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Comparative Study of Informal Health Care Networks and Elderly Health Status in Argentina and Cuba

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**COMPARATIVE STUDY OF INFORMAL HEALTH CARE
NETWORKS AND ELDERLY HEALTH STATUS IN
ARGENTINA AND CUBA**

by

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Honors Thesis Submitted to the Honors Council

For Honors in the Economics Department

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Approved by:

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Abstract

Objectives: The objective of this study is to evaluate the impact of informal care support networks on the health status, life satisfaction, happiness and anxiety of elderly individuals in Argentina and Cuba. Recent economic changes, demographic changes, the structure of families and changes in women's labor participation have affected the availability of informal care. Additionally, the growing number of elderly as a percentage of total population has significant implications for both formal and informal care in Argentina and Cuba. **Methods:** The SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000 was used as the data source. The survey has a sample of 10,656 individuals aged 60 years and older residing in private households occupied by permanent dwellers in 7 cities in the Latin American and Caribbean region. My study will focus on the Buenos Aires and Havana samples in which there were 1043 individuals and 1905 individuals respectively. General sampling design was used to establish comparability between countries. Individuals requiring assistance are surveyed on their source of help and the relative impact of informal versus paid help is measured for this group. Other measures of social support (number of living children, companionship and number of individuals living in the same dwelling) are used to measure networks for the full sample. Multivariate probit regression analyses were run separately for Cuba and for Argentina to evaluate the marginal impacts of the types of social support on health status, life satisfaction, happiness and anxiety. **Results:** For Argentina, almost all of the family help variables positively impact good health. Getting help from most other members of the family negatively impacts satisfaction with life. Happiness is affected differently by each of the family help variables but community

support increases the likelihood of being happy. Although none of the family or community help variables show statistical significance, most negatively affect anxiety levels. In Cuba, all of the social support variables have a positive marginal impact on the health status of the elderly. In this case, some of the family and community help variables have a negative marginal impact on life satisfaction; however, it appears that having those closest to the elderly, children, spouse, or other family, positively impacts life satisfaction. Most of the support variables negatively impact happiness. Receiving help from a child, spouse or parent is associated with a marginal increase in anxiety, whereas receiving help from a grandchild, another family member or a friend actually reduces anxiety. **Discussion:** The study highlights the necessity for enhancing the coordination of various care networks in order to provide adequate care and reduce the burdens of old age on the individual, family and society and the need for consistent support for the caregivers. More qualitative work should be done to identify how support is given and what comprises the support. The constant change and advancement of the world, and the growth of the Latin American and Caribbean region, suggests that more updates studies need to be done.

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I. Introduction

This study explores familial and friend support networks and living arrangements among elderly individuals in Latin America and the Caribbean and the impact that this type of support has on the health of the elderly individuals in Cuba and Argentina. Using data from the Survey on Health and Well-Being of Elders (SABE) from 1999-2000, I explore which type of support has a larger impact on overall health. I also measure differences in unmet needs for certain health services. This topic is particularly interesting because it will help to uncover what policies are best for aiding in the healthcare of the elderly in aging population. Lastly, the investigation of this topic allows me to draw conclusions about the most effective means of social and public policy for the elderly community and provide me with information about the role of both informal provisions of support from family and friends, and formal provisions of support from the government.

My primary focus is on Argentina, using Buenos Aires as the sample city, and Cuba, using Havana as the sample city. Argentina is particularly interesting to me because of my abroad experience and homestay experience with an older Argentine woman who lived alone but depended upon her family for many healthcare needs, doctors' visits and general well-being. In Argentina, I experienced a different form of living than I am used to in the United States, where many older individuals or couples live in nursing homes or in assisted living facilities, rather than alone or with family. Both Argentina and Cuba have rapidly aging populations, lower GDP per capita than the industrialized world and vast inequalities present among its citizens. However, Argentina and Cuba have extremely different political, economic and cultural situations. Comparing

the two countries further allows me to compare correlations between health and the existence of support networks under different environments, as well as provide me with information to make more general claims that may be of use in the United States. The changing economic climate of the two countries coupled with labor patterns of women returning to work at rapid rates, a group of daughters or wives who have provided informal support in the past, indicates that policies cannot just rely on either the formal or informal sector but require a combination of the two sectors working together.

This paper will first give background on the difference in the economies and the health care systems in Argentina and Cuba and will show why it is interesting to study and compare these two countries. I will then discuss the health status of the elderly in each population as well as discuss the informal care networks and the role of family in each country. This section will then be followed by a description of the data and methods used. I will end by drawing conclusions about the study and the outcomes, and then I will attempt to make suggestions about effective health care policies for the elderly.

II. Background

Argentina and Cuba differ remarkably in their political atmosphere as well as many of their cultural practices. Additionally, the two countries have economic, geographic and population differences, but Argentina and Cuba have similar literacy rates: 98% in Argentina and 100% in Cuba (World Bank, 2008). They also have similar rates of aging populations.

Argentina

Demographics and Health Care

Life expectancy in Argentina is high for Latin American standards, at 76.95 years of age and the life expectancy of 73.71 years for males and 80.36 years for females (CIA World Fact Book, 2011.) Another way to describe demographics is the age structure of a country, and 10.8% of Argentina's population is 65 years or older (CIA World Fact Book, 2010.) Consequently, Argentina has a large percentage of citizens who are between the ages of 15-64, a group regarded as the capable caregivers: 63.5% of Argentines are 15-64 years old (CIA World Fact Book, 2010.) Thus, the age of the population has consequences on the provisions and accessibility of healthcare in the country. As of 2006, according to the World Health Organization, the Argentine government spends 10.1% of GDP on health, which figures out to \$1,665 (International \$) per capita

Although substantial resources are spent on health care, the health care system in Argentina is highly fragmented, consisting of three subsystems: publicly funded healthcare, social insurance funds and private healthcare. The publicly funded healthcare is decentralized and financing varies considerably among the different provinces in Argentina. While there are over 200 different social insurance funds (obras sociales), and although coverage is relatively high for Latin American standards, there is little regulation of the funds. To provide for the large and increasing elderly population, the Argentine state established the Programa de Atención Médica Integral (PAMI), or the Integral Health Care Program, which provides social services and health care to a large percentage of elderly in Argentina, a program similar to Medicare in the United States.

Geography

As the survey data is from the largest urban area in Argentina, the city of Buenos Aires, comparing the sample to the general population is useful. Argentina is an urbanized nation; geographic studies show that 92% of the Argentine population lives in urban areas (CIA World Factbook, 2010), so the sample used should reflect the urbanity of the country's population.

Economy and Politics

The age of neo-liberalism between 1991 and 1997 severely damaged Argentina's economy and caused the underemployment rate to reach 18% in Buenos Aires by 1995 (Fried and Gaydos, 2002 .) The expansion of the informal sector and the extreme disparity of wealth are also fixtures of Argentine life. Gasparini (2002) concluded that in the region of greater Buenos Aires the Gini coefficient, which is a measure of inequality within a nation, rose from 0.38 in 1980 to 0.53 in 2002. During the neoliberal crisis and economic restructuring, the Gini index fluctuated from a low of 40.0 in 1991 to a high of 47.4 in 1998 (Gasparini, 2002.) A higher Gini index indicates a more unequal income distribution within a country. Compared to the 1997 United States Gini index of 40.8, Argentina's 1998 Index showed vast inequality (CIA World Factbook, 2010). There is, therefore, a large disparity between high and low income sectors.

As a result of the recent economic changes and recent neo-liberal restructuring of the economy, women have begun to enter the workforce at increasingly high rates in response to the economic crisis. This trend is occurring at all levels of economic and marital status, displaying a change in the traditionally patriarchal family composition. In

2002, explain Adam and Trost (2005b), households with two primary providers grew to 45.3% from 25.5% of households, showing the importance of women as wage earners.

Accordingly, Argentina's recent economic and workforce changes represent a major change in the country that has put a great deal of strain on the family organization. The increasingly high unemployment rates, high poverty and extreme wealth gap that affects almost half of the population causes family to become a refuge for struggling members who live in impoverished or depressed conditions. However, as cited by Adam and Trost (2005b), the role of family and informal networks plays little or no role in the implementation of public policy.

Family and Informal Care Networks

Labor force participation rates for women, especially in Buenos Aires, have shown extreme growth over the past 20 years. Between the years 1991 and 1994, the labor force participation rate grew from 38% in 1991 to 46% in 1995, during the same time as the implementation of neoliberal policies and structural readjustment (Cerruti, 2000). Cerruti (2000) also identified that female heads of households are more likely to be in the labor force, due to the necessity to maintain a steady income.

Partly due to the increase of women entering the workforce in Argentina, a country in the past associated with large family size, the size of its family has decreased steadily over the past 50 years. In 1947, the average family size was 4.3 members and decreased to 3.86 members in 1980, and in 2001 it decreased to 3.57 persons per household. Consequently, single person households have increased over the past decade. In 2001 in Buenos Aires, single person households represented 26.2% of total

households, which, according to Adam and Trost (2005b), reflects the increase of the aging population in Buenos Aires, as the life expectancy differentials between men and women, and a societal shift in the acceptance of single person households. There was also an increase in the percent of households with only one parental figure. In 2001, in 84% of these cases the lone parent was the mother (Adam and Trost, 2005b).

Cuba

Demographics and Health Care

Similar to Argentina, Cuba has a rapidly aging population, which requires the state to establish efficient programs to ensure that the elderly obtain health services. Fried and Gayods (2002) examine world health systems and cite that Cuba has one of the oldest populations in the Caribbean with 12.7% of its citizens 60 years or older, an age category that is expected to make up 21% of Cuba by 2025. The life expectancy at birth in Cuba is 75.46 years for males and 80.08 years for females, and the projected life expectancy at birth of the total population is 77.7 years of age, one of the highest life expectancy rates in the Caribbean and world (CIA World Factbook, 2011). Consequently, 11.2% of the population is 65 years or older. Once again, a rapidly aging nation requires caregivers, and 70.4% of Cubans are 15-64 years old (CIA World Factbook, 2010). As reported by WHO (2008), Cuba spends 7.1% of GDP on health, which totals to \$363 (International \$) per capita, but, unlike Argentina, the Cuban government maintains full responsibility of the health care system, ensuring that everyone is provided for regardless of economic status, location, or race.

Since the 1959 Cuban Revolution, Cuba has achieved a system of universal and equitable healthcare. However, Cuba is currently limited by its poor relationship with United States hinders the importation of key medical resources. Additionally, the high rates of poverty and housing shortages create unsanitary living conditions for Cubans in general. Coupled with water supply shortages and poor trash collection, the conditions in Cuba are not equitable with good health.

Geography

Cuba is a less urbanized nation than Argentina, with an urbanized population rate of 72% (CIA World Fact Book, 2010). Therefore, as the study looks at a sample of the impact of social capital in two major cities of each country, Buenos Aires and Havana, there may be a better measure of the overall impact of social capital on health in Argentina than in Cuba, as the study may not translate to the remaining quarter of the Cuban population.

Economy and Politics

Cuba's economic and social history is different than that of Argentina, and, consequently, has a different impact on family organization. "The Special Period" is a period that characterized the economic crisis that began in the 1990s after the collapse of the Soviet Union and the tightening of the U.S. economic blockade. During this time, Cuba lost 85% of foreign trade and experienced a 51% decline in foreign aid (Fried and Gaydos, 2002). During the same period, the disparity in income grew to extremes, from a difference of 829 to 1 in 1995 to a difference of 12,500 to 1 in 2002, meaning that the

wealthiest members of the Cuban population earned \$12,500 for every \$1 that a poor Cuban earned (Mesa-Lago, 2002).

Concurrently, Cuba's GDP was greatly affected and, consequently, many components of the social safety network began to unravel. The decline in access to day-care, medicine, clothing, food, skilled labor and housing was difficult on families, causing the restricting and redefinition of the role of family networks.

Although one of Castro's first goals as president was to attempt to eliminate the housing crisis by cutting rents, lowering electricity rates and limiting evictions, and at the end of the 1960s, 40% of households were overcrowded with families living in four-generation households. Through various incentives and government expenditures, new homes were built; however, housing shortages and dangerous living conditions are still persistent in Cuba (Adams and Trost, 2005a). Coupled with high divorce rates, the ubiquitously deplorable housing conditions have been a constant in Cuban life for decades. Housing conditions are usually cramped and inadequate, but also provide more immediate in-home informal care for the elderly.

Family and Informal Care Networks

Members of the Cuban population recognized the need to introduce women into the workforce and encourage the equality of women in the workplace. The Federation of Cuban Women (FMC) was fundamental in spearheading the introduction of women to the labor market, and acknowledged that women had been oppressed by being confined to the home, excluded from a broader social life and remained economically dependent on their husbands. By 1969, women began to adopt professional careers and contribute to

the family as wage earners. Consequently, Cuba's socialist government recognized the need for women to be equal in the household, especially in a time of economic crisis, and therefore the 1975 Family Code was introduced to replace pre-revolutionary laws on marriage, divorce, adoption and alimony equality of women in marriage and also stipulated that men should share in housework and childcare.

As mentioned earlier, Cuba has one of the highest divorce rates in the world, particularly among younger couples, and in 1991, one in every 2.3 marriages ended in divorce. Consequently, the formation of female-headed households in Cuba has increased from 14% in 1953 to 28.1% in 1981, showing the greater role of women as both breadwinners and child-caregivers (Adams and Trost, 2005a).

These trends highlight how family networks are vital in ensuring the prosperity of its members. Although Cuba is socialist country, providing insurance for all of its citizens equally, there are obvious holes in governmental provisions where family is obligated to step in and help. The four-generational housing conditions are indicative of a housing shortage and of the role that family plays in such a crisis. However, as single mother-headed households are becoming more common, the availability of mothers to care for an extra member of the family while continuing to work and support her nuclear family is declining, leaving the elderly without a constant, or even consistent, care network. Thus, community and friend networks in Cuba, like those in Argentina, must assume the role as care-givers and sources of social stimulation.

General Trends and Implications for Argentina and Cuba

Argentina and Cuba have extremely different political, economic, health and cultural institutions. Argentina is a democratic state whereas Cuba is socialist. These

factors can lead to interesting comparisons about how the impact of living arrangements and social networks on health vary across countries with different systems and ideologies.

Both Cuba and Argentina maintain a large elderly population, with increasing rates of aging. Although based upon the aging population and Medicaid reform in the United States, Victor Fuchs (1999) identifies how health care expenditures on the elderly are significantly higher and faster growing than health care expenditures on any other population group. Therefore, the rapidly aging populations in both Argentina and Cuba may be a cause for concern for the health care budgets of each country as well as a strain on family resources.

Family is fundamental to both countries, although present day economic and social changes have put pressure on the traditional nuclear family. Adams and Trost (2005a, 2005b) argue that family structure is undeniably linked to the economic, sociodemographic and cultural changes present in a country or society, and can also be impacted by changes in formal governmental policies and provisions. Trends such as an increasing divorce rates, the aging of a population and economic changes all put pressure on the family as a unit, forcing members to change their traditional roles or routines. Under certain dynamic economic and social conditions, social networks and community members become increasingly important in filling in the role that family typically performs.

Economic crises have larger effects on a country's female population, because women are overrepresented among the world's poor (Jennissen and Lundy, 2001). As low wage earners and unpaid caretakers, women are part of both the formal and informal

work sector. Their responsibilities lie both with bringing in extra income and caring for the home, children, husbands and elders in the family. Therefore, when health care cost cutting practices are implemented, women are burdened with additional responsibilities as the informal caregivers of sick relatives.

The shifts in family composition, undoubtedly, will impact the type, frequency and availability of informal care networks for elderly. The demographic trend of increases in the percentage of women entering the labor force means that women are in the home much less during the day and have less time at their disposal to help their elderly relatives. Additionally, the need for women to enter the labor force indicates a necessity for another wage earner to supply sufficient income to the family, thus a possible indicator that families have less disposable income to use on caring for their elderly. The decrease in family size would also illustrate that fewer family members are available to supply care for elderly members. Thus, as changes in a country's demographic and economic trends burden families, it becomes increasingly more important for community and friend networks to fill in the gaps.

III. Literature Review

Researchers have found that informal care, which is defined as “unpaid long-term care usually provided by a relative or family member,” is fundamental to the healthcare of the elderly population (Anderson and Hussey 196, 2000). Elderly individuals are those most in need of long-term healthcare (LTC), which is the most costly form of health care when administered by hospitals. However, hospice and home health programs are significantly less costly than hospital or nursing home care. Additionally, research has

shown that home health care and hospice care can be substituted for with unpaid informal care, provided by family and friend networks. Among OECD nations, Yoo et al. (2004) showed that spousal support in the form of care reduce long term health care spending by \$29,000, and that formal and informal LTC are close substitutes for each other.

Family

According to Cantor (1989), for elderly individuals support from a spouse or a child is preferred as the cornerstone of the support system. Friends and neighbors compose the next preferred tier of support, while eventually government and other formal organizations are ordered last in the hierarchy.

Among the eight industrialized countries in their study, Anderson and Hussey (1997) found that 50% of the elderly in Japan lived with their adult children, and 10-20% of elderly in the other seven countries, Australia, Canada, France, Germany, New Zealand, the United Kingdom, and the United States, lived with an adult child. Van Houtven and Norton (2008) conducted a study of single elderly individuals and their children caregivers to study the impact of the hours of care given by children on the health of their parents. The study found that informal care reduces the need and use of home health care as well as reduces the likelihood of needing these types of care.

Steinbach (1992) argues that there is strong evidence that informal support networks and familial ties are the best prevention for elderly from being institutionalized and claims that lack of social ties are “associated with increased risk of mortality” (S183). Mortality risk is a factor of declining health, and this study in particular examines how the health status and mortality risk of individuals relates to their social networks,

living arrangements and kinship ties. A similar study conducted by Chow (1983) on the importance of family for the care of elderly in Hong Kong identifies the fundamental attributes of family in caring for elderly. The inadequacies of both community and public support and services would be amplified if it were not for the presence of family and social networks. Additionally, Chow (1983) found that although the family networks had begun to erode, family support and family care “remains the most significant factor in preventing an elderly person from living in poverty” (587). The adverse health effects of poverty are quite obvious, ranging from lack of adequate nutritional intake to inaccessibility of health services.

The presence of family support networks is a constant source of money and care, elements vital to lives of elderly; yet, Kliksberg (2004) identifies that in Latin America “many families are falling apart, unable to cope with the permanent lack of vital resources, prolonged periods of unemployment, and the constant threat of economic uncertainty” (654).

Social Networks

Schoenbach et al. (1986) found an elevated morbidity risk of elderly with the fewest social network ties, showing that social networks are indicative of the health of elderly individuals. Their study was based on the Berkman and Syme study of social networks and mortality in Alameda County, California, and their survey index was modeled after the Berkman Social Network Index, a measure developed to summarize the relationship between social support and mortality rate. Though Schoenbach et al. (1986) conducted their study using data from interviews administered in 1967-1969 and

separated the subjects based upon race, their study found interesting and useful results. The data showed that among white individuals, those who were not married had much higher risks of mortality.

Steinbach (1992) used the Longitudinal Study of Aging (LSOA). The LSOA study is a study modeled to determine the how changes in functional status and companionship affect long term institutionalization and death rates among the aging. The study then obtained the results that living alone increased the likelihood of institutionalization by 1.79 times compared to an elderly individual living with a spouse or others. The participation of elders in social activities decreased the likelihood of institutionalization by almost 50%. For his study on the predicted likelihood of mortality, Steinbach (1992) found that all three variables, which includes visits or talks with friends, social activities, and talking with friends or family, decreased the rate of mortality by almost 50% as well. Thus, more social interaction prolongs the lives of elderly by improving health and mental status, prevents their institutionalization, and reduces the need for public healthcare.

Echoing the importance of social support, Cantor and Little (1985) found that elderly most commonly associate their quality of life with their ability to remain independent in their community, therefore residing among family and friends. Community is a group of individuals with common interests, shared passions and usually consists of networks and family and friends, and thus is a key factor in improving and maintaining the quality of life for elderly people. Schoenbach et al. (1986) also showed that participation in church activities was a factor in lowering mortality risks. The resulting conclusions were most indicative for the elderly. The emphasis on the

importance of family and social networks for quality and length of life among elderly is evident from the previous research and demonstrates the need for the consistency of these networks in the lives of the aged.

These studies have focused on either industrialized nations or solely the United States, whereas my research will provide information about the impacts of informal care on less industrialized nations in the Latin American and Caribbean context. Latin America and the Caribbean are regions of increasing interest but most research has not yet provided much information for the region and has not compared the context of two different countries in Latin America or the Caribbean.

IV. Theory

Health is an output, much like any other good, that requires inputs to be produced. The inputs, or factors of health, are fundamental for producing health. Aside from the input of interest in the study, social capital, the main factors of production for health are age, wage rate, education, and income. Literature shows that all of these variables are important inputs to health, which guides the choice for control variables. Therefore, in my study, I will control for these variables in order to try and prevent a problem of omitted variable bias.

Grossman (1972) proposes that health can be defined as a capital stock, which depreciates with age but improves with increased inputs of education. He identifies that an individual is born with a certain level of health stock, but that this stock depreciates at an increasing rate, as one gets older. However, individuals can invest in their health stock, through education and personal choices. At some point, elderly individuals demand less health capital because the depreciation rates rises. Grossman proposes that any

individual chooses their optimal stock of health by equating the marginal efficiency of health capital to the cost of that health capital, which comes from the cost of investments. Death says Grossman, occurs when one's stock of health falls below a certain level, which Grossman calls the "death stock" (238).

Supported by Grossman (1972), age is the primary input affecting health. As a person ages, the depreciation rate of health is likely to increase which is why "the health of older people is likely to deteriorate faster than the health of younger people" (Folland, Goodman and Stano, 136). One's stock of health, as defined as all inputs to health, will decrease, as one gets older. Therefore, elderly adults demand more medical care than younger adults to maintain the same level of stock. Grossman (2000) conducted a study on health and human capital and found that age has a statistically significant impact on reducing health status, whereas it also has a statistically significant effect on increasing health care costs. The individuals in the sample have a range of ages between 60 and 80, and controlling for age variable in each sample will control for the possible differences in mean age between the samples.

Wage rate is also a significant input to the health function. A higher wage implies a higher level of health stock, meaning that if someone making more money gets sick, their opportunity cost of the days of work they lose is higher than someone who makes minimum wage but gets sick. Upon retirement, which implies older age, there is an expectation that an individual will reduce their stock of health because they no longer make income, and no longer require more 'healthy days.' Logically, it would seem realistic that having more income would be positively related to health. However, research has shown that being rich does not automatically lead to being healthy. The

relationship between income and health is unclear because of the many confounding variables that affect both health and income. Reverse causality may also bias the relationship between income and health. For example, higher income individuals have the luxury of buying more health by of taking time off, purchasing gym memberships and living in safer, less polluted areas. Conversely, healthier individuals can work more and make more income. The complexity of the income variable makes it hard to distinguish its actual impact on health status.

Income may provide money for the purchase of medical care and may be the reason for the positive association between health and income. With income, you can purchase private institutional care or, instead, one may prefer to substitute formal care with informal care. Yoo (2004) found that informal LTC is a clear substitute for institutional care, while formal home care as a complement to informal LTC. Therefore, lower income individuals may be provided with adequate and less expensive aid when receiving informal care from a relative or friend.

Education is often correlated to better health due to increased knowledge of the inputs to health. Two theories have related health and education. Grossman (1972) argues that higher education leads individuals to take better care of their health, and therefore, are healthier members of society, requiring less health care. Fuchs (1982) contends that individuals who want more years of schooling are individuals with lower discount rates, who look to the future for gains rather than the present.

Along with age, wage rate, income and education, family, friend and community networks are significant factors for improving and maintaining the health stock of the elderly.

V. Production Function of Health Status and Social Support

Friends, family and community are associated with the health of an individual. Increased social capital is positively correlated with health status, as social relationships may relieve stress, provide additional health information (about both preventive behaviors and general health tips) as well as cause individuals to reevaluate their risky behaviors, such as smoking and drinking. Folland et al. (2010), conclude that, “social capital improvements lead to health improvements (101).”

The production function demonstrates the relationship between various inputs and the maximum output that can be attained from the inputs used. However, this study will focus on the input of social support and health status as the output in order to establish a relationship between social networks and health status.

The concept of the production function (Figure 1) shows that as inputs increase, output also increases. However, as the contributions of additional support increase, the increase in health becomes smaller, causing the production function to eventually level off and may start to decrease, demonstrating the law of diminishing marginal returns. This law implies that after a certain level of social support, each additional (marginal) unit of social support produces less and less output, and may eventually turn negative.

Point A and point B demonstrate two possible points on the production function where Cuban or Argentina might lie. The study will also analyze where Cuba and Argentina lie on the production function. The slope of the production function measures the marginal benefit of each additional unit of input, in this case of social capital. The

analysis of the data will measure the slope, but we expect that the slope to be positive, indicating a positive relationship between social capital and health.

In this study, the production function of the relationship between social capital as the input and health as the output will be explored in depth, with a comparison between the production function of health for Cuba and the production function of health for Argentina. Is the production function for Argentina different than the curve for Cuba? Does social support have a different impact on health status in Cuba than on health status in Argentina?

Figure 1 assumes the same production function for Cuba and Argentina, whereas Figure 2 and Figure 3 show two different production function graphs, showing differences between Cuba and Argentina. In Figure 2, the impact of social support on improving health status in Argentina is greater than the impact of social support on health status in Cuba, as the total product curve for Argentina lies above the total product curve for Cuba. Figure 3 displays the opposite.

Another main goal of the paper will be to compare the differences in the size of the marginal impact of social capital on health in Argentina and the size of the marginal impact of social capital on health in Cuba.

The theoretical relationship between health and social support is a fundamental factor in evaluating production of health. There are many other additional factors that impact health status that relate to environmental, demographic, political and economic events. Originally, I was anticipating that social support would have a larger marginal impact on the Argentine sample due in large part to the unstable political and economic climate in the country. As discussed previously, Argentina's recent neoliberal reforms

and economic recession had devastating impacts on the entire Argentine population. Moreover, Argentina is historically a nation of vast income inequalities, thus the economic problems only added to the already present inequities. Therefore, intuitively, it would seem that family and friend networks would become increasingly important for both financial and psychological support. Additionally, the highly fragmented health care system present in Argentina may be a cause for the need of informal care, especially for the elderly.

In Cuba, as the social government guarantees health care and education, I expected family and friend support to have less of an impact on health status. Through various reforms, the socialist government provided schooling and health care for all citizens, as well as supported a more equal and progressive role in society for women. From this historical background, it would seem that life in Cuba is more certain and provided for by the government, whereas life in Argentina is more unstable and less is government provided, showing a stronger need for informal networks.

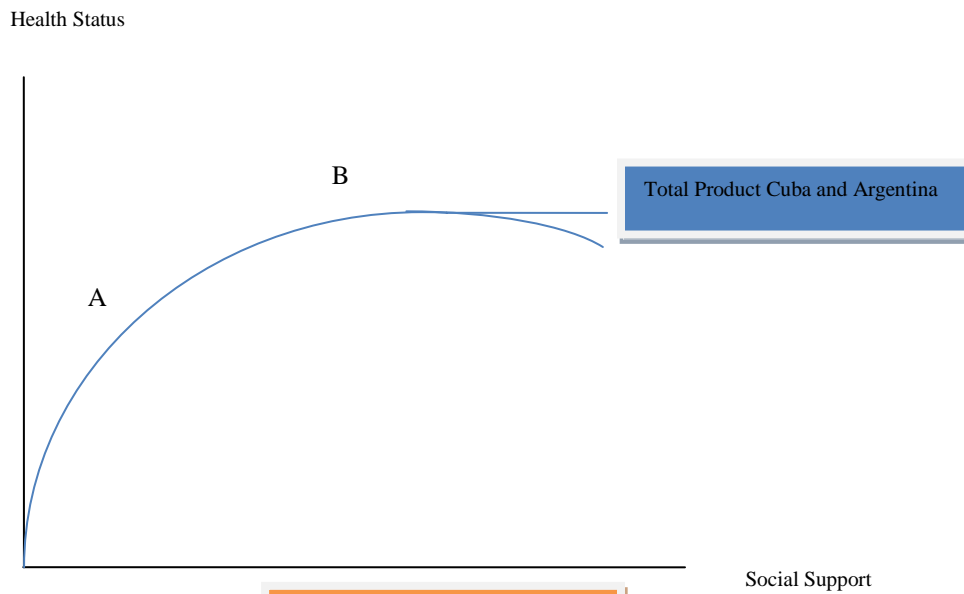


Figure 1: Total Product of Social Support

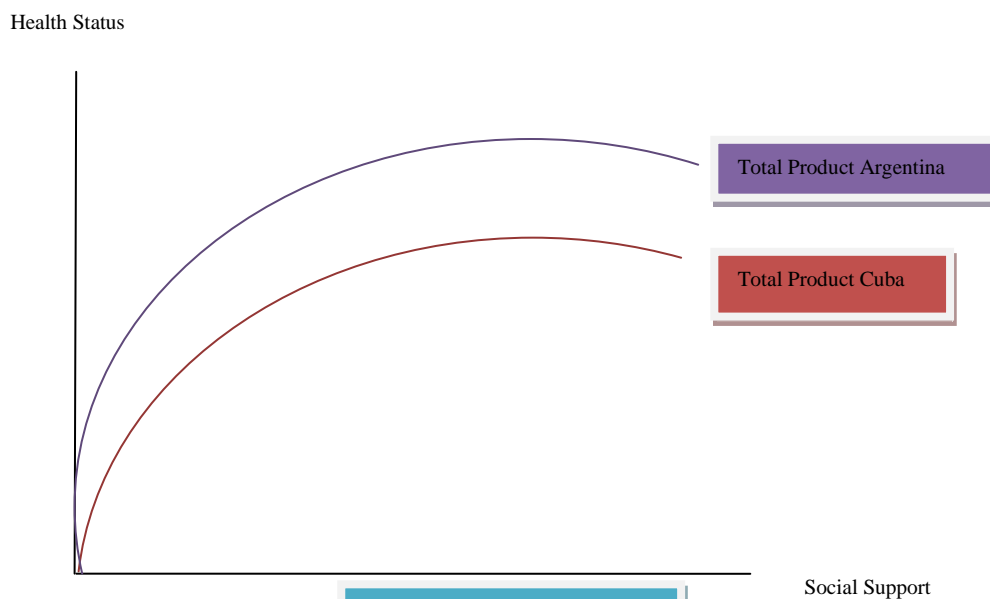


Figure 2: Total Product of Social Support

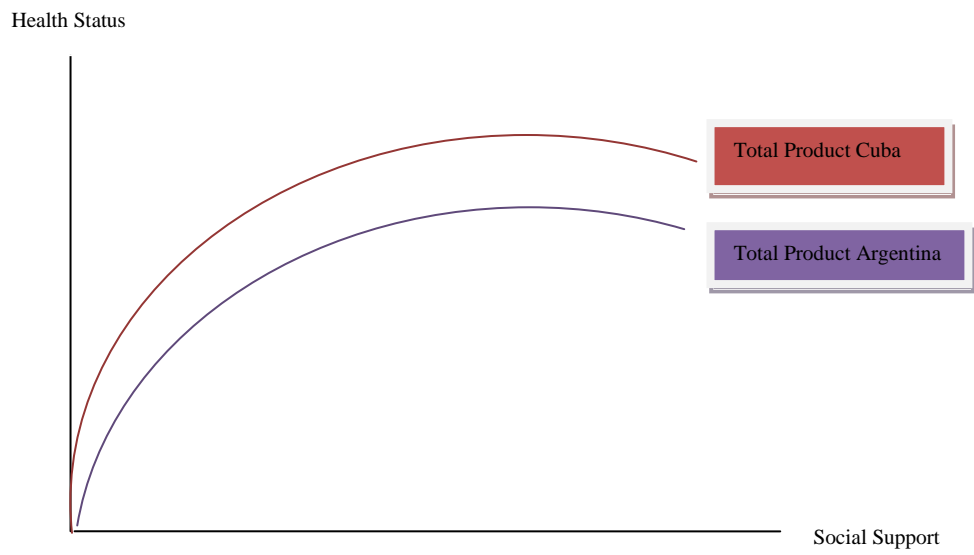


Figure 3: Total Product of Social Support

Marginal Product Curve

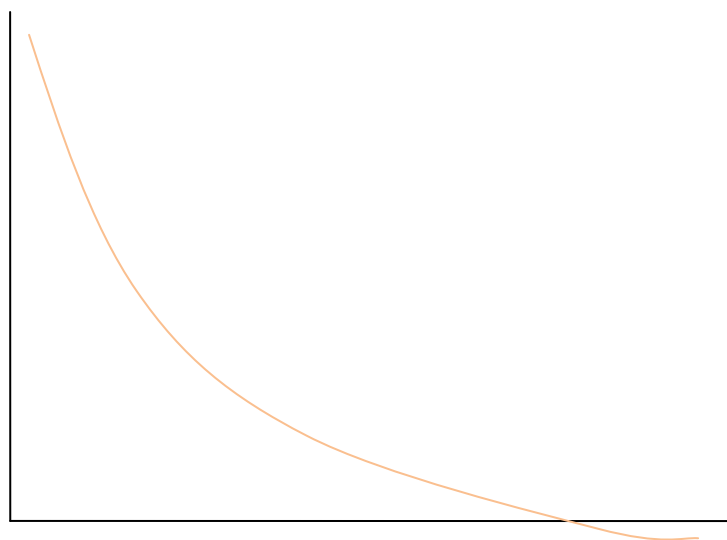


Figure 4: Diminishing Marginal Product of Health

VI. Data

The data source is the Survey on Health and Well-Being of Elders (SABE) from 1999-2000, which has a sample of 10,656 individuals aged 60 years and older residing in private households occupied by permanent dwellers in each of the cities of interest:

Buenos Aires (Argentina); Bridgetown (Barbados); Sao Paulo (Brazil), Santiago (Chile); Havana (Cuba); Mexico City (Mexico) and Montevideo (Uruguay). Because of the similarly aging populations and contrast in formal LTC support, I will focus on the Buenos Aires and Havana samples in which there were 1043 individuals in the Buenos Aires sample and 1905 individuals in the Havana sample.

The study used a general sampling design in order to establish comparability between countries. In both Argentina and Cuba, samples were chosen in three selection stages. The Primary Sampling Unit (PSU) selected a predetermined number of PSUs each selected with a probability proportion to the household distribution within each stratum. The sampling used for the PSU came from census radiuses, households, census sector, Basic Geostatistical Area (AGEB), and segments (blocks of 8 households). The second stage (SSU) and third stage (TSU) were selected with equal probabilities within each chosen PSU. The SSU was selected for from households, one individual per 60+ households, sections (about 5 households) or blocks. The TSU, when applicable, was selected for using one individual 60 years or older per household with equal probability of being selected.

Stratification of the clusters of each city varies because some studies were stratified based upon geography and socioeconomic conditions, whereas some were stratified solely based upon geography. In some cities, oversampling occurred.

In Buenos Aires, no oversampling occurred and stratification was based upon geographic and socioeconomic factors. There were two main regions: The City of Buenos Aires and Grand Buenos Aires with six socioeconomic strata in total. The sampling units were the census radius (300 households) for the PSU, households for the SSU and one individual 60+ per household for the TSU. The selection of the older person was a random selection of one person 60 years or older per household.

In Havana, oversampling did occur as one individual 80 years or older was always selected and if no person of that age bracket was available, a person 60 years or older was selected with equal probability. The stratification in Havana was only based on geographic region, with 15 municipalities in total. Basic Geostatistical Area (AGEB) (about 180 households) was used for the PSU sampling unit, sections (about 5 households) was used for the SSU sampling unit and one person 60+ living in each household was used for the TSU sampling unit. Random selection was also used.

The data collection was based upon interviews of target individuals in households but a variety of interview procedures occurred due to different funding and time variables in each city of interest.

Estimates of sampling error and design effects required knowledge of sampling weights, stratification and the nature of the PSUs and their clustering. As identified in the SABE study, “a limited but strategic set of characteristics and estimated associated standard errors and design effects was chosen for total samples as well as by age group

(all ages 60 and above and those over 75) and sex (all, males and females)” (SABE Report, 37. 2000) As the study did not over sample on the basis of social support, I do not need to worry about correcting the sampling design when I do my analysis.

VII. Descriptive Statistics: Sample

As mentioned before, Argentina and Cuba maintain many similarities as well as many differences in the composition of their populations. Therefore, I ran mean comparison tests for a variety of characteristics the two samples and the significance of the results will be reported below.

In the Cuban sample, the average age of the respondents was 71.97 years of age, and in Argentina the mean age was 70.74 years of age, a statistically significant difference. Note, however, that the sample is only of elderly individuals 60 years or older, which cannot be compared to the entire Cuban or Argentine population. Additionally, this may be due to the oversampling of those 80 years and older in Cuba. There is no separate data on the population statistics of just the elderly population in Argentina and Cuba. However, we can establish that the sample is reasonable, and some comparisons have been drawn.

The mean number of children may appear numerically similar between Cuba and Argentina: 2.94 in Cuba and 2.47 in Argentina, however the difference is statistically significant. As children are the primary care givers for their elderly parents, the two samples are relatively well matched, although one-half of a child on average may lead to more available and rested caregivers. Additionally, the 2-3 children that each elderly

individual has are an extra set of hands, compassion and care, encouraging informal care networks to exist.

In terms of education, the Cubans in the sample are more educated than the Argentines. The sample mean for Cuba is 7.58 years and 7.16 years for Argentina, but the difference is not statistically significant. The employment rates for each sample are statistically significantly different. 24.2% of the Argentine sample currently working and 18.5% of the Cuban sample currently working. Almost $\frac{1}{4}$ of the Argentine sample works, which can speak to the need to work, the younger average age of the sample, and the higher reported mean of good health status in the Argentine population.

Further emphasizing the discrepancy in health insurance between Argentina and Cuba, 17.3% of the respondents in the Argentine sample do not have any form of health insurance while health insurance in Cuba is universal.

Related to the study conducted by Van Houtven and Norton (2008), 17.3% of the respondents from the Cuban sample identified their main helper as one of their children, stepchildren or grandchildren, showing that a large percentage of help comes from the next generation. In the Argentine sample, 9.4% of the respondents identified their children or grandchildren as their primary helper, and 1.4% indicated their son or daughter-in-law to be their primary helper.

Evaluating the key dependent variables allows a comparison of the samples. One of the key dependent variables in the study, *health status*, is measured as equal to 1 if health status was indentified to be good, very good or excellent, and 0 otherwise. In Argentina, the sample mean was 0.65, indicating that 65% of the respondents rated their health as good, very good or excellent. The mean for the Cuban sample was significantly

lower at 0.43, showing that less than half of the respondents believed to be in good, very good or excellent health. The difference between the two samples is statistically significant. Interestingly, in the population data, Cubans live longer and have a higher sample mean age but believe they are in worse health. *Life satisfaction*, a second dependent variable in the study, is measured as equal to 1 if the respondent is satisfied with their life and equal to 0 if the respondent is not generally satisfied with their life. The means for Argentina and Cuba were different, 0.76 and 0.82 respectively, a statistically significant difference. Life satisfaction is usually an indication of overall wellbeing, and thus the numbers show that both groups of elders are living a pleasant and fulfilling life.

Similarly, a possible indication of satisfaction could be companionship, and the two countries show high rates of companionship. Companionship in this study is identified as living with another person, a spouse, child or another kin member. In the Argentine sample, the mean value was 0.73 and in Cuba the mean value was 0.89, a difference that is statistically significant. Cuba's value is a large majority, which undoubtedly relates to the housing shortage Cuba is currently experiencing. The variable measuring the number of family members living with the respondent is similar for Argentina and Cuba. Cuba's is slightly higher at 3.5 members in one house compared to Argentina's 2.4 members living in one house. The extra member for the Cuba sample may be related to the higher rate of help received in the Cuba sample.

The family help variables are generally very similar between the two countries, the only exception being the variable measuring help from a child, a statistically significant difference between the two countries. In Cuba, the child help variable has a

mean of 0.16, much higher than the value for Argentina of 0.04. This may also highlight the housing crisis, which causes many elders to be without homes and therefore in need of assistance from their family, namely their children. The community help variables are also similar between the two samples, and especially evident are the extremely high means for no community help received, at 0.92 for Argentina and 0.94 for Cuba. The only variable of any noticeable difference is the variable measuring help from a religious institution. In Cuba the mean is 0.019, slightly higher than the mean for Argentina of 0.011.

Lastly, the no help received are both very high, at 0.88 for the Argentina sample and 0.74 for the Cuban sample, reflecting the percentage of the sample that did not need help. Interesting is that every resident of Cuba has government provide health insurance, yet 26% of the sample received some kind of informal care. In Argentina, universal healthcare is not granted, but the rate of informal care is 12%, which is much lower.

Among those who need help, 62.7% of the Cuban sample receives help from their children whereas only 36.1% of the Argentine population receives help from their children, a difference that is statistically significant. Spousal care makes up 15.5% of help in the Cuban sample and 23.8% in the Argentine sample and the difference is also statistically significant. Grandchildren are the primary caregivers for 6.3% of the Cuban respondents and 13.9% of the Argentine sample, statistically significantly greater in Argentina. Siblings are not identified as a helper in Cuba but 4.9% of the Argentine sample receives help from a sibling. Lastly, parents make up 0.6% of those who help in Cuba but are not identified as helpers in Argentina. One interesting observation is that help from a paid source in Argentina is statically significantly greater than in Cuba. In

Cuba, only 1.4% report getting assistance from a paid source while 32.9% of Argentine respondents report getting help from a paid source. This may relate to the economic crisis in Cuba, and the lasting effects of the U.S. blockade. The Cuban government spends significantly less on health care than the Argentine government, as well. Another case is that, due to the housing shortage, informal care is more available in Cuba and therefore there is no need for paid care.

The percent of respondents receiving help from a religious organization is 3.5% in Cuba and 2.5% in Argentina. The senior citizen center is a community outlet that helps 2.0% of the sample in Cuba and 2.6% of the sample in Argentina and the social-welfare organization helps 1.6% of the Cuban sample and 6.5% of the Argentine sample, which is the only difference among the community help variables of statistical significance. When pooling all of the community help variables together, the mean for Cuba was 0.062, while the mean for Argentina was 0.071, a difference that was not statistically significant. Among those who received help, the mean for Cuba was 0.088 while the mean for Argentina was 0.123, a difference that was also not statistically significant.

Among the respondents in the Cuban sample, 94.5% reported living with someone else, whereas only 70.5% of the Argentine respondents lived with someone else, a difference that is quite large and statistically significant. Once again, this can be related to the housing crisis the Cuba has been experiencing for the past 30 years. Additionally, we can also infer that as the Cuban sample is older, the need to live with someone else is greater.

VIII. Methods and Hypothesis

Because the outcome variables are binary, if Ordinary Least Squares was used there would be heteroskedasticity. I have chosen to use probit regressions, which do not directly produce marginal effects, but what is presented in the tables has been converted to the marginal effects.

I ran separate probit regression analyses for Cuba and for Argentina. Equation 1 shows the first probit regression that was used in the study.

$$[1] \quad Y_i = \bar{X}\beta_0 + \beta_1\text{LIVE} + \beta_2\text{FAMILYSUPPORT} + \beta_3\text{FRIENDSUPPORT} + \beta_4\text{COMMUNITYSUPPORT} + \varepsilon_i$$

where $\beta_0 - \beta_4$ are the marginal effects to be estimated by measuring the effects of different types of support in relation to the omitted category of paid support. X is a vector of all other confounding variables and where ε_i is an error term. \bar{X} is a vector of all of the other controls: age, education, type of health insurance, and work status, and Y_i represents all of the health outcomes of interest. These outcomes are: general health status, life satisfaction, happiness and anxiety. These outcomes were examined separately as well. I compared each country's separate subsamples to see how the measured impact of living arrangements and social networks for Cuba will compare to that of Argentina. I ran statistical tests to see if the marginal effects differ and draw comparisons and conclusions based upon the results.

I will test a separate probit regressio of the effect of social support measures on the full sample, regardless if the individual needed help or not. As displayed in Equation 2, the variables I will be testing are companionship, number of living children, number of

living children squared, total number living in the house and total number living in the house squared. Both of the squared terms are used to test for increasing marginal returns.

$$[2] \quad Y_i = \bar{X}\beta_0 + \beta_1\text{LIVE} + \beta_2\text{NUMBERLIVINGCHILDREN} + \beta_3\text{NUMBERLIVINGCHILDREN}^2 + \beta_4\text{TOTALINHOUSE} + \beta_5\text{TOTALINHOUSE}^2 + \varepsilon_i,$$

I hypothesize:

$$[1] \quad H_0: \beta_j = 0 \quad H_A: \beta_j > 0$$

where j represents the marginal effects of different measure for family and social networks.

I will also be testing the following hypotheses:

$$[2] \quad H_0: \beta_j = \beta_k \\ H_A: \beta_j \neq \beta_k$$

where j and k represent two different types of support, and

$$[3] \quad H_0: \beta_{j\text{Cuba}} = \beta_{j\text{Argentina}} \\ H_A: \beta_{j\text{Cuba}} \neq \beta_{j\text{Argentina}}$$

where j again represents the marginal effects of different measures for family and social networks.

Hypothesis [2] is testing the size of the different family and friend support networks and whether or not family and friend support networks are interchangeable.

Hypothesis [3] is testing whether or not the impact of social support on health differs between Argentina and Cuba.

Based upon the various inputs important to health other than social capital, social capital and health status may have complicated interactions. Environmental factors, behavior, and schooling may have a larger influence on health than actual health care expenditures. However, I will form two hypothesis based upon my observations.

As the health expenditures in Cuba are much lower than in Argentina, this may lead to the belief that informal care is more important in Cuba than in Argentina.

However, since the entire Cuban population is provided with health insurance, whereas universal health insurance is not granted in Argentina, this may indicate that informal care is more important in Argentina than in Cuba. Therefore, the impact of social support might be more significant in Argentina than in Cuba.

Additionally, the present housing crisis in Cuba may mean that Cubans receive more support from family because of the need to live together, which would make social support more significant in Cuba than in Argentina. Single person households, with women as the primary lone parent, have increased in both countries but have increased more so in Cuba. This may then imply that daughters have less time and fewer resources to take care of their elderly parents, which may lead to less informal care in Cuba.

Factors other than expenditures on health care may contribute significantly to health status, including behavior, labor patterns, schooling and the environment. This demonstrates that it is difficult to model health as an output, given the variety of inputs.

I am aware of the possibility for survey bias in this study. The help variables are collected in the data through questions that inquire about help from family and friends. Obviously, only those who are not healthy are the ones in need of help, thus, the set up of the survey may have created some collection bias. Additionally, I am aware of the

possibility of reverse causality bias. Therefore, I focus only on the sample needing help. The focus of my study is how social support impacts health, however, it is possible that I am seeing the relationship between health and social support in the opposite direction. Healthier people are more likely to get married, maintain a close group of friends and be generally better liked. Therefore, what I measure may be a correlation but not necessarily the causal impact but I will be controlling for many of the variables that may also impact health status of individuals. My discussion of the results will acknowledge the potential bias.

IX. Results

Results: Argentina

Good Health

Isolating just those individuals who receive help sheds light on the impact of different types of help on the elderly. The models that include only those individuals that receive help (Table 2) tell a different story about the data than using the full sample results (shown in Appendix A for comparison purposes). When looking at the coefficients on the independent variables of interest (type of help) and examining types of non-paid help, almost all of the family help variables positively impact the dependent variable (good health), signifying that they have a positive effect on health status, relative to receiving paid help. In model 2, the coefficient on the child help variable is 0.107, which demonstrates that relative to paying for a helper, getting help from one of your children increases your health status by 10.7 percentage points. Although negative, the coefficient on health from a spouse is nearly 0, showing no real impact.

Interestingly enough, the variable encompassing help from other members of the family network (other extended family) has a negative impact on the health status of the individuals, also displaying that there is some difference in the impact of help depending on which member of the family is helping. The coefficient on this variable is negative (-0.211) which explains that the percentage of those reporting good to excellent health drops by 21.1% if a family member other than those mentioned in the survey is the caregiver instead of paid help.

However, none of the coefficients on the family help variables are statistically significant, as the p-values on each coefficient are very large. Once someone receives help, the type of family help does not matter so much. Additionally, when running the F-test the results clearly demonstrate that there is no joint significance of the family help variables, as seen by the small F-statistic.

When adding in the community help variable, the estimated impact of family help does change very much. In model 1, the children help, siblings help, non relative helps and grandchildren help variables are all positive and have very similar coefficients to those coefficients on the family help variables in model 2. Relative to receiving help from a paid helper, receiving help from any of the above family members will positively impact the health status of the elderly family member. The spousal help variable becomes positive, when adding in the community help variables. The coefficient on spouse shows a lesser marginal impact on health status as compared to the child help variable, but still increases the probability of being in good to excellent health by 5.8 percentage points.

This finding may demonstrate that spousal help is preferred only to paid help, not to any other forms of help. One interesting observation is that the coefficient on other

family members help is once again strongly negative; demonstrating that compared to receiving paid help, receiving help from a family member not included in the survey lowers the individual's health status by 21.5 percentage points.

Community help, which encompasses help from all of the non-family networks in the survey, is strongly negative and statistically significant, showing that receiving help from a community source significantly lowers an individual's probability of being in good to excellent health by 36.4 percentage points.

The marginal effects of private insurance in models 1 and 2 are positive (0.305 and 0.308) and bigger than family and social variables, but are not statistically significant. This may be due to the fact that there are fewer observations in the regressions using model 1 and 2. Nonetheless, observing these results demonstrates that both formal sector and informal sector help are beneficial to the elderly in times of need.

These results suggest that for those individuals who receive (and need) help, getting that help from a family or kin member is more effective for improving health status than receiving that help from a paid professional. Although other variables may be more useful for evaluating the health status of elderly, there is some evidence that family care and the type of family care has an impact on the health status of the elderly.

Life satisfaction

Another measure of health is being satisfied with and enjoying life. Table 3 presents only the observations of those whom receive help. The marginal impact of the family help variables for spouse, sibling, grandchild and other family members help are negative, demonstrating that even among those individuals who receive help, getting help from some members of the family negatively impacts their satisfaction with life, compared to receiving help from someone who is paid. This may illustrate that elderly individuals feel embarrassed or helpless when they receive help from people they know, but do not have the same reaction to receiving help from someone who is paid because it is not a personal, kin relationship. In model 2, however, the marginal impact of child help is 0.201, which may explain that elderly do feel more life satisfaction when those closest to them take time to help them with their needs. The marginal effect of child help means that when a child helps their elderly parent, the probability that the elderly parent expresses satisfaction with life increases by 20.1%. However, when the community help variables is dropped from the regression (model 1), the marginal effect of sibling help becomes slightly positive (0.006). However, the impact of sibling care giving in both models is very small; therefore it does not have much of an impact on life satisfaction.

The community help variable is positive, although not statistically significant. Receiving support from a community source increases the probability that an individual will be satisfied with life by 15.2 percentage points. The marginal impacts of private insurance, in Table 3, the marginal effects on private insurance in model 1 is 0.421, and the coefficient on private insurance in model 2 is 0.416. These marginal effects

demonstrate a 42 percent probability increase in life satisfaction when an elderly individual has private health insurance. Once again, the private insurance variable may also include the impact of income on the dependent variable (life satisfaction), as higher income may lead to a higher probability of being satisfied with life.

Happiness

Related to life satisfaction, is happiness of the elderly individual. Table 4 displays the results for the regressions of social support on happiness. Happiness is affected differently by each of the family help variables, as seen in Table 4. Children, siblings and friend aid actually reduce happiness by probability of 8.5%, 4.3% and 1.7% respectively. Spousal support and other family support increases the probability of being happy by 22.5 percentage points and .5 percentage points, respectively. Spousal support, perhaps, is already a support network that is built in and elderly members may not feel as helpless when receiving support from a spouse. Additionally, living with someone else increases the likelihood of being happy by 9.2 percentage points.

Community support increases the likelihood of being happy by 23.8 percentage points and is statistically significant. Receiving help from a community source may make an individual feel less helpless because receiving help from a community source is less individualized and more group oriented.

Anxiety

On the opposing side, anxiety is an outcome variable that demonstrates an elderly individual's stress level, which undoubtedly impacts health status. In Table 5, although

none of the family or community help variables show statistical significance, most do negatively affect anxiety levels. The marginal impact of having child help increases the probability of having anxiety by 16.2%. Having siblings, other family members help or a friend help also increases anxiety levels. Spousal support and grandchild support, however, reduce the probability of having anxiety by 13.3 and 2.9%. Companionship also increases the probability of having anxiety by 17.5%. Interestingly, a one unit rise in the community help variable actually reduces the probability of having anxiety by 1.3 percentage points.

Results: Cuba

Health

Similar to Argentina, Table 2 displays the results for the regression of the social support variables on health status. Each of these variables has a positive marginal impact on the health status of the elderly in the sample. The results in model 1 show that, relative to having a paid helper, having a child as the primary caregiver increases the probability of being in good/excellent health by 9.4%. Having a spouse help increase the probability of being in good/excellent health by 7.9%, having a grandchild help increases the probability of being in good to excellent health by 12.0%, having a parent or parent-in-law help increases the probability by 40.4%, having any other family member help increases the probability of being in good to excellent healthy by 26.9%, a value that is statistically significant, and having a friend help increases the probability by 5.9%. In addition, community help variable has a positive marginal impact on health status and is statistically significant. The companion variable, a measure of living alone or with a

companion, also shows a positive marginal impact on health status, showing that living with someone else increases the probability of being in good to excellent health by 13.1%.

When omitting the community help variables, the marginal effects of the family help variables do not change by much, therefore showing both the robustness of the results and the true impact of social support. Running the F-test on both regressions showed that the family support variables were not jointly significant.

Life Satisfaction

Once again, life satisfaction is an outcome variable related to health status. Table 3 displays the results for the regression of social support on life satisfaction. In this case, some of the family and community help variables have a negative marginal impact on life satisfaction, leading to a possible conclusion that receiving help from any source may make an elderly individual feel helpless and weak. However, it appears that having those closest to the elderly, children, spouse, or other family, positively impacts life satisfaction, whereas having a friend help negatively impacts the probability of being satisfied with life by 5.4%. Living with a companion increases the probability of being satisfied with life by 8.4%, a possible indication of the impact of the housing shortage. Without a companion to live with, individuals may be homeless. The coefficient on community help is negative which shows that, unlike the regression for Argentina, receiving help from a community source reduces the probability of being satisfied with life by 4.4 percentage points.

Once again, omitting the community help variables make very little difference to the results. Running the F-test on the combine effect of the family support variables showed that the support variables were not jointly significant.

Happiness

Related to life satisfaction is the happiness of the elderly individual. Table 4 displays the results for the regressions of social support on happiness. The results for this regression are interesting in that most of the support variables negatively impact happiness. Receiving help from a spouse is the only family member that has a positive marginal impact on happiness. Companionship positively impacts happiness, showing that living with someone increases the probability of being happy by 12.2 percentage points. In the regression with the community help variable, companionship is statistically significant at the 10% level, showing that it has a statistically significant positive impact on happiness. Community help, however, has a negative marginal impact on happiness, showing that receiving help from a community source reduces the probability of being happy by 4.7 percentage points. The F-test results shows that, in both regressions, the family support variables did not have a significant impact on happiness.

Anxiety

Like Argentina, anxiety, a component of poorer health, is negatively impacted by some of the support variables. Table 5 displays the results for the regression of social support on anxiety. Receiving help from a child, spouse or parent shows a marginal increase in anxiety, whereas receiving assistance from a grandchild, another family

member or a friend actually reduces anxiety. It is interesting that receiving help from a child or spouse has a positive marginal impact on life satisfaction and good health but has a negative impact on anxiety. Part of the difference in the measure of impact on anxiety is the time frame of the question or the perceived answer to the question may differ.

Respondents were able answer yes if they had experienced anxiety at one time or another in their life, a very general time frame. Once again, running the F-test to test the joint significance of the family support variables showed that they did not have a significant joint impact on anxiety. Companionship has a positive marginal impact on anxiety, meaning that it increases the probability that an individual will be anxious, and is statistically significant in model 1. The community help variable also increases the likelihood of having anxiety.

Statistical Differences Between Argentina and Cuba

Statistical tests of the effects of social support on the dependent variables in Argentina and Cuba were conducted to see if the impact differed. For many of the social support variables in the regression including help from a community source, the statistical test showed that the effects of social support on health status, life satisfaction, happiness and anxiety were similar for Cuba and Argentina. However, for the support care given from other members, the effect on health status and life satisfaction was different between Argentina and Cuba. The community help variable had a different impact on health status and happiness in Argentina and Cuba, while the variable help from a friend had a different impact on anxiety between the two countries.

In the regression dropping the community help variable, the effect of help from another family source had different impacts on life satisfaction and anxiety in Cuba and Argentina. In Cuba, having another family member has a caregiver had a positive effect on life satisfaction as well as reduced anxiety in Cuba, while having the opposite impact in Argentina.

Possibly, the small sample size may have an impact on the statistical findings but it may also relate to differing family structures in Cuba and Argentina. Once again, the present housing shortage in Cuba may indicate that more extended families live together than do in Argentina.

Social Support: Argentina and Cuba

The regressions in Tables 6-9 measure the marginal impacts of types of support on the full sample for each country using different measures of social support. Each sample is affected differently by the variables in the regression. In Argentina, companionship has a negative marginal impact on health status, whereas in Cuba, living with someone has a positive marginal impact on health status. Similarly, the total number of people in the house has a negative marginal impact on Argentina, but a positive marginal impact on Cuba. This may relate to the housing crisis, and the absence of single person households because of the lack of housing. Having greater numbers of children, however, has a negative marginal impact on health in both samples, which may relate to the presence of children as primary helpers. The square of total living children has a positive marginal effect, which shows increasing returns to the number of children.

The probit regression run on life satisfaction shows that having more children has a positive marginal impact on life satisfaction in Argentina and in Cuba. This may mean that having more children means more loved ones around, which can improve one's satisfaction with life. In Cuba, life satisfaction is maximized with 5.5 children living. The squared term total living children is negative, which means that it displays decreasing marginal returns. Companionship (living with someone) has a positive marginal impact on life satisfaction in Cuba but a negative marginal impact on life satisfaction in Argentina. This may again relate to the housing crisis in Cuba. Lastly, the variable total in house shows a positive marginal impact on life satisfaction. This may mean that being around more people helps elderly feel more fulfilled, and less lonely. Total in house squared, like number of children squared, displays decreasing returns.

Anxiety has a positive correlation with total living children, which means that having more children increases the probability that an elderly will experience anxiety. With more children, one may have more to worry about. Companionship has a negative correlation with anxiety in the Argentine sample, but a positive correlation in the Cuban sample. This means that living with someone, in Argentina, actually decreases the probability of having anxiety, whereas living with someone in Cuba increases the probability of having anxiety. The same impact on anxiety is seen for the total in house variable.

Lastly, happiness is positively impacted by total living children. This means that having more children has a positive marginal impact on happiness, in both Argentina and Cuba. Companionship also has positive marginal impacts on both samples. Total number

in the house has a positive marginal impact on happiness in the Argentine sample, but a negative marginal impact on happiness in the Cuban sample.¹

X. Discussion

The original expectations for the study were that social support and informal care networks would have a larger impact on health status, life satisfaction, happiness and anxiety in Argentina compared to Cuba. However, the results show that there was generally a more significant and positive impact of informal care in Cuba. The present housing shortage in Cuba may suggest that Cubans receive more support from family because of the need to live together, which would make social support more significant in Cuba than in Argentina. Moreover, although universal health care is provided in Cuba, expenditures on health care are much lower in Cuba than in Argentina. The lower overall expenditures could explain the greater need for informal care in Cuba. This may point to the efficiency, adequacy and allocation of resources in each health care system. It is also important to note that, although a Socialist government does provide all basic amenities equally for all citizens, the Cuban government restricts its citizens from participating in many facets of life. Many Cubans revert to hawking or working in the underground economy in order to earn enough income to put food on the table, let alone provide informal care for their elderly family members (Archibold, 2011). Cuba is also home to many tourist amenities, including five star hotels, yet these luxuries are denied to Cuban citizens. Therefore, it is clear that many other factors are involved surrounding the need for informal care networks.

¹ For description of robustness and goodness of fit tests and full description of full sample results see Appendix A.

Investigating the impact of social networks and living arrangements on the health status of the elderly can highlight important policy and family implications that may help the lives of elderly and the future of long term health care in the world. Although there is only some statistical significance seen in the results, family support seems to be both helpful and preferred, as both a substitute and complement to formal care. However, the entrance of women in the labor force, shortage of housing and economic uncertainties may erode informal care networks. Therefore, this demonstrates that the governments need to be aware of the gaps present in informal care networks. Through the coordination of various care networks, adequate care can be provided to the elderly in both countries, as well as around the world. Policies granting compensation incentives for families that provide informal assistance as well as support groups for caregivers are possible steps that governments can take to ensure that both the elderly and their caregivers are provided for. Although this may increase spending, long run expenditures on institutionalization will decrease, with fewer and prolonged institutionalizations of elderly. By investigating these variables and their relationships, more effective and efficient methods of elderly healthcare can be created to aid in the care of elderly individuals and demonstrate the need for certain types of care network. More qualitative work should be done on how support is given and what comprises the support as well as work investigating the efficiencies of the formal health care systems. Extended family networks should also be evaluated and compared among countries in the Latin American and Caribbean region. Additionally, the constant change and advancement of the world, and the growth of the Latin American and Caribbean region, suggests that more updates studies need to be done the in region. Once again, my research will not only contribute to

the health economic field of study, helping to make important implications about health care policies and programs, but it will also shed light on a new region of study, one that is not an industrialized world power like the United States and will therefore help expand the field of study.

References

- Adams, Bert N. and Jan Trost, eds. "Families in Cuba: From Colonialism to Revolution" (414-439). In Adams, Bert N. and Jan Trost, (Eds.) *Handbook of World Families*. Thousand Oaks, California: Sage Publications, 2005a.
- Adams, Bert N. and Jan Trost, eds. "The Family in Argentina: Modernity, Economic Crisis, and Politics" (391-413). In Adams, Bert N. and Jan Trost, (Eds.) *Handbook of World Families*. Thousand Oaks, California: Sage Publications, 2005b.
- Anderson, Gerard F. and Peter Sotir Hussey, "Population Aging: A Comparison Among Industrialized Countries," *Health Affairs* 19:3 (2000): 191-203.
- Antonucci, Toni C. and Hiroko Akiyama. "Social Networks in Adult Life and a Preliminary Examination of the Convoy Model," *Journal of Gerontology* 42:5 (1987): 519-527.
- Archibold, Randal C. "In a Changing Cuba, Many Remain Skeptical." *New York Times*, 18 Apr. 2011. Accessed 19 Apr. 2011 at <<http://www.nytimes.com/2011/04/19/world/americas/19cuba.html>>.
- Cantor, Majorie H. "Social Care: Family and Community Support Systems." *Annals of the American Academy of Political and Social Science* 503 (May, 1989): 99-112.
-

- Cantor, Majorie H., and Virginia Little. 1985. "Aging and Social Care." In Robert Binstock and Ethel Shanas (Eds.), *Handbook of Aging and the Social Sciences*. New York: Van Nostrand Reinhold
- Cerrutti, M. "Economic Reform, Structural Adjustment and Female Labor Force Participation in Buenos Aires, Argentina." *World Development* 28.5 (2000): 879-91. *ScienceDirect*.
- Coburn, David. "Income inequality, social cohesion and the health status of populations: the role of neo-liberalism." *Social Science & Medicine* 51 (2000): 135-146. Elsevier Science, Ltd.
- Chow, Nelson Wing-Sun. "The Chinese Family and Support the Elderly in Hong Kong." *The Gerontologist* 23:6 (1983): 584-588.
- Folland, Sherman, Allen C. Goodman, and Miron Stano. "Demand for Health Capital." *The Economics of Health and Health Care*. 6th ed. Boston: Prentice Hall, 2010. 136-40.
- Folland, Sherman, Allen C. Goodman, and Miron Stano. "Hospitals and Long Term Care." *The Economics of Health and Health Care*. 6th ed. Boston: Prentice Hall, 2010. 294-96.
-

Fried Bruce J. and Laura M. Gaydos, eds., *World Health Systems: Challenges and Perspectives* (Chicago: Health Administration Press), 2002.

Fuchs, Victor R. (1999). "Health care for the elderly: How much? Who will pay for it?" *Health Affairs*, 18(1): 11-21.

Gasparini, Leonardo. "Income Distribution Changes in Argentina: A Characterization through Microeconomic Decompositions." *Presentation*. The World Bank Group, 2 Oct. 2002. Accessed 6 Mar. 2011 at <http://info.worldbank.org/etools/bspan/PresentationView.asp?EID=186&PID=370>.

Grossman, Michael. "The Human Capital Model." In *Handbook of Health Economics*. In ed. A.J. Cuyler and Joseph P. Newhouse. Vol. 1, Part 2. Amsterdam: Elsevier, 2000. 347-408.

Grossman, Michael. "On the Concept of Health Capital and the Demand for Health." *Journal of Political Economy* 80.2 (1972): 223.

Grossman, Michael. 1972. *The Demand for Health: a Theoretical and Empirical Investigation*. New York: National Bureau of Economic Research; *The National Bureau of Economic Research*. 1972. 3 Mar. 2011.

Gehlert, Sarah, Dana Sohmer, Tina Sacks, Charles Miniger, Martha McClintock and Olufunmilayo Olopade. "Targeting Health Disparities: A Model Linking Upstream Determinants to Downstream Interventions." *Health Affairs* 27:2 (2008): 339-349. Health Affairs.

Jennissen, Therese, and Colleen Lundy. "Women in Cuba and the Move to a Private Market Economy." (2001). School of Social Work, Carleton University, 23 May 2001.

Keppel, Kenneth, Linda Bilheimer, and Leda Gurley. "Improving Population Health And Reducing Health Care Disparities." *Health Affairs* 26:5 (2007): 1281-1292. Health Affairs.

Kindig, David A. *Purchasing Population Health: Paying for Results*. Ann Arbor: University of Michigan, 1997.

Kliksberg, Bernardo. "Examining myths and truths in public social policy: the Latin American case," *International Review of Administrative Sciences* 70:649 (2004): 649-664.

Kovner, Christine Tassone, Mark Mezey and Charlene Harrington, "Who Cares for Older Adults? Workforce Implications Of An Aging Society." *Health Affairs* 21:5 (2002): 78-89.

Pelaez, Martha, Alberto Palloni, Cecilia Albala, Juan Carlos Alfonso, Roberto Ham-Chande, Anselm Hennis, Maria Lucia Lebrao, Esther Lesn-Diaz, Edith Pantelides, and Omar Prats. SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000 [Computer file]. ICPSR03546-v1. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2005. doi:10.3886/ICPSR03546

Mechanic, David. "Disadvantage, Inequality, and Social Policy." *Health Affairs* 21:2 (2002): 48-59.

Merlis, Mark. "Caring for the Frail Elderly: An International Review." *Health Affairs* 19:3 (May/June 2000): 141-149.

Mesa-Lago, Carmelo. *Growing Economic and Social Disparities in Cuba: Impact and Recommendations for Change*. Rep. Miami: Cuba Transition Project, 2002. Institute for Cuban and Cuban-American Studies, 2002.

Rice, Thomas H. *The Economics of Health Reconsidered*. 2nd ed. Chicago: The Health Administration Press, 2002.

- Schoen, Cathy, Robin Osborn, Michelle M. Doty, David Squires, Jordan Peugh, and Sandra Applebaum. "A Survey of Primary Care Physicians In Eleven Countries, 2009: Perspectives On Care, Costs, And Experiences." *Health Affairs*: w1171-w1183.
- Schoenbach, Victor J., Berton H. Kaplan, Lisa Fredman, and David G. Kleinbaum, "Social Ties and Mortality in Evans County, Georgia," *American Journal of Epidemiology* 123:4 (1986): 577-591.
- Shaw, James W., William C. Horrace, and Ronald J. Vogel. "The Determinants of Life Expectancy: An Analysis of the OECD Health Data." *Southern Economic Journal* 71:4 (2005): 768-783.
- Smith, James P. "Healthy Bodies and Thick Wallets: The Dual Relation between Health and Economic Status." *The Journal of Economic Perspectives* 13:2 (1999):145-166.
- Steinbach, Ulrike. "Social Networks, Institutionalization, and Mortality Among Elderly People in the United States." *Journal of Gerontology* 47:4 (July 1992): S183-S190.
-

The CIA World Factbook. "Cuba." *The World Factbook*. Central Intelligence Agency.

Accessed 25 Jan. 2011 at <<https://www.cia.gov/library/publications/the-world-factbook/geos/cu.html>>.

The CIA World Factbook. "Argentina." *The World Factbook*. Central Intelligence

Agency. Accessed 25 Jan. 2011 at <<https://www.cia.gov/library/publications/the-world-factbook/geos/ar.html>>.

The CIA World Factbook. "Field Listing: Distribution of Family Income – Gini Index."

The World Factbook. Central Intelligence Agency. Accessed 18 Apr. 2011 at <https://www.cia.gov/library/publications/the-world-factbook/fields/2172.html>

Van Houtven, Courtney, and Edward C. Norton. "Informal Care and Health Care Use of Older Adults." *Journal of Health Economics* 23.6 (2004): 1159-180.

World Health Organization. "Argentina." *WHO Argentina*. 2008. Accessed 20 Sept. 2010

at <<http://www.who.int/>>.

World Health Organization. "Cuba." *WHO Cuba*. 2008. Accessed 20 Sept. 2010 at

<<http://www.who.int/>>.

World Bank. "Argentina." *Data: The World Bank*. Accessed 25 Jan. 2011 at
<<http://data.worldbank.org/country/argentina>>.

World Bank. "Cuba." *Data: The World Bank*. Accessed 25 Jan. 2011 at
<<http://data.worldbank.org/country/cuba>>

Yoo, Byung-Kwang, Jay Bhattacharya, Kathryn M. McDonald, and Alan M. Garber.
"Impacts of Informal Caregiver Availability on Long-term Care Expenditures in
OECD Countries." *Health Services Research* 39 (2004): 1971-992.

Table 1: Descriptive Statistics

	Cuba: 1905	Argentina: 1043
Variable	Mean (Std. Error)	Mean (Std. Error)
Good Health	.431 (.495)	.651 (.477)
Anxiety Problems	.201 (.401)	.121 (.326)
Life Satisfaction	.818 (.386)	.760 (.427)
Happiness	.769 (.423)	.831 (.375)
Living Arrangement (livewith)	.887 (.3171471)	.730 (.444)
Total Living Children	2.94 (2.42)	2.43 (2.09)
Number of Children	2.80 (2.48)	2.54 (2.42)
Spouse helps	.040 (.196)	.028 (.1644909)
Child Helps	.162 (.368)	.042 (.2011097)
Sibling Helps	0	.006 (.0756639)
Parents Help (in law)	.002 (.04)	0
Grandchild Helps	.016 (.127)	.016 (.127)
Other Family Helps	.022 (.143)	.039 (.192)
Not Family Helps (friends help)	.018 (.132)	.005 (.070)
Paid Help	.004 (.061)	.010 (.080)
How Many Help	.440 (.9156)	.306 (.725)
Total People Living in House(numberinhouse)	3.53 (2.01)	2.43 (2.1)
Social Welfare Helps	.018 (.134)	.041 (.20)
Religion Helps	.019 (.138)	.011 (.102)
Home Service Helps	.0005 (.023)	0
Center for Elderly Helps	.012 (.109)	.017 (.130)
Other Community Help	.012 (.109)	.002 (.042)
No Community Help	.939 (.242)	.921 (.270)
Community Help Total	.062 (.006)	.071 (.008)
No Help Received	.742 (.438)	.883 (.322)
Social Insurance (25 observations)	.0131 (.114)	X
Public Insurance	X	.209 (.407)
Private Insurance	X	.104 (.305)
Social Security	X	.511 (.500)
No Insurance	X	.173 (.378)
Age	71.97 (8.92)	70.74 (7.28)
Age²	5258.7 (1333.2)	5057.5 (1063.2)
Years of Education	7.1 (3.89)	7.16 (6.18)
Years of Education2	65.5 (67.9)	89.4 (419.21)

Source: SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000

Table 2: Impact of Social Support on Self-Reported Health, For Those Who Need Help

Variables	Argentina		Cuba	
	Specification 1	Specification 2	Specification 1	Specification 2
	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)
Child Helps	.148 (.216)	.107 (.210)	.094 (.108)	.112 (.106)
Spouse Helps	.058 (.221)	-.013 (.270)	.079 (.125)	.094(.124)
Siblings Help	.065 (.298)	.011 (.285)	X	X
Parents-in-law help	X	X	.404 (.219)	.404(.218)
Grandchild helps	.132 (.193)	.131 (.190)	.120 (.102)	.111(.101)
Other Family Helps	-.215 (.199)	-.211 (.217)	.269 (.124)*	.273 (.123)
Non Relative Helps	-.017 (.213)	-.039 (.207)	.059 (.143)	.086 (.142)
Paid Help	X	X	X	X
Companion	-.088 (.139)	-.115 (.143)	.131 (.099)	.131 (.098)
Community Help	-.364 (.097)*	X	.174 (.084)*	X
Age	.001 (.130)	.001 (.129)	-.065 (.043)	-.063(.042)
Age ²	.0001 (.0008)	.0001 (.009)	.0005 (.0003)	.0005 (.0003)
Education	.087 (.041)*	.086 (.041)	-.035 (.018)	-.035 (.018)
Education ²	-.004 (.002)	-.004 (.002)	.035 (.108)	.002 (.001)
Work Status	-.075 (.289)	-.114 (.267)	-.133 (.120)	-.136 (.118)
Private Insurance	.305 (.256)	.308 (.149)	X	X
Public Insurance	-.084 (.211)	-.360 (.133)	X	X
Social Security Insurance	-.126 (.202)	-.502 (.183)	X	X
No Insurance	X	X	X	X
Pseudo R-Squared	.2185	.1750	.1362	.1298

Source: SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000

*Denotes statistical significance

Sample Size: 105

Sample Size: 483

Table 3: Impact of Social Support on Life Satisfaction, For Those Who Need Help

Variables	Argentina		Cuba	
	Specification 1	Specification 2	Specification 1	Specification 2
	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)
Child Helps	.201 (.167)	.216 (.165)	.018 (.102)	.014 (.101)
Spouse Helps	-.041 (.181)	-.018 (.178)	.121 (.097)	.119 (.097)
Siblings Help	-.008 (.236)	.006 (.236)	X	X
Parents-In-Law Help	X	X	X	X
Grandchild helps	-.055 (.163)	-.054 (.163)	-.040 (.115)	-.036 (.115)
Other Family Helps	-.379 (.120)	-.372 (.203)	.123 (.112)	.123 (.112)
Non Relative Helps	-.003 (.203)	.027 (.197)	-.054 (.136)	-.060 (.137)
Paid Help	X	X	X	X
Companion	-.142 (.122)	-.133 (.122)	.084 (.110)	.083 (.120)
Community Help	.152 (.142)	X	-.044 (.105)	X
Age	.079 (.116)	.082 (.115)	.005 (.045)	.005 (.045)
Age ²	-.0005 (.001)	-.001 (.001)	-.000005 (.0003)	-.000005 (.0003)
Education	.040 (.035)	.037 (.034)	-.021 (.022)	-.022 (.022)
Education ²	-.004 (.002)	-.003 (.002)	.0006 (.001)	.0006 (.001)
Work Status	-.098 (.258)	-.073 (.258)	.085 (.111)	.087 (.110)
Private Insurance	.421 (.117)	.416 (.118)	X	X
Public Insurance	.173 (.176)	.183 (.173)	X	X
Social Security Insurance	.149 (.164)	.171 (.161)	X	X
No Insurance	X	X	X	X
Pseudo R-Squared	.0962	.0900	.0341	.0337

Source: SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000

*Denotes statistical significance

Sample Size: 122

Sample Size: 322

Table 4: Impact of Social Support on Happiness, Only Those Who Need Help

Variables	Argentina		Cuba	
	Specification 1	Specification 2	Specification 1	Specification 2
	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)
Child Helps	-.107 (.180)	-.085 (.181)	-.060 (.108)	-.065 (.107)
Spouse Helps	.179 (.123)	.225 (.116)	.022 (.122)	.019 (.122)
Siblings Help	-.059 (.229)	-.043 (.224)	X	X
Parents- In-Law Help			X	X
Grandchild helps	.140 (.105)	.123 (.121)	-.055 (.123)	-.051 (.122)
Other Family Helps	-.003 (.232)	.005 (.239)	-.050 (.150)	-.050 (.150)
Non Relative Helps	-.069 (.193)	-.017 (.179)	-.093 (.147)	-.099 (.147)
Paid Help	X	X	X	X
Companion	.061 (.119)	.092 (.124)	.212 (.111)*	.210 (.114)
Community Help	.238 (.066)*	X	-.047 (.109)	X
Age	-.005 (.118)	.033 (.137)	-.012 (.047)	-.012 (.047)
Age ²	-.0002 (.002)	-.0001 (.001)	.0001 (.0003)	.0001 (.0003)
Education	-.034 (.038)	-.051 (.039)	.028 (.021)	.028 (.021)
Education ²	.001 (.002)	.002 (.002)	-.001 (.001)	-.001 (.001)
Work Status	-.202 (.286)	-.119 (.253)	.112 (.117)	.112 (.117)
Private Insurance	.149 (.153)	.136 (.173)	X	X
Public Insurance	-.387 (.294)	-.318 (.283)	X	X
Social Security Insurance	-.201 (.182)	-.133 (.192)	X	X
No Insurance	X	X	X	X
Pseudo R-Squared	.2079	.1583	.0343	.0338

Source: SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000

*Denotes statistical significance

Sample Size: 95

Sample Size: 321

Table 5: Impact of Social Support on Anxiety, Only Those Who Need Help

Variables	Argentina		Cuba	
	Specification 1	Specification 2	Specification 1	Specification 2
	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)
Child Helps	.163 (.159)	.162 (.158)	.038 (.087)	.042 (.086)
Spouse Helps	-.132 (.084)	-.133 (.084)	.020 (.101)	.023 (.101)
Siblings Help	.103 (.209)	.102 (.209)	.068 (.287)	.068 (.287)
Grandchild helps	.163 (.159)	.029 (.148)	-.056 (.076)	-.059 (.075)
Other Family Helps	.570 (.250)*	.569 (.250)	-.013 (.109)	-.012 (.109)
Non Relative Helps	.209 (.255)	.208 (.255)	-.040 (.110)	-.036 (.111)
Paid Help	X	X	X	X
Companion	.176 (.071)*	.175 (.071)*	.186 (.059)*	.187 (.059)*
Community Help	-.013 (.106)	X	.037 (.076)	X
Age	-.068 (.091)	-.068 (.092)	-.013 (.034)	-.012 (.015)
Age ²	.0003 (.001)	.0003 (.001)	-.00002 (.0002)	.00002 (.0002)
Education	.040(.026)	.039 (.026)	-.013 (.015)	-.013(.015)
Education ²	-.0004 (.002)	-.0004 (.002)	.0008 (.0009)	.0008 (.001)
Work Status	-.099 (.097)	-.099 (.097)	-.006 (.100)	-.009 (.099)
Private Insurance	.126 (.224)	.128 (.225)	X	X
Public Insurance	.222 (.217)	.221 (.216)	X	X
Social Security Insurance	.180 (.115)	.179 (.115)	X	X
No Insurance	X	X	X	X
Pseudo R-Squared	.2583	.2582	.0482	.0477

Source: SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000

*Denotes statistical significance

Sample Size: 121

Sample Size: 482

Table 6: Impact of Living Arrangement and Support on Self-Reported Health Status, Full Sample

Variables	Argentina	Cuba
	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)
Total Living Children	-.011 (.015)	-.024 (.011)*
Total Living Children ²	.001 (.002)	.001 (.001)
Companionship	-.010 (.052)	.061 (.045)*
Total in House	-.023 (.039)	.043 (.018)
Total in House ²	.003 (.004)	-.003(.002)
Age	-.050 (.056)	-.061 (.021)*
Age ²	.0004 (.0002)	.0005 (.0001)*
Years of Education	.033 (.005)*	-.013 (.010)
Years of Education ²	-.0004 (.00007)	.0012 (.0005)*
Work Status	.020 (.037)	.165 (.031)*
Private Insurance	-.125 (.238)	X
Public Insurance	-.210 (.235)	X
Social Security Insurance	-.229 (.233)	X
No Insurance	-.219(.235)	X
Pseudo R-Squared	.0663	.0395

Source: SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000

*Denotes statistical significance

Sample Size: 1011

Sample Size: 1894

Table 7: Impact of Living Arrangement and Support on Life Satisfaction, Full Sample

Variables	Argentina	Cuba
	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)
Total Living Children	.039 (.017)	.011 (.009)
Total Living Children ²	-.0006 (.012)	-.001 (.0008)*
Companionship	-.034 (.045)	.034 (.037)*
Total in House	.039 (.017)	.023 (.013)
Total in House ²	-.006 (.004)	-.0007 (.001)*
Age	.028 (.031)	.008 (.018)
Age ²	-.00002 (.0002)	-.00003 (.0001)
Years of Education	.002 (.004)	-.006 (.008)
Years of Education ²	.00003 (.00006)	.00001 (.0004)
Work Status	.045 (.033)	.097 (.020)*
Private Insurance	.072 (.193)	X
Public Insurance	.035 (.213)	X
Social Security Insurance	.037 (.223)	X
No Insurance	-.039 (.237)	X
Pseudo R-Squared	.0290	.0294

Source: SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000

*Denotes statistical significance

Sample Size: 1042

Sample Size: 1690

Table 8: Impact of Living Arrangement and Support on Anxiety, Full Sample

Variables	Argentina	Cuba
	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)
Total Living Children	.013 (.011)	.009 (.009)
Total Living Children ²	-.0004 (.0009)	-.001 (.001)*
Companionship	-.002 (.036)	.039 (.032)
Total in House	-.037 (.027)	.024 (.013)
Total in House ²	.003 (.003)	-.001 (.001)*
Age	-.009 (.024)	-.017 (.017)
Age ²	-.00004 (.0002)	.00007 (.0001)
Years of Education	.005 (.003)	-.007 (.008)
Years of Education ²	-.00007 (.00005)	.0003 (.0004)
Work Status	-.045 (.026)	-.100 (.020)*
Private Insurance	.139 (.168)	X
Public Insurance	.139 (.166)	X
Social Security Insurance	.132 (.165)	X
No Insurance	.101 (.166)	X
Pseudo R-Squared	.0492	.0295

Source: SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000

*Denotes statistical significance

Sample Size: 933

Sample Size: 1693

Table 9: Impact of Living Arrangement and Support on Happiness, Full Sample

Variables	Argentina	Cuba
	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)
Total Living Children	.026 (.013)*	.006 (.010)
Total Living Children ²	-.001 (.001)	-.007 (.015)*
Companionship	.072 (.043)*	.066 (.041)*
Total in House	.057 (.032)	-.034 (.015)
Total in House ²	-.007 (.003)	-.001 (.001)*
Age	-.021 (.030)	.008 (.020)
Age ²	.0002 (.0002)	-.00003 (.0001)
Years of Education	.002 (.004)	.015 (.008)
Years of Education ²	-.00006 (.00006)	-.0008 (.0005)
Work Status	.071 (.031)	.028 (.023)*
Private Insurance	.089 (.192)	X
Public Insurance	.106 (.189)	X
Social Security Insurance	.105 (.187)	X
No Insurance	.068 (.189)	X
Pseudo R-Squared	.0217	.0231

Source: SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000

*Denotes statistical significance

Sample Size: 1039

Sample Size: 1893

Table 10: Mean Comparison Tests Cuba and Argentina of Those Who Need Help

Variable	Cuba Mean (std. dev)	Argentina Mean (std. dev)	Difference (standard error)
Child helps	.627 (.484)	.361 (.482)	.267 (.049)*
Spouse Helps	.155 (.360)	.238 (.427)	-.083 (.038)*
Grandchild Helps	.063 (.243)	.139 (.347)	-.076 (.027)*
Parents Help	.006 (.078)	0	X
Siblings Help	0	.049 (.217)	X
Religion Helps	.035 (.183)	.025 (.156)	.010 (.018)
Other Family Helps	.081 (.274)	.041 (.199)	.040 (.026)
Friends Help	.069 (.254)	.082 (.275)	-.013 (.026)
Paid Help	.014 (.005)	.328 (.043)	-.314 (.024)*
Social Welfare Helps	.016 (.127)	.066 (.249)	-.049 (.026)*
Senior Citizen Service Helps	.020 (.141)	.025 (.156)	.021 (.006)
Other Community Help	.017 (.127)	.008 (.091)	.008 (.012)
Social Service Helps	0	0	0
Live With	.945 (.228)	.705 (.458)	.240 (.029)*

Source: SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000

* denotes statistically significant difference at the 5% level.

Table 11: Mean Comparison Tests Cuba and Argentina of the Full Sample

Variable	Cuba Mean (std. dev)	Argentina Mean (std. dev)	Difference (standard error)
Child helps	.162 (.008)	.042 (.006)	.119 (.013)*
Spouse Helps	.040 (.004)	.028 (.005)	.012 (.007)*
Grandchild Helps	.016 (.003)	.016 (.004)	-.00003 (.005)
Parents Help	.002 (.040)	X	X
Siblings Help	X	.006 (.076)	X
Religion Helps	.019 (.003)	.011 (.003)	.009 (.005)*
Other Family Helps	.021 (.003)	.005 (.002)	.016 (.005)*
Friends Help	.018 (.003)	.010 (.003)	.008 (.005)*
Paid Help	.004 (.001)	.038 (.006)	-.035 (.005)*
Social Welfare Helps	.018 (.003)	.041 (.006)	-.023 (.006)*
Senior Citizen Service Helps	.012 (.003)	.017 (.004)	-.005 (.005)
Other Community Help	.012 (.003)	.002 (.001)	.012 (.004)*
Social Service Helps	.018 (.003)	.041 (.006)	-.023 (.006)*
Live With	.887 (.007)	.730 (.014)	.157(.014)*
Age	71.97 (.204)	70.74 (225)	1.22 (.322)*
Years of Education	7.10 (.089)	7.16 (.191)	-.060 (.186)
Work Status	.185 (.009)	.242 (.013)	-.047 (.016)*
Health Status	.431 (.011)	.651 (.015)	-.220 (.019)*
Life Satisfaction	.818 (.009)	.760 (.013)	.058 (.016)*

Source: SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000

* denotes statistically significant difference at the 5% level

Appendix A: Tests of Robustness and Goodness of Fit and Full Sample Results

Robustness and Goodness of Fit Tests

Running the reset test, or test of the model specifications, showed that the regression in Table II needed to be re-specified. Therefore, I added a squared years of education term to the model. After running the reset test with the squared years of education variable, model 1 full sample regression reflected the true relationship between the Y and X variables by passing the reset test.

Degree of Variation Explained by the Models: Argentina

In Table 2, the R^2 values are relatively large for models 1 and 2 (.2185 and 0.1750) which indicates that the explanatory variables explain 22% and 18% of the variation in good health, when using only the individuals that receive help.

The R^2 values for these regressions on *life satisfaction* are smaller than those for the regressions on good health, indicating that there are other more useful, but unmeasured, variables to be used for explaining the dependent variable. In Table 3, the R^2 values are 0.0962 and 0.0900, which indicates that the explanatory variables explain 10% and 9% of the variation in life satisfaction.

The R^2 values for the regression on happiness are larger at 0.2079 and 0.1583 and the R^2 values for the regression on anxiety are the largest of all four regressions, 0.2583 and 0.2582.

Degree of Variation Explained by the Models: Cuba

In Table 2, the R^2 values are smaller for models 1 and 2 (0.1362 and 0.1298) than the R^2 values for the same regression in Argentina. These values indicate that the explanatory variables explain 14% and 13% of the variation in good health, when using only the individuals that receive help.

The R^2 values for these regressions on *life satisfaction* are smaller than those for the regressions on good health, indicating that there are other more useful variables to be used for explaining the dependent variable. In Table 3, the R^2 values are 0.0341 and 0.0337, which indicates that the explanatory variables explain 3.5% of the variation in life satisfaction.

The R^2 values for the regression on happiness are relatively the same to those for the regression on life satisfaction at 0.0343 and 0.0338 and the R^2 values for the regression on anxiety are only slightly larger at 0.0482 and 0.0477.

It is interesting that the regressions for the Argentina sample have much stronger R^2 values. This may be due to the fact that in the Argentina sample there are more control variables (the insurance variables), which are not present in the Cuban regressions.

Results: Argentina

Family help in the full sample, displayed in Tables 12-15, is negatively associated with good health. This is most possibly the case because in these specifications individuals who do not receive help are included in the models, and people in the best health do not need extra care giving. When the model is altered to include only those receiving help, displayed in Table 12, the marginal effects of the measures for child,

grandchild, siblings and friends help become positive and indicates a positive impact on the health status of the elderly individual relative to receiving paid help, consistent with the reverse causality explanation.

The variables on each family help category show that compared to not receiving any assistance; receiving help from a family member lowers an elderly individual's health status. Interestingly, in Tables 12-15, some of the community help variables positively impact the good health dependent variable. Having access to a center for elderly has a positive measured impact on health, demonstrating a 2.6% increase in the probability of being in good/excellent health when there is a community center available for the elderly. Help from other community organizations increased the probability of being in good/excellent health by 3.9 percentage points. Compared to receiving no community help, most forms of community help lower the probability of being in good to excellent health.

Additionally, running the F-test demonstrates that the type of family help does significantly affect health status. The F-statistic, 4.60, is much larger than the critical F which is 2.02. Therefore, getting help from all types of combined family help versus receiving no help does affect the dependent variable differently.

The results of this F-test run on all types of help, both community and family, are also significant. The F-statistic is 3.45, which is larger than the critical value of 1.80, showing that the types of help, now including both family and community, jointly impact the health status of the elderly individual.

However, none of the marginal effects of community help are statistically significant which indicates that community help has does not have a significant impact on

the health status of the elderly. The marginal effect on the paid help variable, however, is statistically significant at the 1% level, with a p-value of 0.0. This indicates that having a domestic helper significantly lowers the health status of the elderly individual.

One possible reason for this is that this regression is run using all of the observations in the sample, including those elderly who do not receive help. Getting help of any kind is a signal of poor health; therefore those who are in good health would not need help. This regression does not show the results for those that are in poor health and receive help.

Table 13 demonstrates the effects of the same explanatory variables on the life satisfaction of the individuals in the study. The resulting marginal effects show that receiving help from family members lowers an elderly individual's life satisfaction. Model 1 in Table 13 displays that family help negatively impacts an elderly person's life satisfaction but that some forms of community help positively impacts their life satisfaction, relative to not receiving any help at all. The marginal effect on religion helps is .079, which shows that, compared to receiving no help, receiving help from a religious organization, church or synagogue improves the probability that the respondent is satisfied/very satisfied with life by 7.9 percentage points. Additionally, in Models 1 and 2, the coefficient on living arrangement is positive, demonstrating that living with a companion improves one's life satisfaction by .5 percentage points in model 1 and .7 percentage points in model 2.

The F- test for this regression demonstrates how the life satisfaction variable is significantly impacted by the dependent variables. Since 4.99 is greater than the critical value of 2.02, the F-test demonstrates that the family help variables are jointly significant,

but none of the family help variables alone are statistically significant. For all types of help (community and family), the F statistic is 3.02, which is significant.

In Table 13, the marginal effects of other family and paid help are all statistically significant. The coefficients on other family help and paid help are significant at the 5% level. The statistical significance of these coefficients suggests that receiving help from one of the two sources has a significantly negative impact on the probability that the elderly individual would be satisfied with their life.

The family-help variables generally negatively impact happiness in the full sample. Receiving help from a child, sibling, non relative, or another family member negatively impacts happiness. Receiving help from a spouse, however, increases the probability of being happy by 11.7 percentage points. Receiving paid help reduces the probability of being happy by 16 percentage points. Living with someone positively increases the probability of being happy by 12.1 percentage points.

The community-help variables have differing impacts on happiness. Receiving help from a religious organization or a senior citizen organization decreases the probability of being happy by 4.2 percentage points and 9.4 percentage points respectively, while receiving help from a social services organization increases the probability of being happy by 5.4 percentage points.

Work status is positive and statistically significant, showing that working increase the probability of being happy by 6.8 percentage points. The insurance variables also have a positive marginal impact on happiness.

The regression on anxiety shows that having a child help increases the probability of having anxiety by 18.9 percentage points and receiving help from a sibling increases

the probability of being anxious by 25.7 percentage points. Receiving help from a grandchild, friend, another family member and from a paid source also increases the probability of having anxiety. Receiving help from a spouse is the only family help variable that reduces the probability of having anxiety, and does so by 3.6 percentage points. Living with someone also reduces the probability of having anxiety by 2.9 percentage points.

The community-help variables affect anxiety differently. Receiving help from a religious source reduces the probability of having anxiety by 4.4 percentage points respectively, while receiving help from a community center or a social services organization increases the probability of having anxiety by 27.1 and 3.6 percentage points. The community center marginal effect is also statistically significant.

Working reduces the probability of having anxiety by 3.3 percentage points, yet all of the insurance variables are positive.

Insurance

Although not of significant interest in the study, the private insurance control variable was statistically significant in many of the regressions. Both of the regressions of social support on health status and life satisfaction display that private insurance positively impacts the health status of those individuals and is statistically significant. This indicates that having private insurance significantly improves health and life satisfaction relative to having no insurance. One possible explanation for significance of the private insurance variable in Appendix A is that the models are not controlling for income because the income variable had too many missing observations to be functional

in the regression. Therefore, the private insurance variable may be capturing the impact of income on the dependent variable as well. Higher income usually has a positive impact on health status. This may reflect a possible omitted error bias.

Results: Cuba

Once again, the full sample results (Tables 12-15) show that many of the social support and community support variables are negatively correlated to good health. We can be relatively certain that this relationship is due to the individuals in the sample who do not need help and who do not receive help. Child help is negatively associated with good health, showing that having a child help decrease the probability of being in good health by 5.2 percentage points. Spousal help reduces the probability of being in good health by 15.0 percentage points and is also statistically significant at the 5% level. Receiving help from a non relative reduces the probability of being in good to excellent health by 11.4%. However, help from a grandchild, another family member or a parent increases the probability of being in good to excellent health by 10.4, 7.9 and 26.0 percentage points respectively. Companionship reduces the probability of being in good to excellent health by 10.5 percentage points and is statistically significant.

The measures of community help generally have negative marginal impacts on the health status of the elderly in the full sample.

Family support generally has a negative marginal impact on life satisfaction. Having a child help reduces the probability of being satisfied with life by 20.3 percentage points, a coefficient that is statistically significant. Additionally, spousal support, help from a grandchild, help from a friend, and help from a non relative also negatively

impacts life satisfaction. The only family help variable that has a positive marginal impact on life satisfaction is receiving help from a parent or another family member. Paid help also a negative impact on life satisfaction and reduces the probability of being satisfied with life by 33.6 percentage points but is not statistically significant. However, companionship increases the probability of being satisfied with life by 11.2 percentage points and is statistically significant.

The community-help variables have differing impacts on life satisfaction. Receiving help from a religious source and a social services organization reduces the probability of being satisfied with life by 4.1 and 8.3 percentage points, while receiving help from a senior center organization and another community source increase the probability of being satisfied with life by 5.8 and 2.2 percentage points.

Although a control variable in the study, work status has a positive and statistically significant impact on life satisfaction. Working improves one's satisfaction with life by 7.6 percentage points, which makes logical sense because those who are able to work would generally feel more able.

Happiness is negatively impacted by all of the family help variables. Living with someone else has a positive marginal impact of 15.5% on happiness and is statistically significant. Receiving help from a paid source reduces the probability of being happy by 9.5 percentage points.

The community help variables, once again, have different marginal impacts on the happiness of elderly in the full sample. Religion, other community help and social services help have a negative marginal impact on happiness while receiving help from a senior citizen center increases the probability of being happy by 10.2 percentage points.

Work status is once again both positive and statistically significant, and increase the probability of being happy by 9.5 percentage points. Working is generally an indication of being in good health and being capable, both of which can contribute to happiness.

Lastly, the regression on anxiety show that receiving help from both a spouse and child have a statistically significant effect on increasing the probability of having anxiety. Receiving help from a spouse increases the probability of having anxiety by 15.2 percentage points and receiving help from a child increases the probability of having anxiety by 16.6 percentage points. Receiving help from a parent, another family member or from a friend also increase the probability of having anxiety but none of the three are statistically significant. Receiving help from a grandchild and from a paid source both reduce anxiety, an interesting observation. Although receiving help from a paid source may reduce happiness, health status and life satisfaction it also have the probability of reducing anxiety by 2.6 percentage points. Living with someone reduces anxiety by 1.8 percentage points, which can perhaps be related to the housing crisis and the need to live with family because of the lack of housing in Cuba.

The community-help variables impact anxiety differently. Receiving help from a social services organization, a religious organization or from another community organization increase the probability of having anxiety by 8.6, 7.0 and 11.5 percentage points respectively, while receiving help from a senior citizen organization reduces the probability of having anxiety by 12.1 percentage points.

Lastly, once again, work status is statistically significant and reduces the probability of having anxiety by 8.5 percentage points. This is perhaps due to the fact that working brings in extra income.

Results: Ordinary Least Square Regression of Social Support on General Well Being

Only Those Who Need Help

When combining the three dependent variables that are indicators of good general well-being, health status, life satisfaction and anxiety, there is little significance seen in the results. In Table 16, the coefficient estimates of the ordinary least squares regression, as opposed to marginal effects converted from the probit regression, are similar to those found in the probit regression, showing a generally positive impact on well-being, although showing little statistical significance.

Full Sample

The OLS regression results on the full sample, presented in Table 17, do have some statistical significance, yet, most coefficients are negative. Grandchild, other family, non relative, paid and sibling help are all statistically significant, yet all have negative impacts on well being in the Argentine sample. However, the companionship variable is statistically significant and shows a positive impact on general well-being, demonstrating that living with another individual improves the probability that one will be generally healthy. The results in the Cuban sample are similar to those in Argentine sample. The family and friend help variables do have some statistical significance but all

have negative impacts on general well being with the exception of the companionship variable. This again demonstrates that living with someone else positively impacts general well-being, which, in Cuba, may relate to the housing shortage.

Table 12: Impact of Types of Social Support on Self-Reported Health Status, Full Sample

Variables	Argentina		Cuba	
	Specification 1	Specification 2	Specification 1	Specification 2
	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)
Child Helps	-.221 (.161)	-.233 (.159)	-.052 (.036)	-.055 (.036)
Spouse Helps	-.064 (.187)	-.067 (.185)	-.150 (.054) *	-.150 (.054)*
Siblings Help	-.369 (.219)	-.389 (.209)		
Parents-In-Law Help	X	X	.260 (.273)	.264 (.271)
Grandchild helps	-.264 (.139)	-.266 (.128)	.104 (.098)	.107 (.099)
Other Family Helps	-.439 (.227)	-.438 (.228)	.079 (.084)	.082 (.084)
Non Relative Helps	-.298 (.166)	-.309 (.162)	-.114 (.083)	-.125 (.081)
Paid Help	-.305 (.087) *	-.304 (.087)*	-.291 (.135)	-.287 (.138)
Companion	-.031 (.036)	-.032 (.036)	.105 (.036)	.111 (.035)
Social Service Helps	-.187 (.085)	X	-.129 (.082)	X
Senior Citizen Center Helps	.026 (.113)	X	-.114 (.098)	X
Home Service Helps	X	X	X	X
Religion Helps	-.043 (.160)	X	-.044 (.084)	X
Other Community Help	.039 (.387)	X	.040 (.107)	X
Age	-.069 (.040)*	-.075 (.040)*	-.058 (.021)*	-.060 (.021)*
Age ²	.0005 (.0003)	.0005 (.0003)	.0004 (.0001)*	.0005 (.0001)*
Education	.040 (.012)*	.042 (.012)*	-.010 (.010)	-.011 (.010)
Education ²	-.001 (.001)	-.001 (.001)	.001 (.0005)*	.001 (.001)*
Work Status	-.001 (.040)	-.001 (.040)	.153 (.032) *	.153 (.031)*
Private Insurance	.146 (.058)*	.158 (.056)*	X	X
Public Insurance	.007 (.053)	.021 (.052)	X	X
Social Security Insurance	-.017 (.047)	-.004 (.046)	X	X
No Insurance	X	X	X	X
R-Squared	.0915	.0874	.0427	.0414

Source: SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000

*Denotes statistical significance

Sample Size 1011

Sample Size 1893

Table 13: Impact of Types of Social Support on Life Satisfaction, Full Sample

Variables	Argentina		Cuba	
	Specification 1	Specification 2	Specification 1	Specification 2
	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)
Child Helps	-.105 (.127)	-.099 (.125)	-.203 (.041)*	-.201 (.041)*
Spouse Helps	-.037 (.140)	-.052 (.141)	-.091 (.061)	-.088 (.061)
Siblings Help	-.308 (.205)	-.302 (.206)	X	X
Parents-In-Law Help	X	X	X	X
Grandchild helps	-.105 (.127)	-.368 (.121)	-.022 (.083)	-.022 (.087)
Other Family Helps	-.552 (.192)*	-.552 (.192)*	.022 (.083)	-.075 (.103)
Non Relative Helps	-.183 (.164)	-.169 (.161)	-.276 (.097)*	-.279 (.097)*
Paid Help	-.232 (.082)*	-.229 (.082)*	.336 (.209)	-.333 (.210)
Companion	.005 (.031)	.007 (.031)	.112 (.034)*	.117 (.034)*
Social Service Helps	.028 (.063)	X	-.083 (.082)	X
Senior Citizen Center Helps	-.042 (.108)	X	.058 (.071)	X
Home Service Helps	X	X	X	X
Religion Helps	.079 (.111)	X	-.041 (.080)	X
Other Community Help	-.235 (.373)	X	.022 (.083)	X
Age	.020 (.031)	.021 (.031)	-.005 (.019)	-.004 (.019)
Age ²	-.0001 (.0002)	-.0002 (.0002)	.0001 (.0001)	.0001 (.0001)
Education	-.002 (.004)	-.002 (.004)	-.009 (.008)	-.009 (.008)
Education ²	.00001 (.00006)	.00001 (.0001)	.0001 (.0004)	.0001 (.0004)
Work Status	.025 (.034)	.024 (.034)	.076 (.021)*	.075 (.021)*
Private Insurance	.104 (.045)*	.102 (.045)*	X	X
Public Insurance	.064 (.042)	.060 (.042)	X	X
Social Security Insurance	.060 (.042)	.055 (.040)	X	X
No Insurance	X	X	X	X
R-Squared	.0351	.0340	.0530	.0514

Source: SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000

*Denotes statistical significance

Sample Size 1043

Sample Size 1688

Table 14: Impact of Types of Social Support on Happiness, Full Sample

Variables	Argentina		Cuba	
	Specification 1	Specification 2	Specification 1	Specification 2
	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)
Child Helps	-.196 (.167)	-.154 (.152)	-.162 (.041)*	-.160 (.041)*
Spouse Helps	.117 (.060)	.102 (.068)	-.086 (.066)	-.084 (.065)
Siblings Help	-.295 (.229)	-.282 (.225)	X	X
Parents-In-Law Help	X	X	X	X
Grandchild helps	-.010 (.111)	-.009 (.109)	-.051 (.104)	-.049 (.104)
Other Family Helps	-.141 (.271)	-.135 (.268)	-.155 (.107)	-.149 (.104)
Non Relative Helps	-.169 (.172)	-.117 (.151)	-.199 (.095)*	-.197 (.096)*
Paid Help	-.160 (.085)*	-.149 (.083)*	-.095 (.199)	-.088 (.197)
Companion	.121 (.031)	.125 (.031)	.155 (.036)*	.161 (.036)*
Social Service Helps	.054 (.041)	X	-.091 (.086)	X
Senior Citizen Center Helps	-.094 (.117)	X	.102 (.074)	X
Home Service Helps	X	X	X	X
Religion Helps	-.042 (.038)	X	-.122 (.090)	X
Other Community Help	X	X	-.077 (.105)	X
Age	-.029 (.032)	-.026 (.031)	-.004 (.020)	-.003 (.020)
Age ²	.0002 (.0002)	.0002 (.0002)	.0001 (.0005)	.0001 (.0001)
Education	-.0005 (.004)	-.001 (.004)	.011 (.009)	.011 (.009)
Education ²	-.00002 (.0001)	-.00002 (.0001)	.001 (.0004)	-.001 (.0004)
Work Status	.068 (.028)*	.069 (.028)*	.095 (.024)*	.096 (.024)*
Private Insurance	.028 (.047)	.024 (.047)	X	X
Public Insurance	.042 (.039)	.039 (.039)	X	X
Social Security Insurance	.042 (.038)	.035 (.037)	X	X
No Insurance	X	X	X	X
R-Squared	.0459	.0434	.0410	.0380

Source: SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000

*Denotes statistical significance

Sample Size 934

Sample Size 1691

Table 15: Impact of Types of Social Support on Anxiety, Full Sample

Variables	Argentina		Cuba	
	Specification 1	Specification 2	Specification 1	Specification 2
	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)	Marginal Effects (Std. Error)
Child Helps	.189 (.134)	.177 (.130)	.166 (.036)*	.162 (.036)
Spouse Helps	-.036 (.069)	-.013 (.023)	.152 (.058)*	.154 (.057)
Siblings Help	.257 (.200)	.255 (.200)	X	X
	X	X	.193 (.293)	.188 (.292)
Grandchild helps	.106 (.110)	.099 (.108)	-.066 (.057)	-.064 (.058)
Other Family Helps	.425 (.229)*	.415 (.228)*	.093 (.079)	.090 (.079)
Non Relative Helps	.026 (.126)	.015 (.120)	.040 (.078)	.043 (.079)
Paid Help	.098 (.070)	.089 (.068)	-.026(.153)	-.029 (.151)
Companion	-.029 (.024)	-.033 (.025)	-.018 (.031)	-.023 (.030)
Social Service Helps	.036 (.058)	X	.086 (.080)	X
Senior Citizen Center Helps	.271 (.120)*	X	-.121 (.056)	X
Home Service Helps	X	X	X	X
Religion Helps	-.044 (.079)	X	.070 (.075)	X
Other Community Help	X	X	.115 (.099)	X
Age	.007 (.026)	.008 (.062)	-.006 (.017)	-.007 (.017)
Age ²	-.0001 (.002)	-.0001 (.0001)	-.000001 (.0001)	-.00001 (.0001)
Education	.005 (.003)	.004 (.003)	-.002 (.008)	-.002 (.008)
Education ²	-.0001 (.0001)	-.0001 (.0001)	.0001 (.0004)	.0001 (.0004)
Work Status	-.033 (.023)	-.033 (.023)	-.085 (.021)*	-.086 (.021)*
Private Insurance	.039 (.050)	.037 (.049)	X	X
Public Insurance	.044 (.041)	.043 (.040)	X	X
Social Security Insurance	.025 (.032)	.031 (.031)	X	X
No Insurance	X	X	X	X
R-Squared	.0481	.0365	.0400	.0365

Source: SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000

*Denotes Statistical Significance

Sample Size 1038

Sample Size 1892

Table 16: Impact of Social Support on General Well-Being, Only Those Who Need Help

Variables	Argentina		Cuba	
	Specification 1	Specification 2	Specification 1	Specification 2
	Coefficient Estimates (Std. Error)	Coefficient Estimates (Std. Error)	Coefficient Estimates (Std. Error)	Coefficient Estimates (Std. Error)
Child Helps	.050 (.396)	.043 (.391)	.069 (.214)	.069 (.213)
Spouse Helps	.264 (.401)	.257 (.396)	.166 (.240)	.167 (.239)
Siblings Help	-.169 (.521)	-.173 (.517)	X	X
Parents-in-law-help	X	X	.675 (.965)	.676 (.964)
Grandchild helps	.095 (.368)	.096 (.365)	-.065 (.232)	-.065 (.231)
Other Family Helps	-.642 (.603)	-.641 (.60)	.424 (.290)	.424 (.290)
Non Relative Helps	.019 (.411)	.010 (.405)	-.075 (.277)	-.074 (.275)
Paid Help	X	X	X	X
Companion	.046 (.271)	.042 (.268)	.204 (.215)	
Community Help	-.049 (.309)	X	.007 (.209)	X
Age	.099 (.242)	.097 (.240)	-.097 (.091)	-.097 (.091)
Age ²	-.0003 (.002)	-.0003 (.002)	.001 (.001)	.001 (.001)
Education	.035 (.077)	.037 (.076)	.022 (.043)	.022 (.043)
Education ²	-.003 (.005)	-.003 (.004)	-.001 (.003)	-.001 (.003)
Work Status	-.264 (.511)	-.274 (.504)	X	X
Private Insurance	.618 (.502)	.627 (.495)	X	X
Public Insurance	-.443 (.469)	-.443 (.466)	X	X
Social Security Insurance	.386 (.418)	-.390 (.414)	X	X
No Insurance	X	X	X	X
R-Squared	.2142	.2140	.0533	.0533

Source: SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000

*denotes statistical significance

Sample Size: 95

Sample Size: 317

Table 17: Impact of Social Support on General Well-Being, Full Sample

Variables	Argentina		Cuba	
	Specification 1	Specification 2	Specification 1	Specification 2
	Coefficient Estimates (Std. Error)	Coefficient Estimates (Std. Error)	Coefficient Estimates (Std. Error)	Coefficient Estimates (Std. Error)
Child Helps	-.444 (.278)	-.437 (.276)	-.591 (.077)*	-.593 (.077)*
Spouse Helps	.160 (.331)	.088 (.327)	-.515 (.126)*	-.512 (.126)*
Siblings Help	-.872 (.387)*	-.888 (.386)*	X	X
Parents-in-law-help	X	X	-.001 (.903)	.009 (.904)
Grandchild helps	-.552 (.295)*	-.552 (.250)*	-.052 (.219)	-.038 (.219)
Other Family Helps	-1.08 (.497)*	-.107 (.498)*	-.254 (.205)	-.238 (.205)
Non Relative Helps	-.522 (.295)	-.513 (.293)	-.687 (.178)*	-.707 (.178)*
Paid Help	-.545 (.157)*	-.534 (.155)*	-.821 (.370)*	-.802 (.371)*
Companion	.150 (.065)*	.154 (.065)*	.315 (.069)*	
Social Service Helps	-.142 (.142)	X	-.352 (.168)*	X
Senior Citizen Center Helps	-.307 (.227)	X	.024 (.204)	X
Home Service Helps	X	X	.950 (.907)	X
Religion Helps	.098 (.277)	X	-.322 (.180)	X
Other Community Help	-.229 (.625)	X	-.039 (.209)	X
Age	-.106 (.069)	-.110 (.069)	-.036 (.044)	-.038 (.044)
Age ²	.001 (.0004)	.001 (.0004)	.0003 (.0003)	.0004 (.0003)
Education	.026 (.009)*	.026 (.009)*	.013 (.019)	.012 (.019)
Education ²	-.0004 (.0001)*	-.0004 (.0001)*	-.0003 (.001)	-.0002 (.001)
Work Status	.082 (.072)	.080 (.072)	.325 (.059)*	.327 (.059)*
Private Insurance	.200 (.120)	.211 (.119)	X	X
Public Insurance	.122 (.099)	.128 (.098)	X	X
Social Security Insurance	.054 (.087)	.053 (.086)	X	X
No Insurance	X	X	X	X
R-Squared	.0733	.0703	.0950	.0903

Source: SABE - Survey on Health, Well-Being, and Aging in Latin America and the Caribbean, 2000

*denotes statistical significance

Sample Size: 934

Sample Size: 1665