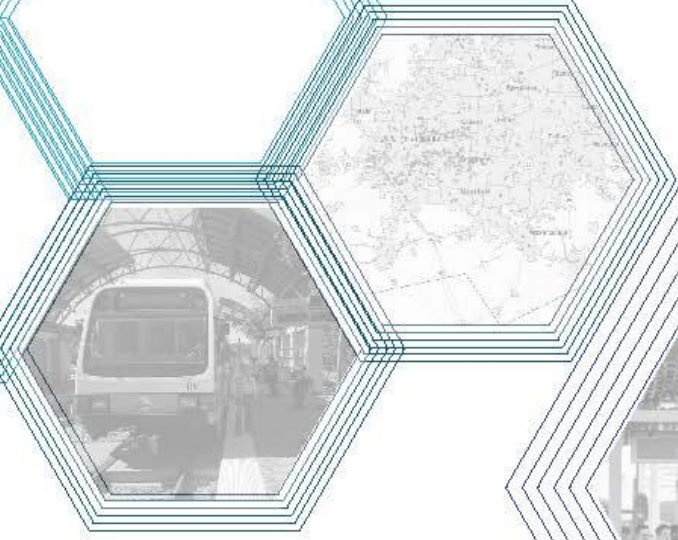




IMPROVING MOBILITY OF
TRANSPORTATION-DISADVANTAGED
OLDER ADULTS: A COMMUNITY-BASED
INTERVENTION FOR HISPANIC/LATINO
POPULATION

SIWON JANG, PH.D.
ET AL.



FINAL REPORT

**IMPROVING MOBILITY OF
TRANSPORTATION-DISADVANTAGED
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INTERVENTION FOR HISPANIC/LATINO
POPULATION
FINAL PROJECT REPORT (DRAFT)**

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16. Abstract In the United States, there is a well-established link between driving cessation among older adults and declines in their physical, social, and cognitive function. The Healthy Buddy Program (HB) was established in 2017 to address public health and transportation planning challenges among aging populations at a community level. Specifically, this community-based program paired trained college students with transportation-disadvantaged older adults to help them identify relevant transportation and health resources in their area. Expanding upon this, the research team sought to determine whether a Spanish-language iteration of HB could improve mobility and quality of life among Hispanic/Latinx older adults in Hillsborough County, Florida and Dallas-Fort Worth Metroplex and San Antonio, Texas. A pilot-test of the Spanish-Language Healthy Buddy Program (SHB) was implemented in both locations. Four (4) participants were enrolled in Florida and 25 were enrolled in Texas. Due to Covid-19, older adults and student volunteers conducted the entirety of the program remotely, by phone. A pre- and post-survey was completed by 23 participants to identify any changes in measures of overall quality of life. The mean score for the post-test (61.17) was higher than the mean pre-test score (59.30) but was not statistically significant ($p > .10$). In-depth interview participants were receptive to the program model and provided insights that could be used to develop effective strategies to improve mobility among Hispanic/Latinx older adults.			
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Abstract

In the United States, there is a well-established link between driving cessation among older adults and declines in their physical, social, and cognitive function. The Healthy Buddy Program (HB) was established in 2017 to address public health and transportation planning challenges among aging populations at a community level. Specifically, this community-based program paired trained college students with transportation-disadvantaged older adults to help them identify relevant transportation and health resources in their area. Expanding upon this, the research team sought to determine whether a Spanish-language iteration of HB could improve mobility and quality of life among Hispanic/Latinx older adults in Hillsborough County, Florida and Dallas-Fort Worth Metroplex and San Antonio, Texas. A pilot-test of the Spanish-Language Healthy Buddy Program (SHB) was implemented in both locations. A total of 29 participants were enrolled in Texas and Florida. Due to Covid-19, older adults and student volunteers conducted the entirety of the program remotely, by phone. A pre- and post-survey was completed by 23 participants to identify any changes in measures of overall quality of life. The mean score for the post-test (61.17) was higher than the mean pre-test score (59.30) but was not statistically significant ($p > .10$). In-depth interview participants were receptive to the program model and provided insights that could be used to develop effective strategies to improve mobility among Hispanic/Latinx older adults.

Chapter I: Introduction

Background

The United States population is aging. By 2030, it is projected that one-fifth of the United States population will have reached retirement age and that by 2034, for the first time in the nation's history, older adults will outnumber children (Vespa et al., 2018). This anticipated shift in demographic composition has significant social and economic implications at the community level. In response, the World Health Organization (WHO) has called for strategies that encourage healthy aging within a framework of aging in place. Key to the WHO Ageing and Health Strategy is ample consideration of the built environment, and accessibility of resources and services at the local/community level (WHO, 2017)

In response to the implications of a growing number of older adults, communities in the United States should prepare to address their specific needs. One particular concern is the widespread impacts of driving cessation on a largely car-dependent society. Cognitive and physical declines associated with aging can lead to the loss of an individual's safe-driving capabilities. Unfortunately, driving cessation in older adults can present significant challenges when there are no viable and safe alternatives to driving. Previously car-dependent adults may struggle with accessing healthcare, attending social activities, and conducting errands, and as a result, have poorer physical and mental health and experience a decline in quality of life (Edwards et al., 2009; Chihuri et al., 2016). The lack of viable transportation can also exacerbate existing chronic health conditions in many older adults by delaying proper medication, management, and treatment (Wills, Whitman, & English, 2017; Syed, Gerber, & Sharp, 2013).

Beyond the obvious and more daunting physical, economic, and environmental barriers to functional mobility in older adults (e.g., geographic access to public transit stops, cost of transportation services, ADA accessibility), the lack of awareness of community resources that are available to older adults is one of the barriers that communities can address with low-cost, grassroots programming.

The Healthy Buddy Program (Phase I & II)

The Healthy Buddy Program (HB) is a community-based initiative that pairs college students with transportation disadvantaged, community-dwelling older adults. The HB program was established in 2017 to improve older adults' self-efficacy in accessing transportation and health resources available in their community. The goal of the program was to increase older adults' awareness of *existing* resources by meeting one-on-one with a trained student "buddy" from a relevant field of study (e.g., public health, transportation planning, social work).

Phase I of HB sought to ascertain the need for such a program in Hillsborough County, Florida, and to identify resources that could benefit transportation-disadvantaged older adults, specifically members of the community who were 65 and older, managing one or more chronic illness, and who lacked reliable or safe transportation options. The research team conducted a community resource assessment and developed a test-version of the HB program website. The website would act as a hub of local transportation and health information for students, older adults, and their family caregivers. Interviews were held with a small group of transportation-disadvantaged older adults from Hillsborough County. Interview participants discussed their transportation and health needs, and provided feedback on the HB website and program model. The website and program model were finalized from the Phase I interview findings.

Phase II was the first pilot test of HB. The inaugural group of University of South Florida (USF) student volunteers were recruited by posting flyers in USF common areas, emailing college listservs, and presenting in courses with volunteer requirements. Each student attended an HB orientation and completed a background check. Older adults were recruited by advertising the program and the research study at senior activity centers in Hillsborough County. Participants were assigned to a control or intervention group based on their senior center location. Older adult participants at all locations participated in the pre-survey. Participants in the intervention group were then paired with trained student volunteers, who met with their older adult buddy for the first HB session to discuss their specific health and transportation needs. Students were required to use the dialogue guide provided at the orientation and to take notes throughout the sessions. The students utilized information from the discussion to identify relevant community resources, catalogued on the HB website (<https://www.hbuddy.org>). After consulting with other members of the research team, students developed personalized profiles for their older adult buddies, available both on the HB website and in print, depending on the preference of the individual older adult. The students reviewed the identified resources with their older adults in the second HB session. Post-surveys were issued six weeks after the second session. Post-surveys were also issued to participants in the control group. Survey results were analyzed using a paired samples t-test. In the intervention group, mean post-test scores were higher than mean pre-test scores, but the difference was not statistically significant. However, anecdotally, during in-depth interviews, participants said that they enjoyed the program and that they learned about resources that they were unaware of prior to joining the program.

From site visits in Phase I and II, the research team observed a need to expand the program to accommodate racial and ethnic minority groups, specifically Hispanic/Latinx older adults who are not fluent in English. In Hillsborough County, approximately 30% of the population is Hispanic/Latinx, compared to 18% at the national level (U.S. Census, 2018). Therefore, it is unsurprising that during recruitment visits to local senior centers, there was substantial interest in the program from Hispanic/Latinx older adults. From this, the research team sought to improve its reach to the Hispanic/Latinx community by developing a Spanish-language accessible and culturally-relevant iteration of HB for Phase III of the research.

Considerations for Hispanic and Latinx Older Adults

The population of Hispanic/Latinx older adults in the United States is expected to grow rapidly, making up 22% of all adults over age 65 by the year 2060 (U.S. Department of Health and Human Services, 2018; U.S. Census, 2018) (Figure 1). In 2017, it was estimated that almost 20% of Hispanic women and 14% of Hispanic men over the age of 65 lived below the poverty line, compared to 8% and 6% of non-Hispanic white older adult men and women, respectively (Li & Dalaker, 2019). As such, the Hispanic/Latinx older adult population is classified as one of the most socioeconomically disadvantaged groups in the United States. These socioeconomic barriers are further exacerbated by language barriers, since Hispanic/Latinx older adults are less likely to speak proficient English than their younger counterparts (Patten, 2016). Moreover, in light of the Hispanic Paradox¹, it is possible that Hispanic/Latinx older adults live longer while also experiencing significant functional mobility issues for a greater proportion of their lives.

¹ The Hispanic Paradox describes lower mortality rates, and longer lifespans, observed among Hispanic/Latinx-Americans, despite, on average, occupying a lower socioeconomic status compared to non-Hispanic white Americans (Markides & Coreil, 1986).

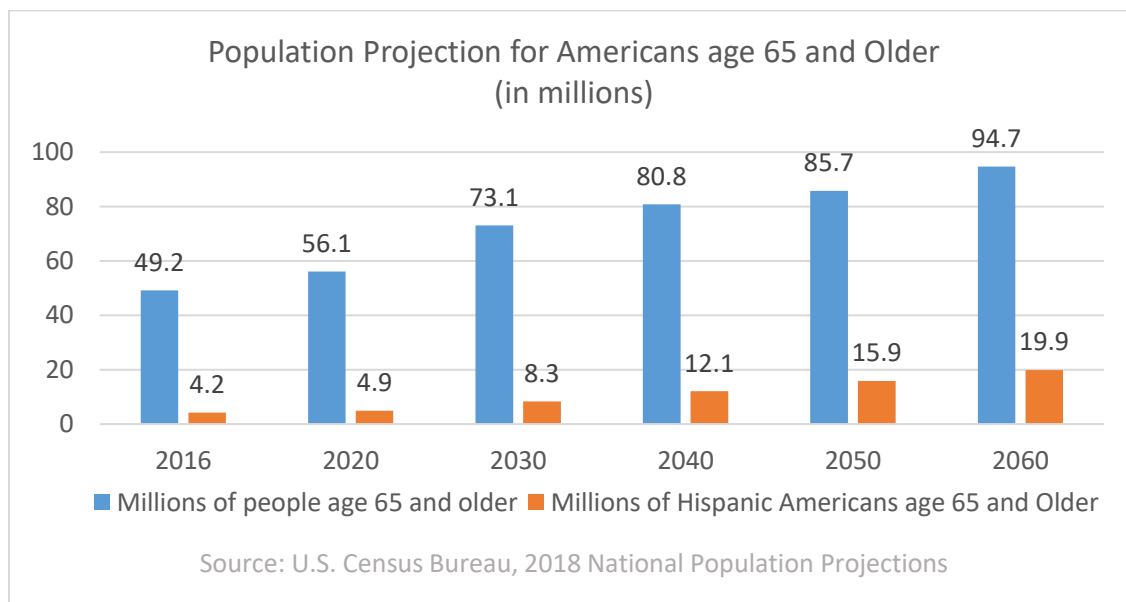


Figure 1. Population projection for all older adults and Hispanic older adults in the US.

Spanish-Language Pilot Program

With this in mind, there was a clear need for community-based, culturally-sensitive programs geared towards sustaining/improving Hispanic/Latinx older adults' functional mobility and quality of life.

This research project sought to ascertain functional mobility and health challenges specific to transportation-disadvantaged Hispanic/Latinx older adults in order to adapt and implement the HB program model and expand the scope of the program to cater towards Hispanic/Latinx older adults' specific needs. Through conducting in-depth interviews and surveying the target audience, the interdisciplinary research team (including transportation engineers, public health researchers, and social workers) sought to reevaluate the potential effectiveness of HB on the self-efficacy of Hispanic/Latinx older adults.

The Spanish-Language Healthy Buddy Program (SHB) sought to maximize the effectiveness of HB Phase I and Phase II by addressing the specific needs that Hispanic/Latinx older adults might have. The primary goals of SHB implementation were (1) updating program materials, (2) recruiting bilingual (English-Spanish-speaking) student volunteers from multidisciplinary backgrounds, and (3) testing the program's efficacy among Hispanic/Latinx older adults.

To expand the scope of the project further, the USF research team partnered with the University of Texas at Arlington (UTA) School of Social Work and included additional sites in Dallas-Fort Worth (DFW) Metroplex, TX. Hispanic/Latinx older adults make up approximately 30% of the DFW Metropolitan area population. In particular, 41% of Dallas County residents are Latinx, and 29% of Tarrant County residents are Latinx (U.S. Census, 2018).

Both sites intended to adopt a similar methodology to Phase II while targeting Hispanic/Latinx older adults who speak Spanish as their primary language. The SHB pilot began in January 2020 and concluded in June 2021. This pilot program sought to implement and test the Spanish-language program model among the targeted population, Hispanic/Latinx older adults in Hillsborough County, Florida, and DFW Metroplex, Texas. Due to the COVID-19

pandemic, the UTA research team expanded its recruitment pool by including older adults living in San Antonio, where 64% of the population is Hispanic/Latinx (U.S. Census, 2018). The program utilized the pre- and post-surveying evaluation design to measure changes in perceived health and well-being among older adults, and to determine the replicability of the project in other communities with a significant population of Hispanic/Latinx older adults.

Report Organization

This report serves to discuss findings obtained in the pilot SHB program, especially in light of the impacts of the COVID-19 pandemic on program implementation. Following the introduction, the report is divided into four chapters. Chapter 2, *Methodology*, discusses the methods adopted for testing the efficacy of the SHB pilot in Hillsborough County, Florida, and DFW Metroplex and San Antonio, Texas. Chapter 3, *Results*, details the survey findings as well as observations relating to program administration. The results are reported in Chapter 4, *Discussion*, and summarized in Chapter 5, *Conclusions*.

Chapter II: Methodology

Research Design

The Spanish Healthy Buddy Program (SHB) pilot comprised pre- and post-surveys to assess its effectiveness among Hispanic/Latinx older adults who participated in the program. The program was divided into six key tasks: (1) literature review and resource assessment, (2) Healthy Buddy website update to Spanish version, (3) recruitment and training student volunteers, (4) participant recruitment (5) program implementation, and (6) data analysis. All study protocols and materials were approved by the University of South Florida Institutional Review Board (STUDY000283) and the University of Texas at Arlington IRB (#2020-0391).

Literature Review and Resource Assessment (Task 1)

To better improve access to community-based transportation and health-related resources among Hispanic/Latinx older adults, SHB adapted the program's original model and implementation strategies. This included a literature review of transportation barriers and disparities in health care access among Hispanic/Latinx populations. The UTA research team led a scoping review to map the literature regarding barriers impacting Hispanic/Latinx older adults' access to health care services. A total of 23 articles were selected; the list of barriers charted included language barriers, low-levels of health literacy, fear or distrust of health care services or providers, stigma or negative attitudes toward health care services, lack of information on disease management, low-socioeconomic status, not having health insurance, expensive health care costs, and limited transportation options. The research team has developed a manuscript based on the literature review, and it is currently under review. In addition, a resource inventory of local transportation options for each study site built upon the existing HB database by identifying transportation and health/wellness resources in Spanish.

This in-depth process assisted in identifying the unique needs of this underserved population. In utilizing the findings of the literature review, researchers modified and refined the information and resources for the program. Then, bilingual student volunteers were trained remotely by the research team. In training, the student volunteers learned how to interact with older adults and administer the program through remote technology methods. The training modules were developed by USF researchers and reviewed with community partners. The resources were re-examined by researchers and student volunteers to ensure that they would meet the individually unique needs of older adults during buddy sessions.

Healthy Buddy Website Update (Task 2)

The results of the literature review and resource assessment (Task 1) were utilized to update the existing Healthy Buddy website. The research team worked to convert the in-person Healthy Buddy format to an interactive online format for project continuation under COVID-19. Specifically, the team created Spanish recruitment flyers for virtual advertisement to prospective student volunteers and older adult participants; a Google Voice account was also created, and the phone number was placed on the flyers for interested participants to call for eligibility screening. Secondly, the team tested Microsoft Teams to ensure successful communication with older adult participants while delivering program information and conducting assessments (pre- and post-surveys). In creating the detailed health and transportation packets, a Spanish-language accessible version of the Healthy Buddy website (<https://hbuddy2.org>) was developed, led by the

USF research team. The website incorporated Hispanic/Latinx culture, included language-specific resources to share with older adult participants, and provided COVID-19 vaccination information and locations in Hillsborough County, FL, and DFW and San Antonio, TX.

Student Volunteer Recruitment and Training (Task 3)

In order to recruit bilingual student volunteers for the program, USF researchers contacted various academic programs on campus such as the College of Public Health, World Languages, Finance, College of Nursing, School of Social Work, and USF Spanish clubs and organizations. Flyers were developed and distributed through relevant university email listservs and shared with course instructors. Specific recruitment strategies for student volunteers included (1) partnering with service-learning courses (e.g., courses that require field experience), and (2) promoting the volunteer opportunity for the whole student body on campus. Flyers directed interested students to sign-up through the HB website or contact the volunteer coordinator for more information. Ultimately, due to COVID-19, the program recruited and retained three student volunteers from the College of Public Health, World Languages, and Finance.

Before they were paired with an older adult buddy, each student was required to (1) attend a one-hour online volunteer training and workshop, and (2) obtain a Social/Behavioral Investigators and Key Personnel certification through USF IRB. Healthy Buddy research staff kicked off the volunteer training process with a one-hour training and workshop event. A Microsoft Teams meeting invitation was sent to all volunteers and research staff prior to the event. All volunteers were provided with a Student Volunteer Guide, Session One Guide, an example of the IRB informed consent, and an example of the survey instrument within an online presentation. The presentation also covered the mission of the program, as well as an overview of the research methodology and IRB certification instructions. Following the student volunteer training, USF research staff instructed students to take the required IRB certification course so that they could be added to the study as key personnel prior to program intervention.

At UTA, all of the students were recruited in the School of Social Work. Bilingual students were hired as GRAs for this project and supported not only literature review and data collection efforts, but also recruitment and data management. The investigator provided a training session and held a weekly meeting. All of the students completed a background check and Good Clinical Practice Training for Social and Behavioral Research. For community-based resource identification and assessment, the investigator from UTA included an assignment in the Master-level course, Aging Policy and Social Justice.

Both study sites worked together, and all research team members were available to students via Microsoft Teams meetings, phone calls, and email to assist with timely completion of the IRB training and certification process and their research activities.

Participant Recruitment (Task 4)

Similar to HB, the original SHB research plan relied heavily on community senior activity centers as a convenient and safe location for study recruitment, intervention, and evaluation of SHB. As it became clear that the impacts of COVID-19 would be long-lasting, the research team sought alternatives to meeting with older adults in-person.

Following the closures of County Senior Center buildings, the USF team reached out to staff at Hillsborough Senior Centers to ascertain whether they had developed any plans to maintain contact with members and whether they would offer remote programming to their

Spanish-speaking members. Hillsborough County Senior Centers set up a schedule of weekly conference calls in English and Spanish for each center. Members could call into the meeting to listen to a variety of audio-guided activities such as aerobics, presentations on healthy eating, and even art classes. A member of the USF research team called into these weekly meetings to talk about the program and provide details about the research study. County staff at each participating location were provided with recruitment flyers and assisted the research team with identifying potential participants. All interested older adults were provided with a phone number for the program and instructed to leave their name and phone number. A research team member would call back participants and screen them for eligibility before enrolling them in the study.

Eligibility requirements were also outlined on all recruitment calls and flyers. More specifically, participation in the study required that the following conditions be met:

- Participant was age 65 or older
- Participant indicated they lack regular access to transportation
- Participant indicated they manage a chronic health condition
- Participant confirmed they have never been diagnosed with dementia

Since all recruitment materials and outreach efforts were conducted in Spanish, the requirement that participants speak Spanish was not included in the eligibility list.

In Texas, the UTA research team worked closely with The Senior Source, not only to recruit participants, but also for guidance on research activities and to expand partnerships with other community-based organizations that predominantly serve Hispanic/Latinx adults. The Senior Source's partnership and referral helped effectively build trust and relationships with other organizations and targeted groups. As a result, the research team partnered with the Dallas Latino Resource Coalition, JPS Health Network, Mexican Consulate, Baylor Scott and White Healthcare Provider Network, and Wesley-Rankin Community Center in DFW Metroplex, and the Good Samaritan Center and Park View Senior Housing in San Antonio. The research team distributed flyers and gave a virtual presentation about the research project to recruit participants. Those who were interested in this project contacted the research team.

Program Implementation and Outcome Measurement (Task 5)

In the first session, students introduced themselves to the older adults, reviewed the study protocol, and interviewed them about their health and transportation needs. All of the participants were provided with a pre-survey (session one). The pre-survey was read aloud during the first session in Microsoft Teams and inputted by a student volunteer via Qualtrics, an online survey platform. Specifically, the pre-survey determined perceived quality of life in order to establish a baseline prior to the program intervention. The survey consisted of 26 questions, two of which were matrix tables that asked participants whether they agreed or disagreed with multiple statements. Participants were provided with gift card (\$10) compensation for completing the first session and pre-survey.

The first matrix was adapted from the Survey of Health, Aging and Retirement in Europe (SHARE) self-administered questionnaire (Börsch-Supan et al., 2015) to measure quality of life and well-being. The second matrix was developed from the Computer Anxiety Scale (CAS) (Cohen & Waugh, 1989) to understand participants' use of technology and openness to a computer-based intervention. Students maintained detailed notes about their meeting and the responses provided by their buddy. In addition, the UTA research team utilized the General Self-

Efficacy Scale by Schwarzer and Jerusalem (1995) to assess a general sense of perceived self-efficacy in order to predict coping with daily challenges. This scale consisted of 10 questions using a four-point Likert scale (not at all true – exactly true). The team also used the short version of the established Older People’s Quality of Life Questionnaire (OPQOL-BRIEF) (Bowling et al., 2013). The questionnaire includes 13 items with a preliminary single item on global QoL. It was coded using a five-point Likert scale (very bad to very good).

Following the first session, each student volunteer met with a research staff member remotely and utilized information gathered during the interview to identify available community health and transportation resources that could benefit their paired older adults. Specifically, lists of affordable and free health and transportation resources were gathered from literature and reliable online resources (Task 1). Students then utilized the SHB website (<https://hbuddy2.org>) to identify relevant local resources and create a personalized resource packet for the participant. The website was created on Wix, a web-development tool, to display local health and transportation information within a centralized and accessible location. All selections by student volunteers were reviewed and discussed by program research staff. The resource packets were printed and mailed to participants prior to the second session.

During the second session, students met with their older adults via Microsoft Teams to review the selected resources and answer any questions that they may have. If requested, students could help their buddies schedule rides or sign-up for services. All participants were reminded of a follow-up survey within the next several weeks.

The post-survey was delivered remotely via Microsoft Teams and inputted by the student buddy. In comparison to the pre-survey issued at the start of the study, the post-survey was conducted to determine participants’ perceived quality of life and self-efficacy. The research team distributed the survey six weeks after their buddy session and mailed gift card compensation (\$15). Due to the remote nature of the program and the low number of participants, the overall timeline was maintained and older adult participants were responsive in scheduling sessions and the 6-week post-survey.

Data Analysis (Task 6)

Pre-and post-survey data were entered into Qualtrics Survey Software for analysis. Each participant was assigned a unique code so that survey data from the same participant could be compared over time using a paired samples T-test. Following coding of the survey responses, the T-test analysis was completed using SPSS statistical software. A total of 29 pre- and post-survey responses were received from the USF and UTA teams, and 23 cases were eligible for data analysis.

Chapter III: Results

Literature Review Findings

Hispanics represent one of the largest ethnic minority groups in the United States (Hummer & Hayward, 2015; Velasco-Mondragon et al., 2016). In addition, Hispanic populations are expected to rapidly increase in the coming decades, surpassing other minority groups such as African Americans (Dupree et al., 2010; Hummer & Hayward, 2015). For example, by the year 2060, the U.S. Census Bureau projects that Hispanic populations will increase by 28.6%, or 119 million (Velasco-Mondragon et al., 2016). As the number of Hispanic older adults increases, so will the need to provide health care and treatment for this population (Barrio et al., 2008). Across the literature, Hispanic older adults are found to have a higher prevalence of physical and mental health issues, greater rates of disabilities (Barrio et al., 2008), and higher morbidity and mortality rates (Rogers, 2010). Despite these trends, Hispanic older adults often have poorer access to health care services compared to non-Hispanic older adults (Rogers, 2010). Hispanic older adults are reported to complete fewer health screenings, attend fewer follow-up care appointments, are more likely to discontinue medications without doctor supervision, and encounter greater economic and cultural barriers when seeking or continuing health care (Peterson-Besse et al., 2014; Velasco-Mondragon et al., 2016). In addition, research indicates that Hispanic populations often underutilize mental health services and hold a greater stigma against using them (Dupree et al., 2010; Peterson-Besse et al., 2014).

Social Determinants of Health (SDoH) refers to conditions in the social environment people are born into, live with, and learn from (Singh et al., 2017). Varying conditions influence people's lives and determine a wide range of health and well-being outcomes (Singh et al., 2017). The Institute of Medicine of the National Academies (2014) identified five domains: (1) sociodemographic (e.g., race and ethnicity, education, employment, financial resources), (2) psychological (e.g., health literacy and patient engagement), (3) behavioral (e.g., physical activity, tobacco use, and exposure), (4) individual-level (e.g., social connection), and (5) neighborhood and communities (e.g., median household income and poverty level) that can be measured to improve health and health care for underserved populations.

Across the literature, researchers have reported that Hispanics are disproportionately impacted by sociodemographic factors, such as financial and health resources, language and literacy, and behavioral factors. First, Hispanics in the U.S. have historically had limited access to health care services with 40.5% reporting no health insurance before the implementation of the Affordable Care Act (ACA) in 2013, compared to 25.8% for Blacks and 14.8% for non-Hispanic whites (Buchmueller et al., 2016). Although rates of having health insurance slightly increased after the ACA was introduced (Buchmueller et al., 2016), disparities in health care access still persist. Next, accessing health care services poses an additional challenge for Hispanic older adults due to language barriers and the provision of suboptimal interpreter services (Peterson-Besse et al., 2014). Similarly, Kim et al. (2011) explained that patients with limited English proficiency often have fewer physician visits and receive less preventive care compared to those proficient in English. Lastly, high prevalence rates of obesity, smoking, and diabetes among Hispanics often place them at risk for various types of diseases and even death (Hummer & Hayward, 2015; Velasco-Mondragon et al., 2016). Given that barriers to accessing health care are especially significant regarding Hispanic older adults who suffer from poor health conditions (Gelman, 2003; Rogers, 2010), it is critical to decrease health care inequalities for older Hispanic adults to improve the quality of and access to health care.

Hispanic/Latinx Older Adults Transportation Needs

Hispanic/Latinx older adults' transportation behaviors diverge from the assumptions adopted in HB Phase I and II, and in key ways. Most notably, Hispanic/Latinx culture often values *Familismo*, which refers to emotional attachment, obligation, and loyalty among family members (Collins et al., 2018). As such, Hispanic/Latinx older adults are more likely to stop driving earlier due to these strong family support systems (Choi & DiNitto, 2016) and are more likely to rely heavily on family caregivers for transportation and care compared to non-Hispanic/Latinx white older adults (Collins et al., 2018). In regard to transportation and health care, *Familismo* can present strong demands on family members to provide reliable transportation options for dependent older adults, such as driving them to doctor appointments or paying for private transportation to access health care. In a recent study of caregivers for Hispanic/Latinx older adults, 67% of respondents indicated that they provided transportation for the older adult in their care (National Hispanic Council on Aging, 2018). Despite strong family caregiver support observed in this community, significant transportation barriers, mobility, and health care access issues are still prevalent among the Hispanic/Latinx older adult population. These barriers may include older adults and family members lacking a reliable personal vehicle, socioeconomic barriers to using public/private transportation services, and geographic location (i.e., distance from public transit access) (Syed et al., 2013; Garcia, et al., 2017). Such challenges may result in significant hardships for the caregivers tending to this fast-growing population (Lariscy et al., 2015). In Coffman's study (2008), nearly half of the study participants relied on family members for transportation. Those relying on public transportation also struggled accessing health care due to inflexible schedules and cost (Barrio et al., 2008; Gelman, 2003). Compared to younger counterparts (age between 18-64), older adults experienced more difficulties with transportation (Dupree et al., 2010). As transportation difficulties further impacted access to specialty care or preventive care, such as diabetes management (Coffman, 2008) and colonoscopy appointments (Green et al., 2008), affordable, reliable, and convenient transportation options were considered critical for accessing health care services (Barrio et al., 2008).

Further, Hispanic/Latinx-Americans may already tend to rely more on public transit compared to their non-Hispanic white counterparts (Ramirez, et al., 2019). Meaning, the impacts associated with driving cessation may be less pronounced or less immediate in cases where Hispanic/Latinx older adults already effectively utilize public transit.

Online Education for Hispanic Older Adults

According to the National Hispanic Council on Aging, in addition to lacking stable transportation, Hispanic/Latinx older adults often lack access to a computer (for scheduling rides), implying it is a role of family caregivers to access social resources. However, Hispanic/Latinx populations are associated with the highest rate of "smartphone only" internet use among minority groups in the United States (Pew Research Center, 2019 [a]), with a rate of smartphone-dependent internet use over twice that of white Americans (Pew Research Center, 2016). Almost all Latinx between the ages of 18 and 49 (89-94%), and around 58% of Latinx between the ages of 50 and 64, use the internet on a mobile device (Pew Research Center, 2016). Although that percentage begins to decline steeply as age increases, it is still quite significant when considering the important role of Hispanic/Latinx caregivers and the fact that smartphone usage among older adults nearly quadrupled between 2011 and 2016 (Pew Research Center,

2017). Further, a recent study found that online intervention programs using mobile phones were a good option for low-income Latinx based on the population’s high level of mobile phone ownership (Arora et al., 2016).

Pre-Post Survey Results

A total of 29 pre- and post-survey responses were received from the USF and UTA teams, and 23 cases were eligible for data analysis.

Participant Demographics

The majority of participants who completed the study were female (73.9%). Approximately one-third of participants were widowed (39.2%), and one-third said they lived with a family member or friend (32.3%). The majority of participants indicated that their household income was below \$20,000 a year before taxes (91.4%).

Paired Samples T-Test

To examine the effectiveness of the SHP program before and after program implementation, the Older People’s Quality of Life (OPQOL) questionnaire was used (Bowling, et al., 2013). The instrument was developed to measure the quality of life and well-being of older adults and consisted of 13 questions with five Likert Scale options: strongly agree, agree, neither agree or disagree, disagree, and strongly disagree. Each of the 23 participants’ Likert Scale responses were converted to a score for analysis. The mean score for the post-test (61.17) was higher than the mean pre-test score (59.30) but was not statistically significant ($p > .10$). (**Table 1**).

Table 1. Case Group Paired T-Test Mean Scores

	Mean	N	Std. Deviation	Std. Error Mean
Pre-Test	59.30	23	8.615	1.796
Post-Test	61.17	23	6.807	1.419

The SHB program participants appeared to suffer from mobility hardships related to COVID-19. Some participants indicated that they limited travel to protect themselves from COVID-19, or that family members strongly recommend it. Many of the participants who had been relying on rides from friends and/or on paratransit stated that they lost access to transportation options for their daily lives due to the COVID-19 pandemic and that their quality of life became worse.

Regarding the COVID-19 vaccination information provided on the SHB website, program participants stated that the up-to-date information was helpful, but they still had a hard time getting a ride since all of the affordable transit options listed on the SHB website were temporarily unavailable or had very limited availability due to the COVID-19 pandemic. Aside from COVID-19 related difficulties, participants provided similar key insights on transportation and health issues as those reported by the non-Hispanic white older adults who participated in the original version of HB. SHB program participants were very receptive to the program model and felt the HB website would be a useful tool once the current COVID-19 pandemic ends. Before the pandemic, it seems that all participants utilized a variety of transportation services simultaneously to compensate for the challenges associated with driving cessation. One-half of

interview participants stated that they relied on family members for rides; another half indicated that they utilized the public bus system. The majority of interviewees stated that they were open or somewhat open to using private transportation services; however, monetary barriers and safety concerns related to private transportation were mentioned by multiple participants. Interestingly, the SHB interviewees valued the friendship they developed with their student buddies and expressed emotional relief after participating in the program; they indicated that they feel good and reassured after receiving information from their student buddies, and they believed that they had become more confident about using other transit options available in the community.

Like the original HB participants, the Hispanic/Latinx older adults also asked if the SHB program could add topics other than those related to transportation and health resources such as information about food banks, hotlines for emergencies and natural disasters such as COVID-19, and assistance with healthy eating/exercise.

Chapter IV: Discussion

Lessons from Remote Program Implementation

Like all best-laid plans for the year 2020, the implementation and evaluation of SHB was derailed by the COVID-19 pandemic. Once it was clear the entirety of the study period would likely be impacted, the research team adapted its approach to conduct the study remotely, using online meeting services and phone calls. Delivering the SHB program remotely had some advantages. Firstly, remote delivery removed the need for participants to find transportation to and from the program/study site. Given the target demographic of transportation-disadvantaged persons, it was a significant benefit. However, it is well established that older adults tend to have higher levels of computer anxiety and/or difficulties using technology. Hispanic/Latinx older adults, in particular, have limited access to computers and reliable internet than their non-Hispanic white counterparts. Therefore, after testing various modes of program delivery, phone call sessions were established as the main contact method, with all physical program materials delivered by mail to participants.

One unforeseen issue with delivering the program by phone was some hesitancy among potential older adult participants to engage in programing over the phone due to the prevalence of phone-based scams targeting older adults. Even when recruitment activities happened through a trusted source, such as County Senior Center group calls, some older adults were still nervous about answering questions by phone due to their concerns about scammers. The lack of face-to-face interaction in this context was detrimental and resulted in lower-than-anticipated participant enrollment. One potential strategy to mitigate this trust-issue was working with a staff member who already established trust with the community members. Once gaining trust from older adults, they were often eager to participate in SHB, expressed hearty interest in working with student volunteers, and recommended the program to their friends and neighbors.

Another challenge was that student volunteers had difficulty with last-minute session cancelations. Frequently, older adult buddies would agree to a scheduled phone call session, then ask to reschedule when their student buddy called them at the agreed-upon time. Although last-minute cancelations led to minor delays, the research team experienced far more challenges when scheduling in-person sessions during previous in-person phases. Namely, in-person sessions were limited to the operating hours of the County Senior Centers, weekdays from 8am to 5pm. With the majority of college courses occurring during those hours, there was little flexibility for session times, and cancelations were much more difficult to reschedule. As such, the remote delivery of the program opened up more options for scheduling sessions and last-minute cancelations were typically simple fixes.

Overall, the remote format allowed older adults to receive transit and health information of the same quality as older adult participants in the in-person sessions of the previous phases of the program. Although the social benefits of face-to-face sessions were likely diminished, it appeared that older adults still received emotional support and expressed a feeling of connection with their student buddies through their phone call sessions. With the isolating effects of COVID-19 in mind, the program, anecdotally, provided an opportunity for older adults to connect with others, outside of their immediate family and caregivers. Further, by mailing key program materials in a packet to their homes, older adults still had a tangible resource that they could revisit as needed and share with family and caregivers. There were some issues with participants claiming they did not receive their packet and/or compensation in the mail. In these instances, the research team canceled the lost gift cards and resent the materials and/or

compensation. The research team called a few days after the packet was mailed to make sure of their receipt of the packet.

Considering the circumstances imposed by COVID-19, the remote format was a viable alternative to traditional program delivery. In some instances, the remote delivery improved the overall delivery of programming due to its relative flexibility. The ability to reach transportation-disadvantaged populations through a remote format was also a significant benefit. Moving forward, a hybrid (remote/in-person) approach could be adopted to reach more older adults, based on their preferences.

In addition to recruitment difficulties due to social distancing and lockdowns during the COVID-19 pandemic, the research team faced challenges in recruiting Hispanic/Latinx older adults because many of them already relied on public transit. As Ramirez et al. (2019) indicated, this ethnic group was already familiar with existing transportation options and driving cessation was less of an issue compared to other racial and ethnic groups. Similarly, the recruitment, coordination, and retention of bilingual college students as volunteers was challenging due to the COVID-19 pandemic. Although similar challenges were faced in previous iterations of the program, these issues were amplified by the COVID-19 pandemic. Not only was the pool of potential student volunteers much smaller due to the Spanish-fluency requirement, but there were also less students in general seeking volunteer opportunities. With the shift to remote delivery of college curriculum, most courses that previously required volunteer hours suspended this requirement. Based on the experiences from the HB pilot test, it was concluded that working with college courses that had volunteer hour requirements helped with the retention of volunteers.

The USF team adapted to these limitations by advertising the volunteer opportunity as remote and flexible and received enough interest to accommodate the number of older adults enrolled. The UTA team adapted by hiring students as GRAs, which gave students an opportunity to work with older adults and gain valuable work experience with human subjects research. Through this research opportunity, one UTA student, Ms. Silvia Menchca, received the “Outstanding MSW Advanced Student Award – Aging” at the Summer 2021 Celebration of Excellence at UTA School of Social Work.

Despite unanticipated barriers caused by the COVID-19 pandemic, the mean post-test score was higher than the mean pre-test score. Although the difference was not statistically significant, anecdotally, older adults felt they learned more about transportation options and community health resources available to them. These qualitative assessments support our findings and confirm the positive impact that SHB had on participants.

Throughout the SHB program, it was noted that the program could be more beneficial when up-to-date information on emergency situations, such as COVID-19 vaccination updates, is provided to older adults. In particular, timely translated transportation and health information for Hispanic/Latinx transportation-disadvantaged older adults could make a significant contribution to improving their quality of life.

Study Limitations

As a pilot test, the findings and conclusions drawn from the study are not universal to all Spanish-speaking older adults and should not be viewed as such. The COVID-19 pandemic severely limited the research team’s ability to recruit participants, especially at the Hillsborough County, Florida site, due to the shutdown of County Senior Centers, which were intended to act as the primary recruitment and intervention site. Despite exploring other recruitment avenues,

such as advertising the program at local doctor's offices and Hispanic/Latinx churches, the USF team was only able to recruit a small number of participants through County Senior Center weekly phone calls. In addition to a small sample size, the selection bias introduced by recruitment methods should be noted. Despite these limitations, the research team was able to build upon its previous research and use survey data and anecdotal observations of student volunteers to fine-tune SHB to better meet the needs of Spanish-speaking older adults.

Chapter V: Conclusions

The SHB program is a promising community-based intervention to improve quality of life for transportation disadvantaged Hispanic/Latinx older adults through the use of a student-older adult buddy system. The online format of the program and timely provision of COVID-19 vaccination information were well received among study participants. Overall, they expressed a positive perception of the program for providing education and awareness of transportation options and health resources within the community. Further expansion and evaluation of the program, for a longer duration and with a larger sample size, is needed to confirm the effectiveness of the SHB program.

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Appendix A: Recruitment Materials

USF Volunteer Recruitment Flyer



Healthy Buddy Program

IMPROVING HEALTH THROUGH SUPPORT AND TRANSPORTATION



SEEKING SPANISH-FLUENT STUDENTS FOR REMOTE VOLUNTEER WORK

The Healthy Buddy Program is a community-led initiative that aims to improve older adults' access to transportation and health resources in Hillsborough County.

We are currently in need of student volunteers who are fluent in Spanish, to work **remotely** with Spanish-speaking older adults in our community.

Student volunteers will gain valuable experience by assisting an older adult "buddy" in identifying existing transportation opportunities and health resources in the community.

If you have any questions about the program or volunteering, please visit us at hbuddy.org or email Savana Wright at savanaw@usf.edu.



BECOME A VOLUNTEER TODAY

<https://hbuddy.org/signup1>



Hillsborough County Older Adult Recruitment Flyer (Spanish with English Translation)



ESTUDIO DE INVESTIGACIÓN

www.hbuddy.org

¿ES USTED UN ADULTO MAYOR (65+) QUE ESTÁ LUCHANDO PARA ENCONTRAR EL TRANSPORTE?

El Centro para la Investigación del Transporte Urbano (CUTR) está buscando Residentes de Hillsborough County, mayores de 65 años, para participar en un estudio relacionado con un nuevo programa basado en la comunidad, creado para mejorar el acceso de los adultos mayores a transporte y servicios de salud. Este programa es parte de un estudio de investigación en el University of South Florida (STUDY000283, PI: Dr. Siwon Jang).

Si las siguientes declaraciones lo describen, Ud. puede ser elegible:

- Soy un residente del Hillsborough County con 65 años o más
- Me falta acceso regular al transporte
- Tengo / vivo con una enfermedad crónica o un problema de salud crónico
- Nunca me han diagnosticado "demencia"

¿Beneficios de participación?

- Oportunidad de expresar las necesidades reales sobre el transporte (de los adultos mayores)

Compromiso de tiempo

- 3 a 5 horas en total. El tiempo se extenderá sobre varios meses.

Compensación

- Se le compensará \$ 25 en tarjetas de regalo si completa todas las visitas de estudio programadas

Para información adicional contacte a:

Savana Wright
Center for Urban Transportation Research (CUTR)
Study Coordinator (Coordinador de estudio)
(813) 974-6505
savanaw@cutr.usf.edu



STUDY000283



RESEARCH STUDY

www.hbuddy.org

ARE YOU AN OLDER ADULT (65+) WHO STRUGGLES TO FIND TRANSPORTATION?

The Center for Urban Transportation Research (CUTR) is seeking Hillsborough County Residents, age 65 and older, to take part in a study relating to a new community-based program, designed to improve older adults' access to transportation and healthcare. This program is part of a research study at the University of South Florida (STUDY000283, PI: Dr. Siwon Jang).

If the following statements describe you, then you may be eligible:

- I am a Hillsborough County Resident age 65 or older
- I lack regular access to transportation
- I manage a chronic health condition
- I have never been diagnosed with Dementia

Participation Benefits?

- Opportunity to voice older adults' real needs about transportation
- Opportunity to receive personalized information on transportation and chronic diseases if selected to participate in the pilot study

Time Commitment

- 3 to 5 hours total. The time will be spread out over the course of several months.

Compensation

- You will be compensated \$25 in gift cards if you complete all the scheduled study visits.

For additional information please contact:

Savana Wright
Center for Urban Transportation Research
Study Coordinator
(813) 974-6505
savanaw@cutr.usf.edu



STUDY000283

Older Adult Recruitment Flyers Used in Texas



¿ES USTED UN ADULTO MAYOR (65+) QUE ESTÁ LUCHANDO PARA ENCONTRAR EL TRANSPORTE?

COMPROMISO DE TIEMPO

2 a 4 horas en total para hablar con su Healthy Buddy.

PARA INFORMACIÓN ADICIONAL CONTACTE A:

Jessica Cassidy (en español) Coordinador de estudio
(469) 629-6806
jessica.cassidy@uta.edu

Dr. Kathy Lee (sólo Inglés)
University of Texas at Arlington (314) 971-7258
kathy.lee@uta.edu

Si! Hablamos Español!

ESTUDIO DE INVESTIGACIÓN (WWW.HBUDDY.ORG)

El programa Healthy Buddy tiene como objetivo brindarle un Healthy Buddy que hablará con usted sobre sus necesidades de transporte y le brindará los recursos comunitarios disponibles para ayudarlo a llegar a los lugares a los que necesita ir. Los recursos que proporcionamos serán gratuitos. Una vez que se complete el programa, es posible que tenga un mayor conocimiento de los recursos en su comunidad que puede seguir utilizando para cumplir con sus citas de atención médica y los recados necesarios, como la compra de comestibles.

¿Beneficios de participación?

• Oportunidad para usar servicios de salud y transporte servicios en la comunidad para gratis o costo reducido para adultos mayores

SI LAS SIGUIENTES DECLARACIONES LO DESCRIBEN, USTED PUEDE SER ELEGIBLE:

- Soy un residente del condado de Tarrant/Dallas y tengo más de 65 años
- No puedo manejar y tengo dificultades para encontrar o pagar el transporte cuando necesito o quiero ir a algún lugar
- Tengo o vivo con una condición de salud (por ejemplo, diabetes, presión alta, etc.)
- Hablo principalmente español

COMPENSACIÓN

Recibirá una \$10 tarjeta de regalo de Walmart al comienzo del programa después de completa una encuesta, Al final del programa, recibirá una \$15 tarjeta de regalo de Walmart después de completar otra encuesta y una entrevista



Healthy Buddy Program

...El Programa Amigo Saludable



¿Es usted un adulto mayor (65+) y no tiene coche?
¿Vive usted en Texas?
¿Es español su primer idioma?
¿Tiene alguna condición de salud o quisiera saber sobre clínicas con exámenes a menor costo?
¿Le gustaría conocer los servicios basados en la comunidad?
¡Si es así, el programa Healthy Buddy (Amigo Saludable) tiene información para usted!

¡¡Llame hoy y pregunte sobre el programa Healthy Buddy!!



318-491-5113

En agradecimiento por su participación, ¡le obsequiaremos dos tarjetas de regalo de Wal-Mart que suman \$25 en total!

- Are you an older adult (65+) without a car?
- Do you live in Texas?
- Is Spanish your first language?
- Would you like to learn about clinics with low-cost examination?
- Would you like to know community-based services that may help your health and mobility?
- If so, the Healthy Buddy Program has Information for You!

Call Today and Ask About the Healthy Buddy Program!!



In Gratitude of Your Participation, We Will Give You Two Wal-Mart Gift Cards Totaling \$25!

Appendix B: Technology Transfer

A key feature of the SHB is the replicability of the community-based intervention model among stakeholder groups. The purpose of the proposed research was to determine if a Spanish-language accessible version of HB can improve transportation disadvantaged older adults' mobility, quality of life, and self-efficacy within their communities. Although more research is needed to determine the effectiveness of the program at a larger scale, the findings of the research are applicable to other communities seeking to implement similar programming. Further, the Spanish-language version of the HB website is a tool that is readily available for use by community partners, to identify resources for Spanish-speaking older adults.

