The Impact of a Telenovela Intervention on Use of Home Health Care Services and Mexican American Older Adult and Caregiver Outcomes

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ABSTRACT

A two-group randomized controlled trial tested a telenovela intervention (i.e., a culturally congruent videotaped dramatization with guided dialogue) to increase Mexican American older adults' and family caregivers' awareness of and confidence in home health care services (HHCS), thereby increasing use of HHCS and improving older adult and caregiver outcomes. Both groups had significant increases in awareness of and confidence in HHCS. The intervention group used HHCS more than the control group (91.1% versus 71.2% of total visits authorized); however, this was not a statistically significant difference ($p = 0.18$). Use of HHCS was associated with increased older adult and caregiver mutuality (i.e., the quality of the older adult–caregiver relationship) and decreased caregiving burden and depression. The predictive role and measurement of awareness and ways to improve the intervention are discussed. Findings are especially important with today's focus on transitional care to keep older adults at home and prevent unnecessary readmissions.

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Older adults should receive appropriate and timely transitions between types and locations of health care through interprofessional and patient-centered care (Naylor, Aiken, Kurtzman, Olds, & Hirschman, 2011). However, less Latino individuals receive post-hospital home health care services (HHCS) than other groups. Latino individuals comprise 16.9% of the general population (U.S. Census Bureau, 2012), but comprise only 7.7% of HHCS clients (Caffrey, Sengupta, Moss, Harris-Kojetin, & Valverde, 2011). Mexican American individuals comprise the largest group of the Latino population (64.9%; Lopez, Gonzalez-Barerra, & Cuddington, 2013). Mexican American older adults are in great need of HHCS as their family structures change, and because they are more functionally impaired at younger ages than other Latino and non-Latino older adults (Angel, Torres-Gil, & Markides, 2012).

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HHCS are intermittent visits for homebound clients needing skilled care (Madigan et al., 2014). Skilled care can be provided by licensed nurses and therapists (e.g., physical, occupational, speech) to promote health and independence (Medicare Payment Advisory Commission, 2014). Nonskilled, home care aide visits may be included only if skilled visits are also necessary (Murkofsky & Alston, 2009).

Underuse of HHCS is a critical disparity because of the resulting financial and human costs involved. Financially, the cost of HHCS (approximately $140 per day; National Association of Home Care & Hospice, 2013) is significantly less than hospitalization (approximately $1,625 per day; Oh, 2012) and nursing home care (approximately $200 to $230 per day; Administration on Aging, 2010). Preventable 30-day readmissions were estimated to cost Medicare $15 billion (Logue & Drago, 2013). Additionally, under the Patient Protection and Affordable Care Act (ACA) of 2010, hospitals lose money for rehospitalizations (Naylor et al., 2011). Human costs include increased complications from hospitalization (Tao, Ellenbecker, Chen, Zhan, & Dalton, 2012), whereas use of HHCS decreases older adult functional impairment and health care services utilization (e.g., rehospitalizations, emergency department [ED] visits, nursing home placement) (Romagnoli, Handler, & Hochheiser, 2013). In addition, aside from preventing costs to society, use of HHCS reduces the costs of caregiver illness, burden, depression, and mortality (Romagnoli et al., 2013). Using HHCS also ensures safe and timely transitions between types and locations of health care, a priority of the ACA (Naylor et al., 2011).

Culturally congruent interventions that focus on Mexican American older adults and their caregivers are needed because Mexican American and Anglo caregiving experiences are different (Friedemann, Buckwalter, Newman, & Mauro, 2013). Aside from a preliminary study (Crist & Haradon, 2011), no other intervention studies to increase use of HHCS by Mexican American older adults exist. Given the importance of family in the Mexican American culture, interventions targeted for Mexican American older adults that include their caregivers are needed to improve older adult self-management and decrease caregiver and health care burden. The current authors' intervention, a culturally appropriate video drama, addressed the need for HHCS and was built on unique Mexican American sociocultural traditions, including the families' devotion toward caring for their older adult relatives.

The primary purpose of the current study was to test the efficacy of an innovative intervention to increase use of HHCS. The intervention consisted of a culturally appropriate telenovela (i.e., a filmed dramatized story in English or Spanish) with a follow-up guided dialogue. Previously, a theoretical model predicting use of HHCS had been tested, and two significant factors that were amenable to change were found: (a) awareness of and (b) confidence in HHCS (Crist, Kim, Pasvogel, & Velázquez, 2009). Therefore, the intervention was designed to focus on these two factors to increase use of HHCS. Additionally, the telenovela addressed a third significant factor, familism, a strength that did not need to be changed but rather recognized and promoted. *Familism* is the Mexican American cultural norm that families take care of their older adult relatives (Koerner & Shirai, 2013). This additional component ensured the intervention would be culturally acceptable.

The aims of this study were to assess (a) the efficacy of the intervention on older adults' and caregivers' awareness of and confidence in HHCS and older adults' use of HHCS; (b) older adults' and caregivers' awareness of and confidence in HHCS as predictors of older adults' use of HHCS; and (c) the relationship between use of HHCS and older adult and caregiver outcomes.

CONCEPTUAL FRAMEWORK

The conceptual framework depicts the four key constructs: (a) *intervention*, (b) *factors influencing use of HHCS*, (c) *use of HHCS*, and (d) *outcomes from use of HHCS* (**Figure**). Within the conceptual framework, key concepts, or variables, are listed in the **Figure** and defined below.

Older Adult and Caregiver Variables

Three older adult and caregiver variables are conceptualized as affecting use of HHCS. Two are predictors: awareness of and confidence in HHCS; one is contextual: familism.

Awareness of HHCS. Awareness of HHCS is defined as having an understanding about HHCS. The variable includes three dimensions: (a) awareness that HHCS exist. Older adults, family caregivers, and providers have reported that Mexican American older adults would have used HHCS more if older adults and caregivers had known that these services existed (Crist, Michaels, Gelfand, & Phillips, 2007). (b) Awareness of the need for HHCS. Although older adults and caregivers may know that some services exist, they still may not comprehend how HHCS can be helpful in attaining their own individual goals (Crist et al., 2007). (c) Awareness of how to access HHCS. Many older adults reported they did not know, when asked, how

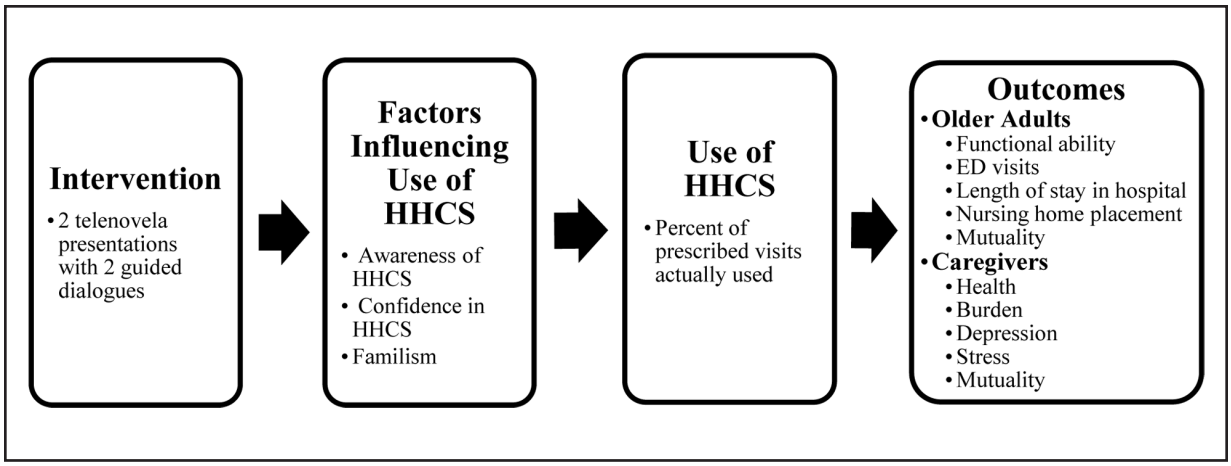

Figure. Conceptual framework for the current study.
Note. HHCS = home health care services; ED = emergency department.

they could get services if and when they needed them (Crist et al., 2007). Although awareness of HHCS has been studied since the 1980s, these dimensions have not been considered.

Confidence in HHCS. Confidence in HHCS is defined as the degree to which skilled care provided in the home is trusted rather than feared. The variable is conceptualized as having two dimensions: (a) older adults and caregivers trust that care and services received from outside providers coming into the home could improve older adults' outcomes. Interpersonal trust in formal HHCS providers affects Mexican American older adults' and caregivers' acceptance and potential use of HHCS in the familial cultural context (Crist, Velázquez, Durnan, & Ramírez Figueroa, 2006). (b) Fear that care provided by outsiders coming into the home might not be safe, competent, or respectful. Older adults and caregivers often fear that HHCS are designed to replace family care (Crist & Speaks, 2011).

Familism. Familism is defined as the expectation that children will be the primary caregivers for their parents and older adult relatives (Koerner & Shirai, 2013). The goal in the current study was not to change this important Mexican American cultural value but to reframe the use of HHCS as being consistent with familism (i.e., using HHCS assists the older adult and caregiver in keeping the older adult safe and healthy at home). Familism is seen as part of the cultural context and an essential component of the telenovela.

Primary Outcome: Older Adults' Use of HHCS

Use of HHCS was defined conceptually as using HHCS as prescribed (i.e., if six visits were prescribed, using all six visits). Rather than the most common but simplistic conceptualization of whether HHCS was used, the authors chose a more precise way to view "use of HHCS"—the percent of prescribed visits actually used.

Older Adult Outcome Variables

Five older adult variables were conceptualized as being affected by use of HHCS (**Figure**). Older adults' functional ability (i.e., the ability to perform activities of daily living [ADLs] independently), has been shown to improve when HHCS are provided (Felix, Dockter, Sanderson, Holladay, & Stewart, 2006). Days spent in the hospital by older adults have decreased with use of HHCS (Romagnoli, Handler, & Hochheiser, 2013). Older adults' ED visits are often the result of caregiving crises due to the lack of understanding, which HHCS in-home training and assistance could prevent (Carrier & Boukus, 2013). Nursing home placement has also decreased with use of HHCS (Onder et al., 2007). *Older adult mutuality* is older adults' perception of the quality of the older adult–caregiver relationship. Mutuality is conceptualized as having four dimensions, including (a) love and affection, (b) shared pleasurable activities, (c) shared values, and (d) reciprocity (Lyons, Stewart, Archbold, & Carter, 2009), and to be an important component of older adults' ability to continue to live at home with family caregivers' help.

Caregiver Outcome Variables

Caregiving affects family caregivers' health, with outcomes such as fatigue, difficulty sleeping, gastrointestinal upset, headaches, high blood pressure, extreme weight gain or loss, and higher mortality (Pinquart, 2007). Health can be improved by social support (del-Pino-Casado, Millán-Cobo, Palomino-Moral, & Frías-Osuna, 2014), which could be provided by HHCS. Five caregiver variables were

conceptualized as being affected by use of HHCS (**Figure**). Caregiver health was conceptualized as the number of medical problems as well as the extent to which those problems interfere with caregivers' daily living. Caregiving burden is a controversial variable in the Mexican American cultural context. Being able to help older adults is traditional and still foremost in Latino and Mexican American caregivers' motivation; therefore, burden is sometimes claimed to not exist culturally. However, Mexican American caregivers significantly reported burden in previous studies (Crist, Kim, et al., 2009; del-Pino-Casado et al., 2014). Caregiving burden has two dimensions: (a) caregivers' objective assessment of older adults' impairment, conceptualized as assistance with older adults' ADLs; and (b) caregivers' subjective perceptions of burden (i.e., how tiring, difficult, or upsetting the objective caregiving tasks are for them) (Poulshock & Deimling, 1984). Caregiver depression and related problems, such as irritability, moodiness, restlessness, fearfulness, feelings of loss, feeling trapped, thoughts of suicide, and mortality (Gitlin et al., 2003), have the potential to negatively affect the family care situation. Caregiver stress has been documented as feeling anxious, exhausted, and increasingly impatient, and managing multiple roles with little preparation (Valadez, Lumadue, Gutierrez, & de Vries-Kell, 2005). Family caregivers are more likely to be stressed, thus vulnerable to illness, as evidenced by increased salivary cortisol and killer T-cells (Pinquart & Sörensen, 2007). Mutuality for caregivers is the same as defined above for older adults; caregiver mutuality has been associated with decreased caregiver role strain (i.e., burden) with use of HHCS (Lyons et al., 2009).

METHOD

A two-group randomized controlled trial with repeated measures was used to test the ENCASA (i.e., Elders' aNd Caregivers' Assistance and Support At-home) telenovela intervention to increase use of HHCS. Data were collected at baseline, after the second exposure to the intervention/attention control, 1 month post-discharge, and 6 months post-discharge.

The Telenovela Guided Dialogue Intervention

The intervention was two-part: viewing a 12-minute telenovela and then participating in a guided dialogue immediately following the telenovela viewing. Participants were offered this two-part intervention two times. At the end of the first intervention, a time was set up for the second intervention within the next 24 hours, before discharge, at the convenience of participants.

Telenovelas can be used as culturally congruent media for presenting health messages to Latino audiences (Vaughn, 2012). Typical telenovelas in Mexico and other Latino countries are television dramas and can be the most likely source for learning about health, leading viewers to discuss the story and initiate changes. This behavior is what the ENCASA telenovela was designed to promote. The intervention was conceptualized and developed with community-based participatory research principles (Crist, Parsons, Warner Robbins, Mullins, & Espinosa, 2009). Members of the ENCASA Community Advisory Council, who have collaborated with the authors for more than one decade in this program of research, helped design and create the intervention and control telenovelas and the structure of the guided dialogues. They also played key roles in the translation of the interventions into Spanish and assisted with the professional production of the telenovelas, ensuring that vocabulary was easily understandable. The telenovelas were produced by a local, Mexican American–owned company, identified and selected by the principal investigator (PI; J.D.C.) and ENCASA members (Crist & Haradon, 2011).

The intervention was a theory-driven intervention based on narrative pedagogy (Gilkison, 2013) to increase Mexican American older adults' and caregivers' awareness of, confidence in, and subsequent use of HHCS. Information alone is usually not effective in changing attitudes and behaviors. Learning which results in decisions on emotionally charged topics is dynamic, social, based on dialogue, and occurs through a sense of recognition of like-personalities (Larkey & Hecht, 2010). The telenovela subtly incorporated identification learning and social dialogue throughout the plot; and more overtly addressed the predictors (i.e., awareness of and confidence in HHCS), as well as familism, as the characters considered using HHCS.

Lack of awareness of HHCS is an important reason Mexican American older adults and caregivers do not use HHCS (Crist, Kim et al., 2009); hence, characters' scripts included conversations portraying understanding the use of HHCS to facilitate learning about services in a relevant way. The telenovela dramatization and subsequent guided dialogues were expected to be an effective medium for Mexican American older adults and caregivers to increase awareness of HHCS. The script also addressed confidence because many Mexican American older adults and caregivers do not use HHCS (Crist, Kim, et al., 2009), often fearing that HHCS are not competent and/or are designed to replace family care (Crist & Speaks, 2011). The Mexican American characters' portrayal in the telenovela was

designed to facilitate (a) identification with the characters as they struggled with the need to care for the older adult, (b) the testing of services, and (c) ultimately confidence in HHCS. To acknowledge familism, with use of HHCS as a Mexican American family decision (Crist, García-Smith, & Phillips, 2006), it was imperative to promote family interconnectedness and include close and extended family when dramatizing Mexican American older adults addressing use of HHCS.

The 12-minute telenovela consisted of four acts: (a) a daughter caregiver expressing concern regarding her mother's health (i.e., emphasizing identification with characters and social dialogue); (b) an older adult expressing concerns about HHCS to her sister, who responds to each barrier with her recent positive experience with HHCS (i.e., stressing awareness of HHCS); (c) a culturally competent HHCS visit with the older adult and daughter caregiver (i.e., accentuating confidence in HHCS); and (d) the older adult telling a friend how she enjoyed the HHCS, feels better, and can now attend family events (i.e., highlighting familism). The second part of the intervention, the guided dialogue that lasted approximately 50 minutes, had a protocol to (a) answer informational questions and (b) promote older adults, caregivers, and family members to discuss and examine their reactions to issues portrayed in the telenovela (i.e., awareness of HHCS, confidence in HHCS, and their personal view of how familism related to using or not using HHCS). This guided dialogue also used social discourse, designed to have older adults and family caregivers mentally revisit the story, characters, and message and express reactions about opinions, ultimately achieving acceptance of HHCS use.

Control Condition

The attention-control condition followed the same protocol as described above for the intervention: two presentations of a "Health Screening for Seniors" telenovela, each followed by a guided dialogue with sessions lasting approximately the same length of time. The attention-control telenovela was also a DVD of the same format, quality, and length as the intervention to control for attention effects. The content of this control telenovela was a story about older adults becoming aware of health screening needs, recommended and scripted by the PI and ENCASA Advisory Council. The same company produced both telenovelas with the same actors to ensure similar design, amount of cultural components, drama, and viewer interest. Similar to the intervention, the guided dialogue conducted after the control telenovela included discussion questions and prompts to promote dialogue about the content and reactions.

Setting and Sample

The setting was two university-affiliated hospitals with high percentages of Mexican American patients; one was on campus and the second was 5 miles away in a predominately Mexican American, low-income neighborhood in a midsize city in the southwestern United States. The complete intervention took place during the older adults' hospitalizations.

Inclusion criteria for older adults were as follows: age 55 or older; of Mexican descent; able to read or speak Spanish or English; score of ≤4 on the Short Portable Mental Status Questionnaire (SPMSQ; Pfeiffer, 1975), to exclude older adults who had moderate or severe dementia; hospitalization; receiving daily ADL or instrumental ADL (IADL) family caregiver assistance; a nonpsychiatric medical or surgical diagnosis; and had a family caregiver who either co-resided or lived within a 30-minute drive of the older adult's home. Inclusion criteria for caregivers were: a primary family caregiver, self-identified or identified by the hospitalized older adult; of Mexican descent; age 18 or older; able to speak or read Spanish or English; and co-resided or lived within a 30-minute drive of the older adult. Initially, older adults not receiving HHCS referrals were not eligible to participate; however, they were later included because of recruitment delays (Crist, Ruiz, Torres-Urquidy, Pasvogel, & Hepworth, 2013). The university institutional review board approved the study's plan for human subjects' protection.

Procedures

Following baseline data collection, participants were stratified by type of family care provider (i.e., spouse/other versus offspring) and randomly assigned to the experimental or control group. The intervention was administered, and post-intervention data were collected. No Mexican American participants protested being randomly assigned to either group.

The telenovelas and guided dialogues occurred during the older adult's hospitalization. Older adults and their family chose either Spanish or English versions.

Data Collection

Data were collected at (a) baseline, (b) immediately following the second viewing of the intervention/attention control (or following the first if the second was refused) while the older adult was still in the hospital, (c) 1 month after hospital discharge, and (d) 6 months after hospital discharge. All data were collected in person by bicultural/

TABLE 1

Variables, Measures, and Reliability

		Cronbach's Alpha	
Variable	**Measure**	**Older Adult**	**Caregiver**
Awareness of HHCS total score	Awareness of HHCS scale	0.59	0.70
Awareness of existence of HHCS subscale		0.60	0.68
Awareness of need for HHCS subscale		0.47	0.78
Awareness of access to HHCS subscale		0.48	0.81
Confidence in HHCS total score	Confidence in HHCS	0.81	0.81
Trust subscale		0.73	0.85
Fear subscale		0.76	0.81
Mutuality	Mutuality scale	0.91	0.95
Acculturation	Ethnic interaction, language, identification, acceptance		
Mexican American		0.68	0.53
Anglo		0.89	0.81
Functional ability[a]	OARS OMFAQ, IADL/ADL scales	0.87	
Instrumental ADLs subscale		0.83	
ADLs subscale		0.73	
Caregiver's severity of disease[b]	Caregivers' Severity of Disease scale		0.60
Number of medical problems			
Interfere with daily living[c]			
Objective burden[b]	OMFAQ scales		0.93
Perceived burden[b]	Caregiving Burden scale, Perceived Burden subscale		0.86
Depressive symptoms[b]	Condensed CES-D		0.81
Perceived stress[b]	Perceived Stress scale		0.79

Note. HHCS = home health care services; OARS OMFAQ = OARS Multidimensional Functional Assessment Questionnaire; IADL = instrumental activities of daily living; ADL = activities of daily living; CES-D = Center for Epidemiologic Scale-Depression.
[a] Only measured in older adults.
[b] Only measured in caregivers.
[c] Too few cases to calculate Cronbach's alpha.

bilingual research assistants in Spanish or English. After the postintervention data collection, the older adult–caregiver dyad was given a large-print monthly calendar and instructed how to record health care usage (i.e., HHCS, hospital, ED, or nursing home). These data were collected in person by bicultural/bilingual research assistants at Months 1 and 6, and by telephone for Months 2, 3, 4, and 5 after discharge. Each participant was given a small monetary gift for participating in each of the four in-person data collection sessions.

Variables and Measures

All self-report measures had been developed and tested in Spanish and English. Reliability alphas are shown in **Table 1**.

Older Adult and Caregiver Measures of Factors Influencing Use of HHCS. Awareness of HHCS was measured with the 7-item Service Awareness Scale (Crist et al., 2007). The three subscales measured awareness of (a) the existence of HHCS available to older adults, (b) type/s of HHCS the older adult needs, and (c) how an older adult/caregiver would find out about and access HHCS. Confidence in HHCS was measured with the 27-item Confidence in HHCS Questionnaire (Crist, Velázquez, et al., 2006). The two subscales measured level of trust in HHCS and level of fear about potential lack of safety and quality of care to be provided by HHCS.

Primary Outcome: Use of HHCS. Rather than using traditional dichotomous measures of HHCS use (*used*

versus *not used*), a more sensitive continuous measure was developed. The number of visits prescribed in the care plan and the actual number of HHCS visits were collected. A continuous use-of-HHCS score was computed by dividing the actual number of HHCS visits by the prescribed number of HHCS visits, resulting in a percentage. For example, if the client only accepted 15 of 20 prescribed visits, 15 divided by 20 visits prescribed equaled a 75% use-of-HHCS score. If clients were discharged early from HHCS because they had achieved the care plan goals without needing the total prescribed visits, the denominator was adjusted to reflect the new number of prescribed visits. Higher HHCS scores indicate a higher percentage of prescribed appointments kept rather than a greater number of visits, which allowed a comparison of HHCS use among individuals with differing numbers of prescribed visits. Because random assignment to groups was used, the number of *unintentional* reasons for not using a planned HHCS visit (e.g., unexpected physician visit for new or unrelated diagnosis) were expected to be evenly distributed between the experimental and control conditions.

Older Adult Outcome Measures. Functional ability was measured with the OARS Multidimensional Functional Assessment Questionnaire (OMFAQ), ADL Scale (Fillenbaum, 1988). Older adults' hospitalizations, ED visits, and nursing home days were measured with corresponding questions from the OARS OMFAQ Physical Health Scale. The questions were formatted to be answered as older adult/caregivers' entries on the calendars provided. Older adult mutuality was measured by the Mutuality Scale.

Caregiver Outcome Measures. Caregiver health was measured using the Caregiver's Severity of Disease Scale (Phillips et al., 1996) with two dimensions: (a) the caregivers' number of medical problems and (b) the degree to which the medical problems interfered with caregivers' daily life. The two dimensions of caregiving burden were measured as follows: caregivers' objective burden was measured with the OMFAQ, ADL Scale; and caregivers' subjective burden was measured with the Caregiving Burden Scale, Perceived Burden Subscale (Poulshock & Deimling, 1984). Caregiver depression was measured using a 10-item condensed version of the Center for Epidemiologic Studies-Depression (CES-D) Scale, which contained items from each of the four dimensions (Radloff, 1977). Caregiver stress was measured by the Perceived Stress Scale (Cohen, Kamarak, & Mermelstein, 1983). Caregiver mutuality was measured with the same Mutuality Scale used with older adults.

Data and Power Analyses

Power analyses conducted using PASS 2005 suggested 60 dyads (30 per group) were needed to detect an effect size (*f*) of 0.41 with a power of 0.70 and an effect size (*f*) of 0.46 with a power of 0.80 for the interaction effect in the 2x4 analysis of variance (Hintze, 2007).

RESULTS

Seventy-four older adult–caregiver dyads consented to participate in the study (**Table 2**). Of these dyads, 22 had a referral to HHCS. Most caregivers were spouses/other (63.5%); offspring constituted 36.5% of caregivers. Older adults' responses to the acculturation scale indicated slightly more identification with Mexican American culture than caregivers'. No significant differences were noted in the demographics between the intervention and control groups for older adults and caregivers.

Intervention Effects on Awareness, Confidence, and Use of HHCS

The intervention did not significantly impact either older adult or caregiver awareness of or confidence in HHCS (i.e., no significant group-by-time interaction effects were noted) (**Table 3** and **Table 4**). For older adults, significant main effects of time were noted for the awareness of the need for HHCS subscale and the trust subscale, with awareness of the need for HHCS decreasing and trust increasing over time. For caregivers, significant main effects of time were noted for the awareness of HHCS and the awareness of access to HHCS subscale, with both increasing over time.

The intervention group used HHCS more (mean = 91.1%, *SD* = 18.1%) than the control group (mean = 71.2%, *SD* = 42%); however, this was not a statistically significant difference ($p = 0.18$).

Awareness and Confidence as Predictors of Use of HHCS

For older adults, the relationships of awareness of HHCS and confidence in HHCS with use of HHCS were not significant. For caregivers, a significant negative relationship was noted between awareness of HHCS with use of HHCS ($r = -0.46$, $p = 0.04$) and awareness of HHCS with use of HHCS at 1 month postintervention ($r = -0.46$, $p = 0.04$), indicating that greater knowledge and awareness were associated with less use of HHCS.

Relationship Between Use of HHCS and Outcomes

For both older adults and caregivers, significant positive relationships were noted between use of HHCS and

TABLE 2

Demographics of the Study Population

	Older Adults			Caregivers		
Characteristic	**Control ($n = 36$)**	**Intervention ($n = 38$)**	**Total ($N = 74$)**	**Control ($n = 36$)**	**Intervention ($n = 38$)**	**Total ($N = 74$)**
Age (mean, *SD*, range) (years)	67.67 (7.3) (55 to 83)	68.11 (8.9) (55 to 83)	67.89 (8.1) (55 to 83)	53.86 (12.6) (19 to 76)	50.47 (14.4) (18 to 80)	52.12 (13.6) (18 to 80)
Sex (*n*, %)						
Male	17 (47.2)	20 (52.6)	37 (50)	7 (19.4)	4 (10.5)	11 (14.9)
Female	19 (52.8)	18 (47.4)	37 (50)	29 (80.6)	34 (89.5)	63 (85.1)
Race (*n*, %)[a]						
White	22 (61.1)	28 (73.7)	50 (67.6)	18 (50)	20 (52.6)	38 (51.4)
Other	14 (38.9)	10 (26.3)	24 (32.4)	10 (27.7)	16 (42.1)	26 (35.1)
Marital status (*n*, %)						
Single, never married		2 (5.3)	2 (2.7)	6 (16.7)	8 (21.1)	14 (18.9)
Married	22 (61.1)	21 (55.3)	43 (58.1)	25 (69.4)	25 (65.8)	50 (67.6)
Widowed	8 (22.2)	8 (21.1)	16 (21.6)	1 (2.8)		1 (1.4)
Divorced	5 (13.9)	3 (7.9)	8 (10.8)	2 (5.6)	5 (13.2)	7 (9.5)
Separated	1 (2.8)	3 (7.9)	4 (5.4)	1 (2.8)		1 (1.4)
Acculturation (mean, *SD*, range)[b]						
Mexican American	15.80 (2.4) (10.11 to 20.00)	16.52 (2.7) (9.89 to 20.00)	16.17 (2.5) (9.89 to 20.00)	15.53 (2.3) (8.56 to 20.00)	15.94 (2.2) (11.11 to 20.00)	15.74 (2.2) (8.56 to 20.00)
Anglo	12.19 (4.1) (4.89 to 18.67)	12.64 (4.1) (5.33 to 20.00)	12.42 (4.1) (4.89 to 20.00)	14.08 (3.2) (7.56 to 20.00)	14.80 (3.6) (6.67 to 20.00)	14.45 (3.4) (6.67 to 20.00)

Note. Not all *N*s total 74 due to missing data.

[a] Ethnicity: 100% Latino/Hispanic/Mexican American.

[b] To compute acculturation for each participant, the scores were averaged within each of the two subscales; the Mexican score was then subtracted from the Anglo score.

TABLE 3

Change in Older Adults Over Time in Awareness of and Confidence in HHCS

	Baseline		Postintervention		1 Month Postintervention		6 Months Postintervention		*F* (*df*), *p* Value[a]
Variable	Control	Experimental	Control	Experimental	Control	Experimental	Control	Experimental	Two-way ANOVA Effects Group by Time Interaction Time Main Effect Group Main Effect
Awareness of HHCS[b]	6.77 (3.7)	6.58 (3.9)	7.36 (3.8)	7.33 (5.2)	5.64 (3.1)	7.33 (5.9)	6.64 (4.2)	6.75 (3.9)	0.95 (3,132), 0.42 0.70 (3,132), 0.55 0.15 (1,44), 0.70
Awareness of existence of HHCS subscale[b]	2.50 (2.5)	2.13 (2.4)	2.59 (3.0)	2.46 (2.7)	2.18 (2.2)	3.33 (4.7)	2.82 (2.8)	2.92 (3.0)	1.03 (2.6,112.5), 0.38 0.56 (2.6,112.5), 0.62 0.08 (1,44) 0.79
Awareness of need for HHCS subscale[b]	2.41 (1.9)	2.17 (2.1)	2.68 (2.0)	2.63 (2.3)	1.32 (1.6)	2.25 (2.0)	1.41 (1.7)	1.67 (2.1)	1.16 (2.5,111.7), 0.32 4.39 (2.5,111.7), 0.01[c] 0.29 (1,44) 0.60
Awareness of access to HHCS subscale[d]	1.86 (1.4)	2.32 (0.6)	2.14 (1.2)	2.32 (1.2)	2.24 (1.0)	1.91 (1.2)	2.43 (1.5)	2.27 (0.9)	1.62 (3,123), 0.19 0.90 (3,123), 0.44 0.02 (1,41), 0.88
Confidence in HHCS[b]	2.72 (0.1)	2.71 (0.4)	2.74 (0.2)	2.84 (0.3)	2.79 (0.3)	2.74 (0.2)	2.79 (0.4)	2.88 (0.3)	0.88 (2.5,110.5), 0.44 1.55 (2.5,110.5), 0.21 0.44 (1,44), 0.51
Trust subscale[b]	2.84 (0.1)	2.87 (0.4)	2.93 (0.3)	2.99 (0.2)	3.10 (0.4)	3.00 (0.3)	2.95 (0.5)	3.09 (0.4)	1.42 (3,132), 0.24 4.24 (3,132), 0.01[c] 0.18 (1,44), 0.67
Fear subscale[b]	2.55 (0.3)	2.50 (0.4)	2.47 (0.5)	2.63 (0.5)	2.63 (0.5)	2.61 (0.6)	2.56 (0.4)	2.59 (0.5)	0.74 (3,132), 0.53 0.61 (3,132), 0.61 0.12 (1,44), 0.73

Note. HHCS = home health care services. All values are shown as mean (*SD*), except for the last column.

[a] Repeated measures analysis of variance (ANOVA).

[b] Control, $n = 22$; intervention, $n = 24$.

[c] Significant at $p < 0.05$.

[d] Control, $n = 21$; intervention, $n = 22$.

TABLE 4

Changes Over Time in Caregiver Awareness of and Confidence in HHCS

	Baseline		Postintervention		1 Month Postintervention		6 Months Postintervention		*F* (*df*), *p* Value[a]
Variable	Control	Experimental	Control	Experimental	Control	Experimental	Control	Experimental	Two-way ANOVA Effects Group by Time Interaction Time Main Effect Group Main Effect
Awareness of HHCS[b]	6.23 (5.1)	5.25 (4.1)	7.59 (4.9)	6.96 (4.8)	7.00 (5.3)	7.21 (4.0)	6.95 (4.7)	6.42 (3.6)	0.37 (3,132), 0.78 2.79 (3,132), 0.04[c] 0.18 (1,44), 0.68
Awareness of existence of HHCS subscale[d]	2.18 (3.1)	1.09 (1.6)	2.59 (3.7)	2.26 (2.3)	2.45 (3.6)	2.35 (2.2)	2.64 (3.1)	2.00 (1.8)	0.70 (3,129), 0.55 2.17 (3,129), 0.10 0.59 (1,43), 0.45
Awareness of need for HHCS subscale[d]	2.23 (2.7)	2.39 (2.4)	2.23 (2.6)	2.43 (2.5)	2.55 (2.4)	2.30 (2.1)	2.18 (2.2)	2.00 (2.2)	0.18 (3,129), 0.91 0.28 (3,129), 0.84 0.001 (1,43), 0.98
Awareness of access to HHCS subscale[e]	2.00 (1.4)	2.20 (1.5)	2.95 (1.8)	2.75 (1.2)	2.10 (1.3)	2.90 (1.6)	2.25 (1.1)	2.55 (1.7)	1.45 (3,114), 0.23 3.27 (3,114), 0.02[c] 0.57 (1,38), 0.45
Confidence in HHCS[b]	2.78 (0.4)	2.87 (0.4)	2.80 (0.3)	2.99 (0.3)	2.80 (0.4)	3.06 (0.4)	2.85 (0.4)	3.02 (0.4)	0.90 (3,132), 0.44 1.75 (3,132), 0.16 3.71 (1,44), 0.06
Trust subscale[b]	3.05 (0.5)	3.14 (0.4)	3.08 (0.4)	3.21 (0.4)	3.05 (0.4)	3.29 (0.4)	3.10 (0.5)	3.26 (0.6)	0.56 (2.4,103.4), 0.60 0.76 (2.4,103.4), 0.49 2.04 (1,44), 0.16
Fear subscale[b]	2.35 (0.5)	2.50 (0.7)	2.42 (0.5)	2.68 (0.4)	2.45 (0.5)	2.74 (0.6)	2.51 (0.7)	2.69 (0.7)	0.27 (3,132), 0.85 1.56 (3,132), 0.20 2.94 (1,44), 0.09

Note. HHCS = home health care services. All values are shown as mean (*SD*), except for the last column.

[a] Repeated measures analysis of variance (ANOVA).

[b] Control, $n = 22$; intervention, $n = 24$.

[c] Significant at $p < 0.05$.

[d] Control, $n = 22$; intervention, $n = 23$.

[e] Control, $n = 20$; intervention, $n = 20$.

TABLE 5

Correlations of Use of HHCS With Older Adult and Caregiver Outcomes

Outcome Variable	1 Month Postintervention *r* (*N*), *p* Value	6 Months Postintervention *r* (*N*), *p* Value
Older adults		
Daily living	0.25 (15), 0.18	0.14 (16), 0.30
IADLs subscale	0.16 (15), 0.28	0.20 (16), 0.23
ADLs subscale	0.38 (15), 0.08	0.06 (16), 0.42
Mutuality	0.63 (15), 0.01[a]	0.47 (17), 0.03[a]
Number of hospital days[b]		0.22 (19), 0.18
Number of ED visits[b]		0.13 (19), 0.29
Number of nursing home days[b]		0.21 (19), 0.20
Caregivers		
Number of medical problems	–0.28 (15), 0.16	0.21 (16), 0.22
Medical problems interfere with daily living	–0.24 (11), 0.24	–0.34 (13), 0.13
Objective burden	–0.45 (15), 0.05[a]	–0.28 (16), 0.15
Perceived burden	–0.60 (15), 0.01[a]	–0.34 (16), 0.10
Depression	–0.48 (15), 0.04[a]	–0.10 (16), 0.36
Perceived stress	–0.19 (15), 0.25	–0.35 (16), 0.09
Mutuality	0.70 (15), 0.002[a]	0.68 (17), 0.001[a]

Note. HHCS = home health care services; IADLs = instrumental activities of daily living; ADL = activities of daily living; ED = emergency department.
[a] Significant at $p < 0.05$.
[b] Only measured at 6 months.

mutuality at 1 month ($r = 0.63$, $p = 0.01$, and $r = 0.70$, $p < 0.01$, respectively) and 6 months ($r = 0.47$, $p = 0.03$, and $r = 0.68$, $p < 0.01$, respectively) postintervention (**Table 5**). For caregivers, significant negative relationships were noted between use of HHCS and objective burden ($r = –0.45$, $p = 0.05$), perceived burden ($r = –0.60$, $p = 0.01$), and depression ($r = –0.48$, $p = 0.04$) at 1 month postintervention.

DISCUSSION

Most results, although not as strong as anticipated, were expected. In addition, some interesting patterns consistent with previous studies related to caregiving burden and new associations with mutuality emerged.

Efficacy of the Intervention on Awareness, Confidence, and Use of HHCS

The current study is the first to measure the effects of a telenovela intervention on awareness of and confidence in HHCS. Findings were in the predicted direction. Although no statistically significant intervention effects were noted, improvements occurred over time in regard to awareness of and confidence in HHCS for both groups. The significant time effects provide evidence that viewing and discussing a telenovela (whether focused on HHCS or health screening for older adults) can increase awareness of and confidence in using HHCS. The effect on use of HHCS (91.1% versus 71.2%, respectively, for the intervention and control groups) is further evidence that a telenovela intervention can increase use of HHCS by Mexican American older adults.

Effect of Awareness and Confidence on Use of HHCS

An unexpected negative relationship was noted between awareness and use of HHCS—greater awareness was associated with less use. Perhaps older adults and caregivers who are more aware of the existence of HHCS "take them for granted," assume that they are always an option, and do not feel the need to use them (i.e., they can use them less but know they will always be available if they need them). It may also be that only a minimal level of awareness is necessary and that beyond that point the relationship between awareness and motivation to use

HHCS is diminished. Based on these results, as well as interviews with participants and continued collaboration with the ENCASA Community Advisory Council (Crist, Bruno, Ruiz, & Hepworth, 2013), awareness should continue to be promoted using explicit factual messages about HHCS but with a primary focus on increasing confidence through more identification with the trust displayed by the telenovela characters.

Effect of HHCS Use on Older Adult and Caregiver Outcomes

The effect of HHCS on outcomes was in the expected direction and validates continued promotion of HHCS use by Mexican American older adults. The finding of positive correlations of mutuality with use of HHCS is consistent with evidence that the support and care of HHCS enhance mutuality for caregivers found in Anglo samples (Archbold, Stewart, Greenlick, & O'Keeffe-Rosetti, 2005). This finding is important in the cultural context of Mexican American older adults and caregivers. Although mutuality does not increase over the trajectory of long-term family care, its decline can be decelerated (Lyons et al., 2009). In addition, results support the construct validity and cultural equivalence of the mutuality measure translated into Spanish (Crist, Escandón, Stewart, & Archbold, 2008).

Perceived caregiving burden (i.e., how tiring, difficult, or upsetting caregiving tasks were for caregivers), as well as caregiver depression, were negatively associated with use of HHCS. Greater use of HHCS was associated with less burden and depression. This finding is important because the strong Mexican American cultural norm of familism could cause increased burden or depression if HHCS were perceived as an unwelcomed intrusion rather than a support of the family. Although burden is a controversial concept within the Mexican American culture (Crist, McEwen, et al., 2009), it can be decreased with the use of HHCS, as demonstrated in the current study.

Potential Implications of the Affordable Care Act

The ninth of 10 "Essential Health Benefits" of the ACA is "Preventive and wellness services and chronic disease management" (Centers for Medicare & Medicaid Services [CMS], 2012, para. 8). This assurance should include post-hospital HHCS. However, some insurance policies do not cover HHCS. Promoting the benefits, acceptance, and use of HHCS is futile if they are not accessible to vulnerable groups. Policy needs to be changed so that older adults can receive HHCS. Penalties for rehospitalizations (Sacks et al., 2014), which HHCS use can prevent, have incentivized more thorough and diligent case management. However, post-acute care costs are being scrutinized (Chandra, Dalton, & Holmes, 2013), which could potentially create disincentives to make referrals for post-acute care such as HHCS. Furthermore, when discharge planning is relegated to specific, limited, case management staff only, and staff nurses are not involved in discharge planning from the first day of hospitalization, patients needing referrals to HHCS do not receive them as a consistent standard of care.

RESEARCH IMPLICATIONS

Although HHCS are not always offered when appropriate (Bowles et al., 2009), the current study focused on Mexican American older adults' and their caregivers' acceptance of HHCS after referral. Discharge planning for Mexican American older adults needs to be explored further. In addition, given the promise of the findings reported herein, telenovelas should be tailored and tested with other vulnerable minority groups. As was done with the ENCASA telenovela, it would be important to collaborate with cultural community partners during development of the script, language, and research design.

LIMITATIONS

The measures for awareness of and confidence in HHCS (Crist et al., 2007; Crist, Velázquez, et al., 2006) may need revision. The reliability of the 6-item awareness scale needs improvement, and the most obvious approach would be to generate more appropriate items. Less significant findings may have been due to the need to include more explicit information about HHCS in the telenovela and use of a control that is less similar. The control telenovela that addressed health screening for older adults was more an intervention than a control condition.

In addition, although more participants were recruited than indicated necessary by the power analysis, the final sample for analysis was not as large as desired because of the lack of referrals to HHCS. Policy issues regarding how Mexican American older adults are offered HHCS need to be addressed. "Dyads" in the Latino community is an important design issue in crosscultural research. It is a fallacy to assume that a Mexican American family has one "caregiver." Caregiving responsibilities and activities are usually shared among offspring, the spouse, and other extended family members, although social support in Mexican American families has been shown to be decreasing (Phillips & Crist, 2008). However, in the current study, the older adult and family designated one individual who provided most of the care. Future studies should address the

multiplicity of the caregiver role. Addressing these issues should lead to more robust results.

CONCLUSION

The underuse of HHCS, especially among Mexican American older adults, is critical. Post-hospital care costs billions of dollars per year, but can be significantly reduced by using HHCS. The current innovative community-based intervention has promise to improve outcomes for Mexican American older adults and their caregivers through culturally congruent telenovelas to increase use of HHCS and reduce important health disparities in Mexican American older adults and caregivers.

The current study provides empirical support to and greater understanding of interventions that directly target ethnic/cultural barriers. The telenovela intervention increases access of HHCS, thereby decreasing use disparities, by demonstrating that the use of HHCS supports the cultural strength of Mexican American families. Results include improved outcomes such as enhanced Mexican American older adult and caregiver mutuality and reduced Mexican American caregiving burden. Research regarding the use of HHCS in underserved and culturally diverse groups is needed (Greysen et al., 2014). Predictions of fewer caregivers for more older adults (Redfoot, Feinberg, & Houser, 2013) and increasing health disparities for minority ethnic groups increase the importance of intervention research (Martin, 2011). More studies need to be conducted in regard to ethnicity, disparities, and planning post-hospitalization care.

Interventions to improve older adults' and families' understanding of the post-hospital care needed during hospital-to-home transitions are needed (Romagnoli, Handler, Ligons, & Hochheiser, 2013). The intervention reported in the current study demonstrated the value of introducing HHCS in a culturally relevant manner and can be easily transferred and used in ambulatory care and other settings as well as the hospital. The use of the telenovela will enable providers to thoroughly inform their clients about their option for HHCS. The current study should lead to future interdisciplinary translational research that will reduce health disparities within vulnerable populations by increasing their use of HHCS.

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