frankenberg and Kuhn 2004, 2005). We extend these results to the study of the impact of migrant social networks on health. The project from which this paper emerges involves comparative analysis of differences in the importance of migration, the role of migrant financial transfers, and son-daughter differentials in the financial support and health of elders living in Bangladesh and Indonesia. The purpose of this paper is to determine, for the case of Indonesia, the effects of sons' versus daughters' migration on their elder rural parents self-rated health. The study is informed by ongoing migration-health research by some of the co-authors in Bangladesh and by others across a number of settings (Kanaiaupuni et al. 1999; Frank and Hummer 2002; Roy and Nangia 2003; Kanaiapuni et al. 2005) and by the enhanced status and familial support roles placed on women in much of Indonesia.

Background

The literature on migrant networks (for a review, see Menjivar, 2000; Litwin, 1998) finds that differences in gender, age, and class standing (measured as income, assets, and education) affect *who* participates in which migrant networks (women, men, the young, the old); *how* particular individuals participate in various networks (with what benefits and burdens); and *what kinds of health resources* are made available through specific networks and forms of network participation. Health status among rural non-migrants will thus depend on specific attributes of the person

him/herself (sex, age, income, prior health status), characteristics of the person's social network contacts (network size and composition in terms of age, sex, SES), and the specific ways in which the person interacts with the networks (network activities and density).

Recent research has begun to analyze the consequences of migration not merely on the health of migrants, but on the health and well-being of family members left behind in the migrant's origin household or village (Kuhn 2003; Beard and Kunharibowo, 2001; Frankenberg et al., 2002; Keasberry, 2001; Knodel and Debavalya, 1997; Ofstedal et al., 1999; Rahman, 1999, 2000). Specifically, a growing body of research challenges previous approaches to migration that posited increased opportunity for the movers and heightened risk for those left behind, particularly women and the elderly (Chant, 1992; Frankenberg and Kuhn, 2003; Lee and Mason, 2000; Rahman, 1999).

Emerging at the same time, studies have illustrated how inequalities are perpetuated through migrant networks as they contribute to the exacerbation of income and workload inequalities across genders (Silvey and Elmhirst, 2003; Menjivar, 2000; Curran and Saguy, 2001). Yet the specific and complex ways in which migrant network inequalities contribute to differences in rural individuals' health status have yet to be thoroughly examined. Even less attention has been paid to the ways in which the *differences in migrant network compositions and different positions of individuals within these networks* may be reflected in unequal health status among those individuals who have not migrated.

Gender and socioeconomic differences in networks are crucial for understanding the processes at the center of this research. Generally, in most less developed regions of the world, women and girls have lower incomes than men and less control over household resources (XXX). In addition, women and men are positioned differently within social networks (Menjivar,

2000). But it is not clear how the differences in women's and men's incomes may be structured through network differences, nor do we know whether community-scale differences in development indicators may be in part a result of those network differentials in aggregate. We expect, however, that some development inequalities at the individual, household, and community scales can be explained by the gender and SES hierarchies structuring migrants' and non-migrants' social networks. The purpose of this paper then is to explore from a gendered perspective the relationships between migration, social networks and health.

Research in Bangladesh has found that individuals who are left behind by adult migrant children do face risks stemming from the loss of personal support and care (Kuhn, 2003). The impact of migration on rural elderly populations in Indonesia, however, remains inconclusive. Studies have found that while typically daughters provide co-resident support, increased levels of women's migration have not been determined to deconstruct the traditional family structure (Keasberry 2001). It appears however, that certain groups, particularly elderly women with few children, are the most vulnerable to the "costs" associated with migration (Keasberry 2001). Conversely, Relatives of skilled migrants, and particularly those with resources on which the migrants may depend, are likely to observe health benefits associated with remittances provided by the out-migrants (Rahman, 1999). These health benefits may then lead to advantages for the household as a whole inasmuch as they lighten the household's burden of disease. On the other hand, remittances are unlikely to be distributed evenly within or across households, and thus the benefits and burdens of specific migrants' networks and positions within networks will vary (Curran and Saguy, 2001). In particular, previous studies have identified the influence of gender and age hierarchies within households on the sex selectivity of out-migrants (Lawson, 1998 for a review) and on the consequences of migration more generally (Willis and Yeoh, 2000).

Context: Social Networks and Health in Indonesia

This research is important for several concrete reasons. In Indonesia the absolute numbers and relative proportions of elderly among the total population are rising as mortality rates decline, placing an increasing health burden on family members and health care systems (Wirakartakusumah et. al., 1997; Chang, 1992; Rahman, 2000; Kabir et al. 1998). Second, processes of migration and urbanization continue to advance in Indonesia. Since the mid 1960's Indonesia has experienced a steady improvement in the economy and standard of living. The country has seen a GDP growth from about $100 US dollars to $800 by the year 1995 (Grant 1996: 110) and foreign investment increased dramatically from $8.1 billion in 1993 to$23.7 billion in 1994, and continued to grow to rapidly (Brown 2003).[1] The steady rise in GDP and foreign investment, in addition to the declining fertility rate (2.87 in 1993), allowed Indonesia to keep unemployment numbers down and led to an increase in industrial economic opportunities in addition to traditional agrarian forms. These increases in industrial economic opportunities have led to increases in migration within the country, as well as establishing itself Indonesia as "one of the worlds largest suppliers of international labor migrants [whose] numbers appear to be increasing" (Hugo 2005). Rough estimates of Indonesian overseas contract workers in 200 hover around 2,139,883 individuals, with roughly half residing in Malaysia. Furthermore, official immigration numbers appear to be dominated by women who tend to find employment in both legal and illegal job sectors leading to what Hugo and others have called the "feminization of migration" (Hugo 2004, 91).

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[1] Although the country underwent a major financial crisis in the late 1990's, because this study focuses on the time period just before the crisis, there will be limited discussion regarding the effects of the crisis on health and migration, nor does the paper discuss GOP change beyond the scope of the study.

Some research has emphasized the role of power relations and hierarchies *within* households in determining whether men or women, young or old, household members receive better nutrition, have greater access to financial resources, or exhibit higher mortality rates (Adnan, 1993; Cain, 1991; Evans, 1990; Kabeer, 1994; Rudkin, 1993). Findings from Indonesia indicate that the disparity between men and women's control of economic resources can be attributed to gender inequalities throughout the life course related to educational, job, and skill related opportunities (Rudkin, 1993).

Other scholarship has highlighted the *inter-relatedness* of household structures, hierarchies, and social networks in producing particular patterns of health status within and between households (Rahman, 2000 on Bangladesh; Frankenberg et al.,1999 on Indonesia). Examples from Indonesia show that the decision to co-reside is influenced largely by opportunities to co-reside such as the number of living children and/or total number of siblings (1999). This paper aims to build on these integrative studies to provide specific, empirical analysis to further measure and understand these relationships.

Non-migrants constitute a particularly vulnerable population, routinely facing higher rates of poverty and disease than the majority of the migrant population (Hugo et al., 1987; Hermalin, 1997). Because kin networks remain the only safety net available for most rural people in both countries, it is imperative that their operation and effectiveness in the provision of health resources—and ultimately health status—be better understood.

Data and Methods

Using data from the three waves of the Indonesia Family Life Survey, an ongoing panel survey that gathers data on the individual, household, and community level, we predict key measures of adult health status in terms of total migrant children, the gender of migrant children, and financial support received from migrant children. We take advantage of the rich socioeconomic, health, and community resource data from 3 IFLS rounds to predict current health status in terms of both past and present migration behavior, while controlling for prior health status, prior socioeconomic status, and community level fixed effects. Future work will look specifically at multilevel interactions between community factors and family migration behavior,

The Indonesian Family Life Survey (IFLS) is an ongoing longitudinal survey conducted by RAND Labor and Population Program in collaboration with Lembaga Demografi, University of Indonesia, and Population Research Center, University of Gadjah Mada. IFLS data offer two distinct advantages for causal analysis. First, three rounds of detailed, comparable survey data, with unparalleled tracking and follow-up, permit appropriate chronological linkage of SES, health status, migration, and survival. In total, 91% of IFLS1 households are included in all three survey rounds, a higher reinterview rate than in many comparable studies conducted in the US and Europe (Strauss *et al.* 2004a). Second, nationally representative coverage of this highly diverse society facilitates comparison across a number of migrant-sending regions. The sample is representative of 83% of Indonesia's population, including the regions where Silvey has conducted much of her qualitative fieldwork: West Java and South Sulawesi. Rich community- and facility-level data for all sampling units capture this diversity across a range of indicators. This study will employ data from three public-use rounds of the study.[2]

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[2] **IFLS Wave 1 (IFLS1)** was conducted in 1993/94 (Frankenberg and Karoly 1995). A random sample of 7,224 households was drawn from 321 randomly selected enumeration areas in 13 of Indonesia's 27 provinces. Individual interviews were conducted with 2,328 men and 2,770 women over age 50. **IFLS Wave 2 (IFLS2)**, conducted in 1997 (Frankenberg and Thomas 2000),

The analysis focuses on the health of about 2,000 adults age 50+ who responded to all three rounds of IFLS. IFLS provides data on the respondent's health status at the time of survey based on general health self-reports, self-reported physical disability, and objective tests of physical function (see below for greater detail).

We employ **longitudinal models of health**, replicating Kuhn's ongoing analysis of survival for Bangladesh (Kuhn 2005a). Our primary methodological concerns mirror those raised by Goldman (2001) in discussing research on social disparities in health—specifically, reverse causation, unobserved heterogeneity, and spurious correlation (Beckett 2000; Goldman 2001; NRC 2002). Multiple rounds of data allow us to correctly identify the chronological order of events of interest (prior health, SES, current migration episodes, and subsequent survival), thereby reducing the likelihood of reverse causation.

Our longitudinal fixed effects models of health status predict the change in each health measure between each IFLS round in terms of children's migration status in the current and previous survey round, with controls for respondent and household demographic and socioeconomic characteristics, and the respondent's prior health status. For instance, we estimate longitudinal models of the change from good to poor health status between rounds:

$$Log(\frac{H_{2b,w}}{H_{2:s}}) = \beta_0 + \beta_1 Child_1 + \beta_2 Migchild_{1,2} + \beta_3 \mathrm{Re}sp_1 + \beta_4 Wealth_1 + \beta_5 Health_1 + \varepsilon$$

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located and reinterviewed 95% of IFLS1 households (including 95% of the original respondents over age 50), plus 878 additional "split-off" households resulting from out-migrants from original households. IFLS2 added objective health status measures, including anthropometric measures, medical exams (blood pressure, pulse, hemoglobin level, lung capacity), and physical activity assessments. **IFLS Wave 3 (IFLS3),** conducted in the second half of 2000 (Strauss *et al.* 2004a), located and reinterviewed 95% of IFLS1/2 households plus 2,646 split-off households. IFLS3 also added additional anthropometric measures.

Longitudinal models include statistical controls for the respondent's own age, sex, marital status, educational attainment and employment status. By matching spouses to one another, their age, education, employment status and coresidence are also included. Detailed household economic modules provide controls for household land holdings and income, which are crucial given the strong relationship between household assets and migration, particularly to overseas destinations (Kuhn 1999). Observations are weighted to reflect the true probability of community and household selection (Rahman *et al*. 1999).

The study takes advantage of detailed **health status measures** as measures of current and past health status. Without controls for prior health, a positive association between children's migration and survival may merely reflect spurious correlations between migration and health, a crucial concern in disentangling the complex role of migration as both cause and consequence of health and human capital.

Three types of **self-reported health measures** are employed. **Self-reported assessments of general health** and well-being ask respondents to report whether their health is excellent, very good, good, fair, or poor. Global self rated health is a widely used measurement of health status, not only because of the relative ease of its collection, but also because of its reliability for predicting mortality as well as its high levels of correlation with physician assessed morbidity (Ferraro & Farmer, 1999, Idler & Benyamini 1997). Furthermore, research suggests that measures of self-rated health have the potential to impact future health behaviors, reflect resources available to the individual, and accurately asses current health as well as health trajectories (Idler & Benyamini, 1997) that extend to developing countries, specifically Indonesia (Frankenberg & Jones, 2004). Self rated health then not only captures the physical health status of an individual, but when regressed upon objective health measures, provides insight into the subjective evaluations of health status.

Residual significance found in variables unrelated to objective health measurements then can be considered indicators of "health pessimism" or "health optimism" (Ferraro, 1993).

Self-reported Activities of Daily Living (ADLs) ask respondents to score their level of difficulty with typical activities: lifting heavy objects; walking various distances; bending, kneeling, or stooping; eating; bathing; and using the toilet. **Self-reported disease** measures ask respondents to report the presence of various chronic and acute disease conditions as well as severity, duration, and the use of specific treatments or medications. Self-reported general health and ADL assessments have been tested for validity and used widely (both in the US and internationally) in studying the health of the elderly (Andrews and Hennink 1992; Beckett *et al.* 2000, 2002; Seeman *et al.* 1994). More recently, ADLs have been utilized effectively in investigating the health of prime aged adults in Indonesia and Bangladesh (Frankenberg and Jones 2004; Kuhn *et al.* 2006).

IFLS kinship and pregnancy modules contain rich data on multiple dimensions of the migration process. They provide data on basic demographic and educational characteristics, the child's location and duration of stay, and financial exchange and personal communication with the child. Models include as independent variables measures of the aggregate characteristics of migrant children; measures of the impact of non-migrant children on proximity effects, and controls for the sib-group characteristics of all children of the respondent.[3]

Preliminary Findings and Future Directions

3 Our models will therefore estimate the effects, for example, of total number of international migrant sons while controlling for the total number of children or, if more appropriate, total number of sons. As a result, our international migrant son effect would then capture the effect of a change in the proportion of sons living abroad, not the total number.

Preliminary results from the three waves of the IFLS survey suggest that contrary to Bangladesh, the effect of sons' and daughters' migration differentially affects the health status of elderly populations in migrant sending regions. In contrast to past research in Bangladesh, where only sons' migration had an effect on parental health, both sons and daughters matter in Bangladesh. Migrant daughters appear to play a more important role in parental health. Moreover, in contrast to a context highly dependent on out-migrant labor as a source of remittance income, effects of migrant children on Indonesian elders' health are not universally positive. Sons' geographical location appears to have an effect on parents' objective health evaluations, but no significant effect on subjective evaluations of health. Daughters located within the province are associated with health optimism, while daughters outside of the province are associated with health pessimism.

Preliminary models include cross-sectional fixed effects analysis to control for endogeneity that may result from the contextual environment of the village in which the elderly kin reside. Additionally we have used lagged longitudinal regression models to assess how the impact on the geographical location of children in previous years affects current health status using self reported health, measures of activities of daily living, as well as measures of acute morbidities as dependent variables. Initial results from these statistical models suggest that the effect of migrant sons on health status differs from that of migrant daughters.

These findings support the hypothesis that the effects of migration on elderly kin in the villages of origin are influenced and shaped by discrete gender categories. The analysis illustrate that the relationships between migration and self-rated are mediated by daughters' geographical location.

Future directions of the analysis include using propensity scores address causality in the model to as well as to rule out possible sources of endogeneity that may result from differential socio-economic status as well as social network ties. Furthermore, we also intend on aggregating

health status to the community level to examine the effects of migration on elderly populations that reside within the same community.