Differences in the Availability of Informal and Formal Safety Net Resources for Mexican Adults Aged 50 to 59 in 2001 and 2012

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Introduction

Life expectancy at birth in Mexico has increased from 37 years in 1930 (1) to 75 years in 2013 (2). For context, it took the U.S. over 120 years for life expectancy at birth to increase by 40 years (3). Thus, Mexico has had very little time to prepare for an aging society. Mexico does not have a national social security system (4) or a federal long-term care system (5). Prior to the implementation of an income based public health insurance program in 2002 (Seguro Popular), only individuals employed in the formal sector had healthcare coverage (6).

Consequently, many aging parents will rely on informal resources to meet financial, housing, and healthcare needs. Hispanic cultural norms emphasize that adult children will be the primary care providers to their parents (7). The feasibility of this arrangement is threatened by changing cultural values (8), adult children moving away to pursue employment opportunities (9, 10), rising employment among women (11), and reduced fertility (12).

The underdeveloped infrastructure for an aging population in Mexico makes it necessary to determine the availability of informal safety net resources and if resource availability has changed over time. We use data from the Mexican Health and Aging Study (MHAS) to determine how the availability of these resources for Mexican adults aged 50 to 59 have changed from 2001 to 2012. We hypothesize that cultural changes that have resulted in reduced fertility, adult children being more likely to live outside the home, and less social support for will cause the availability of informal support resources to be lower in 2012 than 2001. Conversely, we hypothesize that government policies for healthcare coverage will contribute to an increase in available formal support resources in 2012 compared to 2001.

Methods

The MHAS is a nationally representative, prospective study of adults aged ≥50 years (13). A total of 15,373 adults aged ≥50 years and their spouse regardless of age were recruited to the study in 2001. Follow-up waves were completed in 2003, 2012, and 2015. In 2012, a new sample of 5,754 individuals aged 50-59 and their spouses regardless of age were added to the sample. We used the 2001 and 2012 waves to create two independent cohorts of adults age 50-59 years. The 2001 and 2012 cohorts included 5,511 and 3,615 participants, respectively.

Outcome Measures

Informal safety net resources. Measures for informal safety net resources included: (1) number of living children; (2) number of residents currently living in the household; (3) having one or more co-resident children who are ≥15 years; (4) having relatives that live in the neighborhood (yes/no); (5) having close friends in the neighborhood (yes/no); and (6) having neighbors or friends who you can count on for help with daily activities (yes/no). Participants were also asked if any of their children have ever lived outside of the home and if yes, where these children are currently living in relation to the participant. We used this information to create two variables that indicated where the closest and farthest non-resident child live in relation to the participant (same house/neighborhood; same city; other city in Mexico; U.S.).

Formal safety net resources. Measures for formal safety net resources included: (1) having government health insurance; (2) private health insurance; (3) employer health insurance; (4) receiving or expecting to receive a pension; and (5) receiving financial assistance from a government program. All measures were dichotomized as yes/no.

Demographic Measures

Measures for demographic characteristics included age, gender, education, and living in an urban locality (population ≥100,000 people).

Statistical analysis

Independent sample t-tests and chi-square tests were used to identify cohort differences in the demographic characteristics and resource availability.

Preliminary Results

The 2001 cohort had a mean age of 54.4 years and 55.5% were female whereas the 2012 cohort had a mean age of 54.3 years and 56.2% were female (Table 1). The 2012 cohort completed an average of 7.7 years of education and 48.1% completed $\geq$7 years of education compared to 5.6 years and 30.0%, respectively for the 2001 cohort ($p < 0.01$). Sixty-nine percent of participants in the 2001 cohort lived in an urban locality compared to 61.6% of the 2012 cohort ($p < 0.01$).

In general, the 2012 cohort had fewer informal safety net resources (Table 2), but more formal safety net resources (Table 3) than the 2001 cohort. On average, the 2001 cohort had 1.3 more living children ($p < 0.01$) and nearly 2 more household residents than the 2012 cohort ($p < 0.01$). Approximately 75% of participants in 2001 were co-residing with an adult child compared to 69.4% in 2012 ($p < 0.01$). In 2001, the farthest non-resident child was living in the same city for 29.9% of participants compared to 35.9% in 2012. Conversely, the farthest non-resident child was living in the U.S. for nearly 25% of participants in 2001 compared to 15.2% in 2012. The percentage of participants who reported having close friends in the neighborhood was 79.8% in 2001 and 63.8% in 2012 ($p < 0.01$). Similarly, the percentage of participants who reported having friends they could count on for help was significantly higher in 2001 (66.4%) than 2012 (53.3%) ($p < 0.01$).

The availability of all formal safety net resources, with the exception of receiving or expecting to receive a pension was significantly higher in 2012 compared to 2001 (Table 3). The greatest difference was for government health insurance in which 57.9% of participants in 2001 reported having government health insurance compared to 82.3% in 2012 ($p < 0.01$).

Future Research

The full paper will use multivariable regression models to determine if the cohort differences in resource availability persist after controlling for demographic characteristics. We will also use data from the Directory of Public Health Sector Facilities that has been linked with

the MHAS survey. These data include community-level information on the number of health facilities (hospitals, doctor offices) and the number of facility resources (beds, operating rooms, physicians, and nurses). Data for 2002 is linked with the MHAS survey and we are in the process of linking the most currently available data for 2012.

Table 1: Cohort Differences in Demographic Characteristics

	Cohort		
Measure	2001	2012	*p*-value
Age, mean (SD)	54.4 (2.8)	54.3 (2.8)	0.02
Female gender, n (%)	3056 (55.5)	2029 (56.2)	0.52
Education, mean (SD)	5.6 (4.6)	7.7 (4.9)	< 0.01
Educational attainment, n (%)			< 0.01
0-years education	889 (16.1)	278 (7.7)	
1-6 years	2966 (53.9)	1594 (44.2)	
7+ years	1650 (30.0)	1738 (48.1)	
More urban locality	3802 (69.0)	2227 (61.6)	< 0.01

Table 2: Cohort Differences in the Availability of Informal Safety Net Resources

	Cohort		
Measure	2001	2012	*p*-value
# living children, mean (SD)	4.8 (2.8)	3.5 (2.1)	< 0.01
# household residents, mean (SD)	4.4 (2.2)	2.5 (1.7)	< 0.01
Co-resident child ≥15 years old, n (%)	4177 (75.9)	2507 (69.4)	< 0.01
Has child who lives in same city, n (%)	5141 (93.4)	3282 (90.9)	< 0.01
*Closest non-resident child, n (%)			0.02
Same house/neighborhood	2387 (54.0)	1374 (51.3)	
Same city	1419 (32.1)	870 (32.5)	
Another city in Mexico	448 (10.1)	333 (12.4)	
U.S. / other country	165 (3.7)	99 (3.7)	
*Farthest nonresident child, n (%)			< 0.01
Same house/neighborhood	854 (19.3)	569 (21.3)	
Same city	1322 (29.9)	961 (35.9)	
Another city in Mexico	1196 (27.0)	739 (27.6)	
U.S. / other country	1047 (23.7)	407 (15.2)	
Has family in neighborhood, n (%)	3683 (66.9)	2359 (65.3)	0.12
Has friends in neighborhood, n (%)	4393 (79.8)	2304 (63.8)	< 0.01
Has friends you can count on, n (%)	3654 (66.4)	1928 (53.4)	< 0.01

*Based on 7095 participants (2001 cohort n=4419; 2012 cohort: n=2676)

Table 3: Cohort Differences in the Availability of Formal Safety Net Resources

	Cohort		
Measure	2001	2012	*p*-value
Government health insurance	3189 (57.9)	2971 (82.3)	< 0.01
Private health insurance	134 (2.4)	119 (3.3)	0.01
Employer health insurance	2382 (43.3)	1719 (47.6)	< 0.01
Receive or expect a pension	2089 (38.0)	1438 (39.8)	0.07
Support from public program	597 (10.8)	448 (12.4)	0.02

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