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The Effects of Loss of Independence on Depression in Latin American Older Adults: Implications for Health Promotion

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Abstract:

The population of Americans age sixty-five and older will double over the next twenty-five years from 36 million to 72 million. The population of Latin American older adults is increasing at a similar rate. The study objective is to look at loss of independence due to poor health and its relationship with depression through the lens of psychosocial developmental theory. This is a secondary study, based on Sacramento Area Latino Study on Aging (SALSA Study), 1996-2008 from wave DS9, which is follow-up V4. The study sample included 167 older adults and found a significant difference between loss of independence and depression. Older adults who did not experience loss of independence also had high rates of depression. The findings highlight the fact that older adult depression is a major issue that needs to be addressed by healthcare providers since the loss of independence can increase the likelihood, as well as the severity, of depression.

Keywords: *Latin American, older adults, depression, loss of independence*

1. Background

The United States is seeing a growth of older adults like they have never seen before due to the baby boomers aging and increased longevity. It will double the population of Americans age sixty-five and older over the next twenty-five years from 36 million to 72 million. The older adult population will be twenty percent of people in the United States by the year 2030 (Gill, 2013). The Latin American population is not only growing but aging as well. According to the Administration on Aging (AOA), the Latin American population was 3.6 million in 2014, eight percent of the total population in that year, and is projected to increase to 21.5 million, which is twenty-two percent by 2060 (Administration on Aging (AoA), 2015).

Depression occurs in 7% of the older adult population and is underdiagnosed and undertreated as the symptoms can overlap with other medical problems that older adults encounter and Latin American seniors are no exception (Medical Health and Older Adults, 2015). About 92% of seniors have at the very least one chronic disease and 77% have two. The four most common chronic diseases that are the cause of death in this population are heart disease, cancer, stroke and diabetes (Healthy Aging Facts, 2015). Falls are another common issue for older adults. Falls can be caused by medications, vision problems, gait issues or strength and balance and can lead to injuries, hospitalizations as well as higher costs of health care (Bradley, 2011). With all of these different losses that individuals face as they age, depression can set in.

Depression is often present as a comorbid diagnosis with a medical issue (Blazer, 2003). Medical problems can be difficult to handle and can be accompanied with concerns such as chronic pain. All of these losses and medical issues that older adults face can lead to depression. The biggest risk factor among older adults who have depression is suicide, and the older adult population has the highest rate of suicide (Depression and Suicide in Older Adults Resource Guide, 2015). Older adults make up 12% of the US population but currently, account for 18% of all suicide deaths. The growth of older adults is a significant problem because the population 65 years and older will increase to 21.7% of the population by 2040, which is more than double the current percentage (Administration for Community Living, Administration on Aging, 2015). It is an alarming statistic since according to the Center for Disease Control there were 41,149 suicides in 2015 which would mean that approximately 7,406 of these deaths were older adults (Suicide and Self-Inflicted Injury, 2016). Since the older adult population is the fastest-growing section of the population, making the problem of later-life suicide a significant public health issue (Suicide in the Elderly, 2015).

2. Objectives

The purpose of this current study is to understand the loss of independence among Latin American older adults better. Understanding loss of freedom will help to equip social work professionals better to serve this population appropriately. Understanding how the loss of independence can affect an individual can lead to better interventions to deal with these needs as well as effective early intervention can help to prevent depression. This study will look at the relationship between loss of independence and depression level among Latin American older adults. It is hypothesized that a loss of freedom increases a Latin Americans older adult's chance of depression and the severity of it.

Understanding loss of independence is important to the social work profession. Social workers help those in need and as the older adult population continues to grow more services geared towards older adults will be necessary. The more information that there is about these individuals and how to best meet their needs the more successful social workers will be helping them. The more research there is on this subject, the more information there is for social workers to make policies and advocate for the population.

3. Literature Review

Depression is extremely prevalent in older adults; it is the most prevalent mental health issue in this population affecting 7% of the population (Medical Health and Older Adults, 2015). The older adult population is often willing to receive help for medical issues but often are unwilling to accept any help for mental health problems in particular for their depression symptoms (Barg, 2005; Blazer, 2003; Buchanan D., 2006; Meta-Synthesis, 2013). It is important to understand this distinction as it is an issue that needs to be addressed in the older adult population to ensure treatment (Rodda, Walker, & Carter, 2011).

A significant amount of research links depression to a multitude of different medical diagnoses due to having received a diagnosis as well as managing it such as cancer, lupus, and others. A recent diagnosis or the progression of a disease can also lead to depression which of course is more common as one gets older since the body breaks down (Blazer, 2003). Along with medical diagnoses often comes a more serious side effect which older adults are not able to take part in the activities in which they previously participated (Dimidjian S., 2008; Julien, Gauvin, Richard, Kestens, & Payette, 2013).

The literature has defined loss of independence in many ways. One loss of independence among older adults is the loss of vision. Vision loss is difficult to adjust to and would be a significant loss for an older adult (Cimarolli, 2012). Another loss that can occur is that of mobility. As individuals age, they may lose the ease of movement and may have to depend on others more often, which can be challenging for older adults (Turano, 2004). It is hard to be no longer able to drive oneself around and to have to ask for help which can be very disappointing (Salazar, Cruz, & Hernandez, 2010; Smith, 2012).

There is research centered on being able to complete one's Activities of Daily Living (ADL) which consist of bathing, dressing, using a toilet, transferring out of a bed or chair, and eating without assistance. A study by Covinsky in 2003 looked at older adults' function of ADL's after an acute hospitalization, and whether this led to a loss of independence, found that many older adults that are hospitalized are discharged with a lowers ability to complete ADL's (Covinsky, 2003). Covinsky's study observed patients upon admission and then again release to compare their ADL functioning. They found that after hospitalizations most patients were discharged having difficulties completing their ADLs.

This paper will look at the loss of independence and its relationship with depression through the lens of psychosocial developmental theory. The psychosocial developmental theory is based on Eric Erikson's stages of development. In this theory, it is necessary for individuals to successfully manage their way through each stage to move onto the next (Graves, 2006).

- The first stage is trust versus mistrust from birth to about one year where a baby either learns to trust others or doubts the world around them.
- The second state is autonomy versus shame and doubt which is from age one to three where children become more independent and confident and if they are not successful at this stage they can be dependent and doubt themselves.
- The third state is initiative versus guilt from ages three to about six where children assert themselves and initiate activity to feel secure in making decisions or develop a sense of guilt.
- The fourth stage is industry versus inferiority from age six to puberty where children can develop pride and can feel industrious or feel inferior and doubt their abilities.
- The fifth stage is identity versus role confusion during adolescence where one becomes more independent and create their character looking towards the future or be confused about where they fit into the world.
- The sixth stage is intimacy versus isolation in young adults where they are more intimate and tend to explore relationships and commitments and if unsuccessful can lead to isolation and loneliness due to fearing relationships and avoiding intimacy.
- The seventh stage is "generativity versus stagnation" in middle adulthood where careers are established; families are started, and the individual can feel like they fit into the world. If a person fails, this stage they can feel stagnant and unproductive.
- The eighth and final stage, which will be focused on for this current research study are integrity versus despair in older adulthood. At this stage, individuals slow down and can look at their accomplishments and feel satisfied. However, if the stage is not managed successfully, then the older adult can have feelings of guilt and despair which can be manifested in depression and hopelessness (Graves, 2006).

This theory, and the eighth stage provides a lens through which one can better understand the final stages of life. As this current study focuses on older adults, the eighth and definitive stage of integrity versus despair in one where the individual looks back on life and decides whether they had a successful life or feel guilty and have regrets about the life they have lived. If someone is depressed, they may feel like their life was wasted and feel more on the despair side of this stage, they may have regrets and feel very negative about their life (Perry, Ruggiano, Shtompel, & Hassevoort, 2015; Raudonis, McLean, & Caubel, 2012).

There are very reliable scales to measure depression such as the Hamilton Depression Rating Scale (HAMD-17), the Montgomery-Asberg Depression Rating Scale (MADRS), Beck Depression Inventory (BDI), Patient Health Questionnaire (PHQ-9) and the Center for Epidemiologic Studies Depression (CESD-R) to name a few (Uher, 2008). Since there are so many different scales that can be used to measure depression, there are limitations as to how different studies can be compared if they use different scales of measurement. With the population continuing to age, research with common language and scales of measurement are necessary to ensure construct validity and reliable statistics.

4. Methodology

The original study off of which the current study is based is called the Sacramento Area Latino Study on Aging (SALSA Study) ICPSR 22760 (Haan M. A., 2009). The principle investigators of the study were Mary Haan, Allison Aiello, Hector Gonzalez, Ladison Hinton, Bill Jagust, Josh Miller, Kari Moore, Lynn Blythe, Dan Mungus and William Seavey. The study was funded by the United States Department of Health and Human Services, National Institutes of Health and the National Institute on Aging. The original design was a longitudinal study and was collected for participants at 9-time points.

The original study was conducted to explore the effects that nutritional, social, cultural and cardiovascular risk factors have on health and dementia. The study examined the association of diabetes and function among Latin American adults that are sixty years and older. The study was collected in counties of Central Valley of Northern California. It included Sacramento, Yolo, Sutter, Solano, San Joaquin, and Placer counties that had proportional densities of Latinos greater than 10% based on the 1990 United States Census. The data was collected from 1996 through 2008, and there were 6 waves of the study. This current study is a secondary analysis of the SALSA Study. It is a cross-sectional design and uses wave DS9, which is the 4th follow-up.

The sampling frame for this study were Latinos who lived in Northern California. The information was gathered through random selection and conducted through survey data. A phone and address list was purchased of the 1990 Census of people age 60 and older with Latino last names that lived in the target area. Participants were contacted in three ways; by mail, phone and door to door visits. Up to ten visits were allowed by phone and five were allowed door to door. Each participant who contacted the study themselves was screened for eligibility (Haan M. A., 2009). The study used systematic sampling, and there were three requirements for participants to be eligible to participate in the SALSA Study.

The participant needed to 1) identify themselves as being Hispanic or having Latino ancestry; 2) be sixty years old or older, and 3) speak English, Spanish or both as primary languages. One thousand seven hundred and eighty-nine individuals were recruited for the study from March 1989 to June 1999 and they had an 82.2% response rate. After participants had been selected bilingual/bicultural technicians were the individuals who conducted the survey interviews in participant's homes to obtain demographic, health, and functional status information.

Survey instruments were translated from English to Spanish and then back-translated to English to ensure the accuracy of the translations if they were not already available in Spanish. Bilingual participants were able to select whichever language they felt most comfortable with survey administration (Hector M. González PhD1, 2001). It was a longitudinal study, with that had 12 years of follow-up. The overall response rate in those contacted was 82%. All eligible household residents could be included in the study, and 790 participants were living with at least one other study participant. The final original sample size was 1,789 (C. C. Wu, 2002).

The current sample size after missing data is taken out is 167. About marital status, 3 % were single/never married, 60.8 % were married, 24.1% were widowed, and 9.6% were divorced. Concerning country of origin, 54.8 % of the sample was born in Mexico, 39.8% was born in the United States, and 5.4% were marked as other. With regard to monthly household gross income, 52.2% had an income of less than \$1000, 18.6% had \$1000 to \$1499, 10.6% had \$1500 to \$1999, 9.9% had \$2000 to \$2499 and 8.7% had \$2500 or more. The religious affiliation breakdown is as follows: 13.2% are Catholic, 0.6% Mormon and 0.6% Jehovah Witness. Ninety percent of participants were retired, and 9% were still working. Concerning the primary language spoken, 28.7% of participants do not speak English at all while only 1.2% of participants do not speak Spanish.

4.1. Original Study

The original SALSA study looked at the following constructs: "aging, alcohol, arthritis, blood pressure, depression, diabetes, elderly, exercise, eye disease, eyesight, foreign born, health, health care, health problems, health status, heart disease, Hispanic Americans, hypertension, illness, income, job history, medical care, medications, mental health, older adults, physical condition, physical limitations, prescription drugs, religious affiliation, smoking, and vision impairment" (Haan M. A., 2009).

4.2. Current Study

- **Dependent Variable.** The dependent variable is depression. Participants will measure depression score on the CESD-R. Depression is a disorder where a person feels morose for an extended amount of time and is not able to get away from the feeling. It is usually accompanied with problems such as sleep, appetite, feeling tired and having difficulty concentrating. These issues need to be interfering with their ability to live life as they normally would (What is Depression, 2015). The scale that is used to measure depression is the CESD-R. The instrument is comprised of twenty questions, and the questions are scored by the answers that are given. The scores are added up, and it is determined whether the person meets the criteria for "major depressive episode, probable major depressive episode, possible major depressive episode," subthreshold depression symptom, or no diagnosis (About CESD-R, 2015). The reliability of the CESD-R depression score is $\alpha = 0.88$ (Thombs, Hudson, Schieir, Taillefer, & Baron, 2008). For the current study, all twenty questions were kept in to measure depression. These ordinal level variables were measured on a scale of 1-4, where 1= never, 2= little of the time, 3=some of the time, and 4= most of the time, or the participant could skip the question. All

Participants were asked to indicate the frequency of the following: bothered by things that usually don't bother, appetite poor and not feel like eating, could not shake off being sad, feel you were just as good as any other person who needed to be recoded, have trouble keeping your mind on doing things, feel depressed, feel everything was an effort, feel hopeful about the future which needed to be recoded, feel your life has been a failure, feel fearful, sleep restlessly, were you happy which needed to be recoded, talk less than usual, feel lonely, feel that people were unfriendly, did you enjoy life which needed to be recoded, did you have crying spells, feel sad, did you feel that people dislike you, feel that you could not get going. Four of the variables were scored in such a way that a 1 was in fact a negative response. Therefore, these four variables were reverse recoded to ensure all 20 were equal scored. All 20 variables were then added together to create a composite depression variable.

- **Independent Variable.** The independent variable in the current study is the loss of independence. Loss of freedom is operationally defined as the inability to complete a task or tasks that one was previously able to do. Several variables were used to create this loss of independence variable. If a participant answered "yes" to one or more of the following questions they are considered to have "loss of freedom." The questions are as follows: Have you had any falls since the last interview; Reason gave up driving my license: taken away, thought my eyesight wasn't good enough, a doctor said I should stop driving, I felt unsafe driving, my children or spouse said I should stop driving; suddenly lost the ability to express verbally or in writing, other. The responses were no, yes, don't know, refuse or skip. All variables were added together to create a loss of independence score. From there the variable was recoded such that a score of 0 was still coded as a 0 signifying "no loss of independence" and a score of 1 or higher was recoded as a 1 to mean "loss of freedom." Eight demographic variables were included in the study, each of the variables along with response categories are described. The participant's marital status: Single/never married, married, widowed, divorced, separated, living with someone as a spouse. Country of Origin: Mexico, U.S., other. Household gross income: Less than \$1000, \$1000 to \$1499, \$1500-\$1999, \$2000-\$2499 and \$2500 or more. Religious Affiliation: Catholic, Mormon, Jehovah Witness, Presbyterian, other and skip. Years of education, where participants provided the highest level of education. A frequency of speaking English and Spanish: Not at all, not very often, very often, and almost always. The number of family members in the house, where the participant provided the number of individuals living in the home. Last, whether or not the participant is retired no, yes or skip.

All statistical analyses were conducted utilizing the Statistical Package for the Social Sciences, version 21.0. Descriptive statistical analyses were used to describe the study sample. Inferential analyses, including a chi-square test, were conducted to assess the relationship between loss of independence and depression.

5. Results

The study sample included 167 older adults from wave DS9, which is follow-up V4 from the Sacramento Area Latino Study on Aging (SALSA Study), 1996-2008 (ICPSR 22760). Data was collected from 1996-2008. Table 1 shows the demographic information of the sample. The majority of the sample were married (60.8%), with 24.1% widowed and only 3% that were single and never married. Just over half of the sample (54.8%) were born in Mexico and 39.8% were born in the United States. Most participants in the sample almost always speak Spanish (74.7%) whereas only 31.4% almost always speak English. Among the sample, 89.8% were retired, and 52.2% lived off of \$1,000.00 a month or less.

Characteristics	Frequency	Percentage (%)
Marital Status		
Single/Never Married	5	3.0%
Married	101	60.8%
Widowed	40	24.1%
Divorced	16	9.6%
Separated	3	1.8%
Living with Someone	1	.6%
Country Born In		
Mexico	91	54.8%
U.S.	66	39.8%
Other	9	5.4%
Religion		
Catholic	22	13.2%
Mormon	1	.6%
Jehovah Witness	1	.6%
No Answer	143	85.6%
Speak English		
Not at All	47	28.7%
Not Very Often	50	30.5%
Very Often	11	6.7%
Almost Always	56	34.1%
Speak Spanish		
Not at All	2	1.2%
Not Very Often	23	13.9%

Characteristics	Frequency	Percentage (%)
Very Often	17	10.2%
Almost Always	124	74.7%
Attended School ^a		
No	23	13.9%
Yes	142	86.1%
Are You Retired		
No	15	9.0%
Yes	134	89.8%
Income		
Less than 1000	84	52.2%
1000 to 1499	30	18.6%
1500 to 1999	17	10.6%
2000 to 2499	16	9.9%
2500 or more	14	8.7%

Table 1: Characteristics of the sample (N=167)

^a Attend school was asked as, “Did you attend school?” With a follow, up question of how many years school was attended.

Table 2 presents descriptive information on the independent and dependent variables, loss of independence and depression. While the mean depression score for the sample was 28.93, depression was also looked as a categorical variable using information from a valid depression scale. The majority of the sample 90.8% have major depression, while 17.4% have moderate depression and only three people 1.8% do not have depression. The independent variable, loss of independence, includes falls, having to stop driving, loss of eyesight and loss of communication. Loss of freedom was divided into “no loss” meaning participants have not experienced any of the losses as mentioned earlier, and “loss” which means they have seen at least one of the losses mentioned above. Ninety participants, 53.9% have not suffered any loss and 77 participants 46.1% have experienced at least one loss.

Characteristics	Frequency	Percentage (%)
Depression		
No Depression	3	1.8%
Moderate Depression	29	17.4%
Major Depression	135	80.8%
Loss of Independence		
No Loss	90	53.9%
Loss	77	46.1%
Characteristics	Mean	SD
Depression	28.93	.500

Table 2: Characteristics of the Independent and Dependent Variables (N=167)

^a According to the CESD-R test. A score of less than 15 signifies no depression, 15-21 mild to moderate depression and over 21 major depression

The primary hypothesis was that a loss of independence increases a Latin Americans older adult’s chance of depression and the severity of it. A chi-square test was calculated comparing the frequency of loss of freedom with the level of depression to test this hypothesis. A significant difference was found ($\chi^2(2) = 7.93, p < 0.01$ and is shown in Table 3, while a Cramer’s V statistic suggested a weak relationship 0.19. Table 4 indicates that among those who had experienced loss of independence, the majority 89.9% had major depression. Among those who had not experienced loss of freedom 73.3% had major depression. The number of participants with major depression who have experienced loss of freedom is very similar to the number of participants who have not experienced loss of independence suggesting that major depression is common among Latin American older adults whether or not they have experienced loss of independence.

Among those with moderate depression, 21 have suffered the loss of freedom compared to only eight who have not experienced loss of independence. There were no participants who experienced loss of freedom that did not have depression. Three older adults did not have depression and also did not have loss of freedom. The mean depression score for those with no loss of freedom was 27.68 while it is higher for those with the loss of independence 30.39. Depression and loss of freedom are shown graphically in Figure 1, where it can again be clearly seen there are high rates of major depression among both groups.

Independent Variable	Depression Variable		Chi-squared (df)	P
	M	SD		
Loss of Independence				
No	27.68	8.654	7.93(2)	.019*
Yes	30.39	7.851		
* p < 0.05				

Table 3: Inferential results for Chi-Squared test

Depression and Loss of Independence N (%)			
	No Depression	Moderate Depression	Major Depression
Loss of Independence			
No	3 (3.3%)	21 (23.3%)	66 (73.3%)
Yes	0 (0%)	8 (10.4%)	69 (89.6%)

* p < 0.05
 Figure 1. Depression and loss of independence

Table 4: Crosstabs for loss of independence and depression

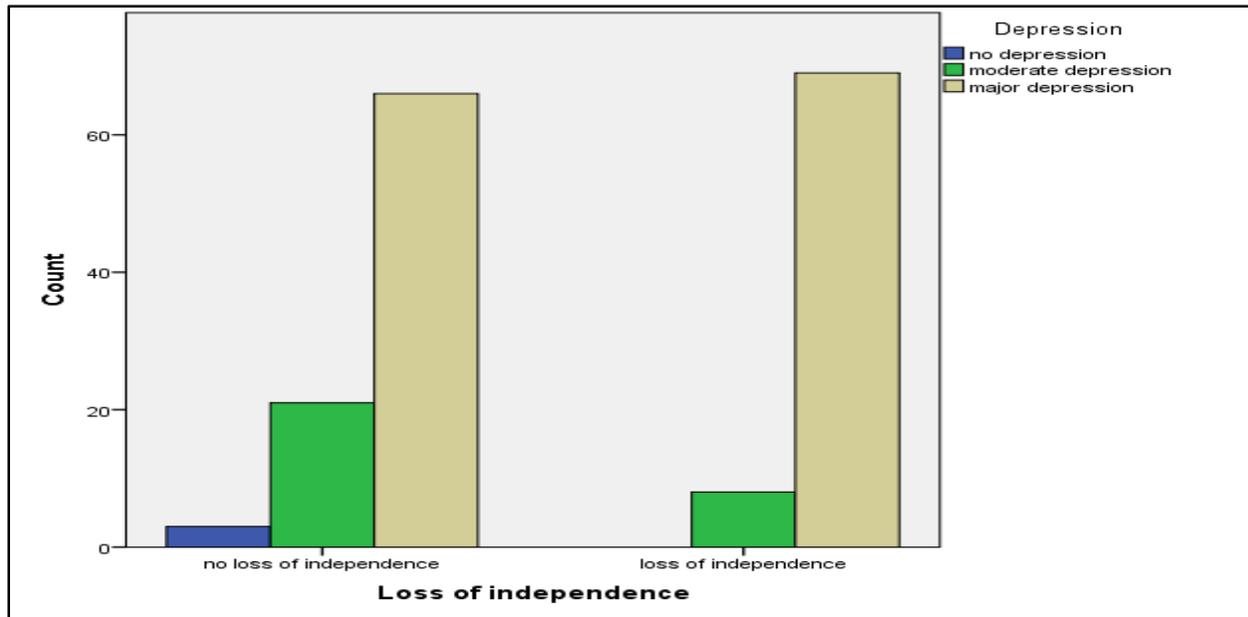


Figure 1

6. Discussion

The objective was to determine if the loss of freedom has an effect on depression on Latin American older adults. Loss of independence was measured by whether a participant had suffered a fall, had to stop driving, lost vision or the ability to communicate. Depression was measured by a validated depression scale, the CESD-R. It was hypothesized that having loss of independence would increase depression in Latin American older adults. There are statistically significant differences between groups. The findings do support the hypothesis, but it was concluded that there are high rates of major depression among both groups. A surprising finding was this high incidence of major depression among the Latin American older adults. The statistics found that depression is very prevalent among this population and that it is a big issue. It made the subject of depression overshadow that of loss of independence in the fact that depression is found in those with and without depression.

The findings of these types of losses having a connection with depression are consistent with other studies previously mentioned that observed loss of independence does increase the possibility or severity of depression. The previous literature defined loss of freedom differently than how the current study described it and the lack of a unified scale of loss of independence make comparisons difficult. In Covinsky’s study where the patient’s functions of ADL’s were measured, the study found that after a hospital stay, which indicates a health issue, patients were considered to have a difficult time completing their own ADL’s. It resulted in an increase of depression from the participants due to the loss of independence (Covinsky, 2003).

A strength of this study is that it shows the importance of identifying when a failure occurs and providing the appropriate support since it does have a correlation with increased depression. It is important as there is limited research on this subject and the more studies that are done that can show this relationship would help to make others aware of the problem. As the older adult population is growing at a faster rate than the rest of the population, this is an important connection to consider. The Latin American population is growing within the United States as well and with this comes the growth of the Latin American older adult population.

The results do show a relation between the independent and dependent variable and support the hypothesis. Looking at the loss of independence and depression through Erickson’s stages of development helps in understanding the findings. The theory also contributes to understanding the importance of accepting one’s future and dealing with the inevitable loss of independence that older adults will have to face at some time in their life (Covinsky, 2003). It allows further studies to view the loss of independence and depression and compare their findings using this same theory to see if other connections can be made. The use of a recognized and often used depression scale was a strength as it is a reliable measure which can be retested efficiently in future research.

There are several limitations to this study. The fact that the sample was small and only in Latin American older adults is a restriction to this study as it does not adequately represent the national demographics. Even though the study was done with bilingual interviewers and everything was translated, this does not account for the generation and cultural stigmas of depression and how that

could have impacted the results. These stigmas and cultural influences could differ between nationalities, and that could be the same even from different Latin American countries. There was some limited data which was a limitation because other comparisons could have been made with further data.

Gender was a demographic that would have been beneficial to assess any differences between males and females. A larger sample from more than one location would also be beneficial to study depression that comes from the inevitable losses of independence that aging brings as well as what is being done to address the amount of depression among Latin American adults as well as all older adults. Future research would benefit from including other ethnicities and hopefully even use a group of participants that would reflect the current demographics of the nation.

The development of new policies to address the screening and treatment of older adult's depression would be very beneficial. More education and outreach work need to be done on the stigma and the stereotype of having a diagnosis of depression as well as that of receiving treatment. Loss of independence is inevitable, and the potential negative impact on the mental health of an individual should be recognized and treated. Geriatric health education training for physicians, social workers and clinical staff working in the mental health field should focus on awareness of this connection.

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