Family Size and Old Age Well-Being: An Exploration of the Fertility Transition in Mexico

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Introduction

It is now well-established that Mexico is undergoing epidemiological and demographic transitions, in which several dominant forces are occurring. First, under the epidemiological transition, chronic conditions have gained importance as main causes of mortality and illness, while infectious diseases are losing relative ground. Second, under the demographic transition, lower mortality and fertility patterns were reached rapidly over the last 50 and 30 years of the 20th century, respectively (Pérez-Brignoli 2010). This combination of transitions gave rise to a high speed of population aging. However, the social and political context within which this aging process is occurring is still under-developed. Institutional support systems are lacking or scarce and financial markets are largely not available for the majority of people (Wong and Palloni 2009).

In this context, the extended family – defined vertically or horizontally – is the central institution by which well-being of older adults has been traditionally secured. The family members make investments in human capital (such as health and education) and social capital (such as support) for the well-being of its members, young and old, for a variety of reasons and subject to a variety of constraints (Becker 1993; Lee and Mason 2011). Intra-family support can flow from adult children to older parents or from older parents to children and grand-children, for example. Indeed the flow of support is dynamic and takes multiple forms. Over time, support may flow in any direction and may respond to temporary needs such as health shocks or high rates of unemployment in a region (Biddlecom, Chayovan, and Ofstedal 2002).

In Mexico, Wong and Higgins (2007) reported that older individuals are more likely to start receiving economic help and more likely to stop giving it in response to financial conditions of those involved. However, this is not the same finding for non-economic help (e.g., providing help doing chores or transportation), which seems to respond more to health shocks. In this case, older individuals who were not receiving help had higher chances of start receiving non-economic support if they were sick. In addition, older adults who have more living children also have a higher probability of receiving both economic and non-economic help.

Another transformation has been undergoing in countries that are aging rapidly, whereas the traditional order in which elderly well-being rests on the younger generations (Martin 1990) is being gradually subverted by shifts in norms regulating living arrangements and by rapid fertility declines (Bongaarts and Zimmer 2002). Older adults normally live with a spouse and/or with an adult child. In countries like Mexico, older adults tend to live with adult children because coresidence is mutually beneficial. The former receive health and financial support while the latter receive help in household-related activities (De Vos 1990).

As successive generations of adults have fewer and fewer children in a context like Mexico, with low institutional support and in a somewhat traditional environment of prevailing support from children to elderly parents, one key question regarding the demographic transition is whether the generalized fertility decline has resulted in a significant and noticeable change in the well-being of older adults.

Family planning and contraceptive use began in Mexico in 1959. In the early 1960s, Mexico increased the promotion of family planning and the control of fertility rates. Further, between 1972 and 1976 Mexico liberalized laws banning the promotion and commercialization of contraceptives and the Family Planning Commission was also established. In 1977, Mexico promoted the First National Family Planning Program with 5-yr. goals trying to encourage couples to have fewer kids with the slogan "*La familia pequeña vive mejor*" (Tuirán, Partida, Mojarro, and Zúñiga 2002). This has created two separate demographic transitions because educated females living in urbanized cities began experiencing changes in their childbearing decisions during the late 1960s while the rest of the female population experienced these changes after the planning programs were already in-place around 15 or 20 years later (Juárez, Singh, García, and Díaz-Olavarrieta 2009). In Mexico, fertility rates started to decrease with females born between 1937 and 1941. After laws and regulations were implemented, fertility rates experienced a sharper decline affecting females born between 1940 and 1950 thus creating a cohort effect among Mexican females (Zavala, Forthcoming).

Research on fertility levels and old-age well-being has been focused on developed countries like the United States and in Western Europe. This paper contributes to this research gap by analyzing how different generations have been affected by changes in fertility rates in a developing country like Mexico. Sociological, psychological, and economic analyses suggest

that fertility and well-being vary by population subgroups and by the different stages of the life cycle (Margolis and Myrskylä 2011). Having a high number of living children might be related to positive and negative effects for parents in old age. First, positive, as more adult children represent a higher number of opportunities for assistance to the elderly parents by providing care, both in financial and non-financial terms. Second, there might be negative effects of a high number of children if stress associated with raising a large family results in reduced coping mechanisms for both the parents and the children over their life cycle (Nomaguchi and Milkie 2003). In addition, women who had a large number of pregnancies and births may suffer negative health consequences in old age. Overall, however, the result may be ambiguous. We empirically test our hypothesis that with declining fertility rates, younger cohorts will experience lower levels of well-being by having fewer children who could potentially provide economic and non-economic support in old age. The full paper presents our conceptual framework and empirical hypotheses in more detail.

Data and Methods

Sample

Data are from the Mexican Health and Aging Study (MHAS), a prospective panel investigation of health and aging in Mexicans born in 1951 or earlier. Participants were first interviewed in 2001 in a stratified sample representative of the national population. The MHAS was designed to be comparable to the U.S. Health and Retirement Study (HRS). The baseline data, consisting of 15,186 in-person interviews, were collected in 2001 with follow-ups in 2003 (with a 93% response rate) and in 2012 (with an 88% response rate). Information from a knowledgeable proxy was obtained for individuals who were unable to complete the interview themselves because of infirmity or cognitive incapacity. The database includes information on the participant's economic situation, education, living arrangements, marital status, and social network, as well as self-reports of functional capacity and chronic conditions. The MHAS also provides detailed health characteristics such as limitations with basic and instrumental activities of daily living, cognition, depression, and mobility (Mexican Health and Aging Study 2013).

Our analysis begins with a sample of 14,872 respondents aged 50 or older in 2012. We exclude 1,895 respondents who have incomplete information. The sample for our descriptive

analysis included 12,977 respondents. We divide our sample into cohorts based on previous research demonstrating that fertility began decreasing among cohorts born after 1937. Respondents who are 75 or older in 2012 will have been born during or before 1937, therefore, we split our sample into two cohorts (one aged 50-74 and one aged 75 or older) to examine differences across cohorts with different levels of fertility.

Measures

Our outcome measures are grouped in three dimensions of well-being --health, economic and psychosocial. Health well-being is measured as self-reported health, and a count of chronic conditions (self-reported hypertension, diabetes, strokes, heart attacks, cancer and pulmonary conditions). Economic well-being is captured through consumer durables (the number of the following items available in the household of residence: radio, television, refrigerator, washer, telephone, water heater, internet and computer) and having any form of health insurance. Psychosocial well-being is operationalized through a 9-item Center for Epidemiologic Studies – Depression (CES-D) scale. In addition, we use two life satisfaction indicators, whereas respondents are asked whether they agree with the following statements: "If I were to born again, I would change almost nothing of my life" and "The conditions of my life are excellent."

Preliminary Results

Table #1 shows important differences were observed across birth cohorts. Respondents in the older birth cohort were less likely to report having two or fewer living children and more likely to report having five or more living children. For the health dimension of well-being, the older birth cohort was more likely to rate their health as worse and have higher counts of chronic conditions. Differences in self-rated health and chronic condition count are likely an effect of age rather than cohort. For the economic dimension of well-being, the older cohort reported fewer consumer durables and similar levels of health care access. Birth cohorts seemed to differ in the psychosocial dimension of well-being with respondents in the older cohort being slightly more likely to agree that they would change little in their life if they could be born again and that conditions in life are excellent. However, the older birth cohort reported higher levels of depressive symptoms.

[TABLE 1 AROUND HERE]

Future Research

The complete version of the paper will use hierarchical non-linear regression to account for household clustering and to determine the association between a respondent's number of living children and factors within the dimensions of well-being (health, economic and psychosocial). Moreover, the analysis will explore how the associations between number of living children and well-being may differ across birth cohorts. Additionally, the full paper will take advantage of the longitudinal design of the MHAS by utilizing data from the previous two waves and eleven years of follow up to determine how the number of living children may predict changes in well-being over time.

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Table 1 – Distribution of Characteristics of Older Mexican Adults by Age Group Age 50+ from the Mexican Health and Aging Study (MHAS) Wave 3 (2012) (n=12,977)

	50-74 Years of Age	75+ Years of Age	Chi-Square Test

	n	Percent	n	Percent	X^2	p_a
Sample Size	10,821		2,156			
Living Children					464.88	***
0-2	2,655	24.5%	342	15.9%		
3-4	3,951	36.5%	433	20.1%		
5+	4,215	39.0%	1,381	64.1%		
Sex					9.83	**
Female	6,263	57.9%	1,169	54.2%		
Educational Achievement					703.2	***
None (0 Years)	1,500	13.9%	685	31.8%		
Incomplete Elementary (1-5 Years)	3,132	28.9%	842	39.1%		
Complete Elementary (6 Years)	2,429	22.5%	341	15.8%		
Beyond Elementary (7+ Years)	3,760	34.8%	288	13.4%		
Self-Rated Health					109.33	***
Excellent/Very Good	787	7.3%	122	5.7%		
Good	3,262	30.2%	550	25.5%		
Fair	5,530	51.1%	1,068	49.5%		
Poor	1,242	11.5%	416	19.3%		
Chronic Condition Count[b]					47.59	***
None	4,858	44.9%	794	36.8%		
One Condition	3,786	35.0%	866	40.2%		
Two or More Conditions	2,177	20.1%	496	23.0%		
Health Care Access					0.89	
Any Coverage	9,513	87.9%	1,911	88.6%		
Consumer Durables[c]					189.85	***
0-3 Consumer Durables	1,939	17.9%	565	26.2%		
4-6 Consumer Durables	5,477	50.6%	1,208	56.0%		
7 or More Consumer Durables	3,405	31.5%	383	17.8%		
Depressive Symptoms[d]					44.64	***
High (5+)	3,335	30.8%	823	38.2%		
Wouldn't Change Anything[e]					10.12	**
Agree	7,017	64.9%	1,475	68.4%		
Conditions in Life are Excellent					6.95	**
Agree	6,558	60.6%	1,372	63.6%		

Note: p_a =probability of type 1 error, * denotes p<0.05, ** p<0.01, *** p<0.001. [b] Chronic condition count is self-reported hypertension, diabetes, strokes, heart attacks, cancer and pulmonary conditions. [c] Consumer durables are self-reported ownership of: radio, television, refrigerator, washer, telephone, water heater, internet and computer. [d] Depressive symptoms: 9-item Center for Epidemiologic Studies-Depression scale. [e] Measured with "If I were to born again, I would change almost nothing of my life."
Source: Authors' calculations with information from the Mexican Health and Aging Study (2013).