



Published in final edited form as:

*J Alzheimers Dis.* 2022 ; 89(4): 1375–1384. doi:10.3233/JAD-220235.

## Acceptability and preliminary effectiveness of a remote dementia educational training among primary care providers and health navigators

Jaime Perales-Puchalt<sup>1,2</sup>, Ryan Townley<sup>1,2,3</sup>, Michelle Niedens<sup>1,2,3</sup>, Eric D Vidoni<sup>1,2</sup>, K Allen Greiner<sup>2,3</sup>, Tahira Zufer<sup>2,3</sup>, Tiffany Schwasinger-Schmidt<sup>4</sup>, Jerrihlyn L McGee<sup>2</sup>, Hector Arreaza<sup>5,6</sup>, Jeffrey M Burns<sup>1,2,3</sup>

<sup>1</sup>-University of Kansas Alzheimer's Disease Research Center, Fairway, KS

<sup>2</sup>-University of Kansas Medical Center, Kansas City, KS

<sup>3</sup>-University of Kansas Health System, Kansas City, KS

<sup>4</sup>-University of Kansas School of Medicine-Wichita, Wichita, KS

<sup>5</sup>-Clínica Sierra Vista, Bakersfield, CA

<sup>6</sup>-Rio Bravo Family Medicine Residency Program, Bakersfield, CA

### Abstract

**Background:** Optimal care can improve lives of families with dementia but remains under-implemented. Most healthcare professional training is in person, time-intensive, and does not focus on key aspects such as early detection, and cultural competency.

**Objective:** We explored the acceptability and preliminary effectiveness of a training, The Dementia Update Course, which addressed these issues. We hypothesized that the training would lead to increased levels of perceived dementia care competency among key healthcare workers, namely primary care providers (PCPs) and health navigators (HNs).

**Methods:** We conducted pre-post training assessments among 22 PCPs and 32 HNs. The 6.5-hour training was remote, and included didactic lectures, case discussion techniques, and materials on dementia detection and care. Outcomes included two 5-point Likert scales on acceptability, eleven on perceived dementia care competency, and the three subscales of the General Practitioners Confidence and Attitude Scale for Dementia. We used paired samples t-tests to assess the mean differences in all preliminary effectiveness outcomes.

**Results:** The training included 28.6% of PCPs and 15.6% of HNs that self-identified as non-White or Latino and 45.5% of PCPs and 21.9% of HNs who served in rural areas. PCPs (84.2%) and HNs (91.7%) reported a high likelihood to recommend the training and high satisfaction.

---

Corresponding Author: Jaime Perales Puchalt, PhD, MPH, KU Alzheimer's Disease Research Center, 4350 Shawnee Mission Parkway, Fairway, KS 66205., 913-588-3716, jperales@kumc.edu.

Conflict of Interest/Disclosure Statement: The authors have no conflict of interest to report.

Statement for ethical approval: The University of Kansas Medical Center Institutional Review Board deemed this project a quality improvement project and did not require that participants provide an informed consent.

Most preliminary effectiveness outcomes analyzed among PCPs (11/14) and all among HNs (8/8) experienced an improvement from pre- to post-training ( $p < 0.05$ ).

**Conclusions:** A relatively brief, remote, and inclusive dementia training was associated with high levels of acceptability and improvements in perceived dementia care competency among PCPs and HNs.

### Keywords

Education; dementia; healthcare professionals; Attitude of Health Personnel

---

## INTRODUCTION

Alzheimer's disease and related disorders (ADRD) pose a serious public health threat worldwide. The population aged 65 and older is increasing and the risk of ADRD is known to increase with age [1, 2]. According to the Pan American Health Organization, ADRD was the second leading cause of mortality among people 18 and older in the US in 2019, and the 15<sup>th</sup> leading cause of disability [3]. Individuals with ADRD have more chronic conditions (e.g., diabetes, depression, pneumonia), polypharmacy use, and hospitalizations than older adults without ADRD [4]. Caregivers of people with ADRD often experience disproportionate depression (~34%) and anxiety (~44%) vs caregivers of people with stroke (19% of depression and 31% of anxiety) and non-caregivers of similar ages (~12% of depression) [4, 5]. ADRD costs exceed those of cancer and heart disease by \$32 and \$7 billion respectively [4, 6].

Early diagnosis and implementation of optimal care can improve the prognosis for people with ADRD and is a priority for the National Alzheimer's Project Act (NAPA) [7]. Though there are no treatments that prevent or stop the progression of ADRD, there is evidence that pharmacologic and non-pharmacologic interventions can stabilize and delay the progression of cognitive, functional, and behavioral outcomes, improving the lives of individuals with ADRD and their families [8, 9]. Given the progressive nature of ADRD, early diagnosis may allow both the person with ADRD and the family to participate in their care plan and begin more efficacious interventions at an earlier time point [10]. Early detection and care have benefits at the individual, familial and societal levels [11–14]. For example, longitudinal data from the Medicare fee-for-service claims suggests that individuals with ADRD who were newly diagnosed and treated had a lower mortality, institutionalization rate, and annual costs than those who were not treated [14]. The healthcare system is ideally positioned to coordinate ADRD care, as most older adults in the US are insured and have a usual source of healthcare [15, 16]. Among healthcare professionals, primary care providers (PCPs) have the potential to play an important role in detection and treatment as they are often the first point of contact [17]. Given the fragmentation of the healthcare system and community resources, health navigators (HNs) may also play an important role in ADRD care [18]. HNs are healthcare professionals or trained non-professionals that facilitate access to health and social services among patients and their families, facilitate continuity of care; and identify and remove barriers to care [18].

Despite the potential of healthcare professionals to improve the lives of families with ADRD, care remains under-implemented. Approximately 49.2%–56.5% of Americans with ADRD are unaware of their condition and remain potentially undiagnosed [19]. In the clinic, only 16% of people 65 and older receive regular cognitive assessments during routine health check-ups [20]. Only about 51% of healthcare providers follow up with cognitive screening results reported by their patients after a screening event [21], half of PCPs recommend laboratory testing for all patients with a detected cognitive impairment, and 17% percent make specialist referrals for all patients with a detected cognitive impairment [20]. Half of people with ADRD are being treated with cognitive medications [22]. Almost 80% of family caregivers of people with ADRD report unmet needs in at least one service area (e.g., activities of daily living, ADRD symptoms, timing of care), and nearly one third do not receive any type of caregiver support services [23, 24].

In addition, Latino, non-Latino Black, and rural individuals have a higher ADRD risk and are disproportionately underserved in care outcomes [19, 20, 22, 23, 25, 26]. For example, the likelihood of non-Latino Black and Latino individuals with ADRD to be undiagnosed is 34–40% higher than non-Latino Whites [19]. If diagnosed, Latinos with ADRD experience a delay in their diagnosis of eight months compared to non-Latino Whites [27]. Non-Latino Black people with ADRD are 6% less likely to use anti-dementia medications than non-Latino Whites [22]. Non-Latino White caregivers have been found to be 2.3 times more likely than foreign-born Latinos to use ADRD support services [23]. People with ADRD residing in rural settings are less likely to receive formal supports than those in urban settings (35% vs 88% respectively) [26].

Multiple factors contribute to the under-implementation of ADRD detection and care in healthcare. Strategies to provide early ADRD diagnosis and care in primary care clinics are lacking [28, 29]. Some PCPs are reluctant to address ADRD due to limited ADRD knowledge on the potential benefits of appropriate diagnosis and care [30, 31]. Some PCPs also lack the necessary tools and resources to diagnose, provide care for or refer to frequently fragmented community resources [30, 31]. HNs are rarely trained in aging and ADRD care. In fact, only 2% of social work textbooks address the aging population and aging specific issues, and none address specific content around ADRD [32]. Healthcare workers' general lack of cultural and linguistic proficiency and knowledge of validated tools for assessment and care intensify these barriers among non-White and Latino families [31, 33–36].

Training PCPs and HNs can address some of the barriers to ADRD care implementation. Few ADRD training programs for healthcare professionals exist and most have been developed and tested in the last decade [37, 38]. However, most training programs have relied on in-person sessions, which pose barriers to largely rural regions such as the Midwestern US. This barrier and the COVID-19 pandemic have also highlighted the importance of virtual or remote training programs. Most existing training programs are time-intensive and add to the already burdened schedules of healthcare professionals [30, 31]. Few training programs focus on early detection and empowering the person with ADRD to participate in the decision-making process of their care, which potentially reduces the probability of beneficial health and economic outcomes [11–13, 39]. The focus on health

disparities within most ADRD healthcare professional training programs is scarce, which may contribute to widening these disparities. There is a need for ADRD training programs for healthcare professionals that are highly accessible, time-efficient, include early detection, center the care on the patient and addresses ADRD disparities. The objective of the current manuscript was to explore the acceptability and preliminary effectiveness of a relatively brief online ADRD training that addresses these needs, the Dementia Update Course. We hypothesized that the Dementia Update Course would lead to increased levels of ADRD care competency among PCPs and HNs in general and specifically competency to serve non-White and Latino people with ADRD and their families.

## METHODS

This one-arm study included pre-post-training assessments. This healthcare professional training was part of two NIH-funded projects (R24 AG063724 & K01 MD014177). First, MyAlliance is a three-year project that aims to increase ADRD research participation using a three-pronged strategy. This strategy involves the engagement of healthcare professionals, community organizations, and the lay community. MyAlliance has a special interest in increasing ADRD research participation among rural, non-White, and Latino communities. Second, Alianza Latina (Latino Alliance) is a five-year project that aims to improve ADRD care services among Latinos. The Alianza Latina project aims to improve healthcare professionals' ability to detect Latinos with ADRD and provide more appropriate care and referrals to a culturally and linguistically proficient ADRD care manager. The University of Kansas Medical Center Institutional Review Board deemed this project a quality improvement project and did not require that participants provide an informed consent.

The Dementia Update Course was a one half-day (6.5 hours) educational event held five times (March, July, September and November 2021, and March 2022). The course was open to a wide diversity of professionals, even though only physicians, nurses, and social workers could apply for continuing education credits upon attendance to 90% of the sessions. The cost of the training was \$50, unless healthcare professionals requested a waiver, in which case, there was no cost. Attendees only participated in one of the five events, which included virtually the same content. The November 2019 event differed from the rest in that it was condensed to 4 hours, and had as title "Dementia detection: Best practices in screening, diagnosing and treating common dementias". The educational framework that informed the Dementia Update Course was a combination of the Health Belief Model and Social Learning Theory, by including clinically-focused lectures, case examples with discussion, videos and materials for additional reference [40]. Table 1 shows the agenda, which includes ADRD detection and diagnosis, treatment, and care for cognitive and behavioral symptoms, and how to apply the tools to a healthcare professional's daily workflow. Modules highlighted the importance of early detection, patient empowerment, cultural competence, and tailoring care to disparity populations, especially Latinos. Elements of patient empowerment followed the Client Empowerment Model, which is in concert with strength-based social work philosophy, and incorporates components of knowledge/health literacy, shared decision making, personal control, and positive patient-professional interaction based on the stage of ADRD [39]. Cultural competence included information about disparities in ADRD experienced by diverse groups, and how they can be addressed in the healthcare practice.

Information integrated key elements of culturally and linguistically appropriate services (CLAS), covered patient-centered care and effective communication, and adapted and validated tools with a special focus on Latinos [41, 42]. The modality of all training events was live and online via videoconferences. All attendees also received copies of recommended cognitive screening tools and the materials reviewed during the course. Staff from the University of Kansas Alzheimer's Disease Research Center led all the modules. This staff included two neurologists, a social worker, and a public health researcher, all of whom were experts in ADRD care. Recruitment of participants capitalized on the University of Kansas Alzheimer's Disease Research Center's plan to grow partnerships in the state of Kansas and beyond to create a more ADRD capable community. The center's team set a plan to gradually form partnerships at least one clinic from most Kansas counties within Kansas counties within three years. The team identified as many clinics as possible within those counties and attempted to contact them via warm-contacts through mutual connections when possible. When not possible, the team attempted cold-contacts. The team met with the clinic representatives that were willing to start a partnership conversation and explained the Center's plan for state-wide partnerships. The team contacted these clinics and other clinicians they had previously collaborated with to recruit healthcare professionals via emails, phone calls, or word of mouth up to one year before the training. Interested participants enrolled in the training either via a link or by calling the team.

## Procedure

A staff member sent an email to participants one day before the training asking them to complete a pre-training survey via REDCap [43], and highlighting the voluntary and anonymous nature of the assessment. On the day of the training, one of the instructors introduced the training content to the audience and the instructors presented their modules, requesting recurrent interaction. Immediately after finishing the training, a staff member reminded the participants to complete the post-survey, which a staff had emailed them one hour before the end of the training.

## Data Collection and Measures

Pre-training survey socio-demographic information included age, gender, race, ethnicity, occupation, rural/urban setting of their clinic, and state. Post-training acceptability of the intervention was measured by asking two items developed by the research team that included 5-point Likert scales about how likely they are to recommend the training to a colleague, and how satisfied they were with the training from 1 (not at all) to 5 (very much). The post-training survey also included an open-ended acceptability question asking what participants liked most about the training.

Preliminary effectiveness outcomes included several ADRD perceived competency constructs and other ADRD-related attitudes measured via the following survey instruments. The first instrument included eleven items developed by the research team. These items included 5-point Likert scales about perceived confidence in explaining the importance of early identification of cognitive decline, selecting the appropriate tools to screen for early signs of ADRD, differentially diagnosing the most common signs of ADRD, identifying the appropriate interventions based upon identification of cognitive decline, using elements of

the Client Empowerment Model as applied to ADRD, implementing cognitive screenings in regular workflow, impacting the quality of life of families with ADRD, and serving English-speaking Latino, Spanish-speaking Latino, Non-Latino Black and other non-White families with ADRD. Each item response ranged from 1 (not at all) to 5 (totally confident).

The second instrument was the General Practitioners Confidence and Attitude Scale for Dementia (GPACS-D), which comprises three subscales: Confidence in Clinical Abilities (six items), Attitude to Care (six items), and Disengagement (three items). The scale has been validated using confirmatory factor analysis, reliability, validity, and sensitivity to change tests [44, 45]. Each item response ranges from 1 (strongly agree) to 5 (strongly disagree). We divided each subscale score by their number of items to standardize the score ranges from 1 to 5. Higher scores mean higher confidence in their clinical abilities, better attitudes towards ADRD care, and higher disengagement with ADRD care. We adapted the GPACS-D by using US English spelling and replacing the community organization “Alzheimer’s Australia” with the “Alzheimer’s Association”. In our study, the Cronbach Internal Consistency Alpha was 0.8 for both Confidence in Clinical Abilities and Attitude to Care, and 0.7 for Disengagement.

## Analysis

Participants from diverse professional backgrounds were eligible to participate in the course. However, for the analysis, only those who identified as PCPs or HNs were eligible. PCPs could include medical doctors, physician assistants, nurse practitioners, and doctors in osteopathy. HNs could include information and referral providers, options counselors, social workers, nurses, and case managers, who provided health navigation services. Given their potential different roles in ADRD care, analyses were conducted separately for the two types of healthcare professions (PCPs focused on detection and treatment vs HNs focused on referrals and coordinated care). Means, standard deviations, percentages, and frequencies were calculated for pre-training survey characteristics and acceptability outcomes. Differences in baseline characteristics between participants who completed the post-training survey and those who did not were calculated using Chi-Square tests and independent samples t-tests. Paired samples t-tests were used to compare the healthcare professionals’ perceived confidence in serving Spanish-speaking Latino vs English-speaking Latino and non-Latino Black families with ADRD. Paired samples t-tests were conducted to assess the mean differences in all preliminary effectiveness outcomes. We only conducted analyses of diagnosis-related outcomes (GPACS-D and three confidence items) among PCPs, given that HNs do not diagnose ADRD. We used SPSS 20 to run quantitative analyses and used a significance level of  $\alpha=0.05$  to protect against type I error. To analyze the answers to the open-ended acceptability question, we coded qualitative answers and later defined acceptability categories that summarized different discourses.

## RESULTS

### Baseline characteristics of the sample

The characteristics of the sample are shown in Table 2. Seventy-three individuals RSVP’d and 88 individuals attended one of the five training sessions and responded to the pre-



training survey. A total of 54 participants were eligible for analysis, as they identified as a PCP or a HN, and 44 (81.5%) of them completed the post-training survey. Those excluded reported professions other than PCP or HN, namely non-PCP doctors and nurses, individuals who reported no profession, recruitment professionals, research assistants or research interns. Among PCPs, the average age was 48.0 (SD 13.5) and, 13 (59.1%) identified as women, 15 (71.4%) as non-Latino White, and 10 (45.5%) as practicing in rural communities. Among HNs, the average age was 48.3 (SD 15.2) and, 31 (96.9%) identified as women, 27 (84.4%) as non-Latino White, and 5 (20.0%) as practicing in rural communities. Participants' perception of their ability to serve Spanish-speaking Latino families with ADRD (2.0; SD: 1.0) was lower than that of English-speaking Latino (2.8, SD: 1.1;  $p < 0.001$ ) and non-Latino Black families (3.0; SD: 1.1;  $p < 0.001$ ). There was also a statistically significant difference between their perceived ability to serve English-speaking Latino and non-Latino Black families with ADRD ( $p = 0.007$ ).

### Acceptability and preliminary effectiveness of the Dementia Update Course

Table 3 shows the acceptability and preliminary effectiveness of the Dementia Update Course in the total sample and among PCPs. Among PCPs, 16 (84.2%) said their likelihood of recommending the training to a colleague was either high or very high, and 16 (84.2%) said their satisfaction with the training was high or very high. Among HNs, 22 of them (91.7%) reported that their likelihood to recommend the training, and their satisfaction with it were high or very high. No participants rated their likelihood of recommending the training or their satisfaction as low or very low. Most preliminary effectiveness outcomes analyzed among PCPs (11/14) and all among HNs (8/8) experienced an improvement from pre- to post-training ( $p < 0.05$ ). The only non-significant changes among PCPs were in their confidence to improve the quality of life of families with ADRD, and to serve non-Latino Black and non-White families with ADRD other than Latinos.

At the end of the training, participants responded to open-ended questions about what training aspects they perceived to be most useful. We categorized responses into four themes. First, participants showed gratitude and spoke of the usefulness of the training. An example of this category includes "Thank you for making a difference in the lives of those with dementia and their families!". Second, participants highlighted the usefulness of training on current research and up-to-date care: "Learning about the Alzheimer's Disease Center and the current knowledge and advancements regarding early detection" or "I found the ongoing research and explanations behind the diagnosis very helpful! Thank you!!". Third, participants found different aspects of the teaching modalities used helpful: "Case 'studies', real-life examples" or "Driving discussion was the most helpful lecture. The specific example of what was needed and having an occupational therapist provide the exam was a helpful idea". Fourth, participants highlighted the importance of topics including detection (imaging, screening tools, early detection), care (pharmacological and non-pharmacological), ADRD types and stages, and resources available.

## DISCUSSION

The current manuscript aimed to explore the acceptability and preliminary effectiveness of the Dementia Update Course among PCPs and HNs. In line with our hypothesis, findings suggest that this real-world training leads to improved ADRD-related attitudes, and perceived ADRD care competency among PCPs and other healthcare professionals. Previous research shows that training improves ADRD knowledge, attitudes, and perceived competence to different extents among healthcare professionals in the US and elsewhere [45–53]. However, this training is innovative, as it focuses on eliminating health disparities, promoting early detection, and empowering the person with ADRD, which may bring about health and economic benefits to families with ADRD irrespective of their ethnic and racial background [11–13, 39]. Moreover, the logistics of this training program address common and emergent barriers to ADRD training, including professionals' burdened schedules, distance to training venues, and the COVID-19 pandemic.

A key component of the NAPA is to address ADRD care disparities among ethnically and racially minoritized populations [7]. To address health disparities, the Institute of Medicine recommends cultural competence training programs given their success in improving skills, knowledge and attitudes among healthcare professionals [54]. To our knowledge, this is among the first studies to include a cultural competence in an ADRD training curriculum. The Dementia Update Course was associated with similar increases in the perceived ability to serve families with ADRD of different ethnic and racial backgrounds. These similar improvements took place despite the fact that healthcare professionals were less confident about serving Spanish and to a lesser extent English speaking Latinos, likely due to language, immigration status, and insurance status barriers [16]. Another important aspect is the representation of professionals from non-White and Latino backgrounds in our training sessions, who are under-represented in their professions, and can reduce health disparities when matched with patients of similar backgrounds [55–61]. In our sample, 28.2% of PCPs identified as a member of a group other than non-Latino White, which is a higher proportion than the physician workforce in the state where the research was conducted (14.4%) [62].

Our inclusion of nearly half of PCPs and one fifth of HNs who practiced in rural communities was encouraged by our region's largely rural population and NAPA's urge to facilitate the translation of research findings into rural public health practice [7]. In rural areas, ADRD specialists might not be readily available, and PCPs might be the only professionals in charge of ADRD detection and care [51]. To our knowledge, only one other ADRD training study has focused on rural healthcare professionals [51]. This training increased professionals' knowledge and confidence to use cognitive screening tools to help diagnose and treat patients with ADRD. Our work builds upon this research by making it fully remote and reducing the number of days of training from three to one.

The current study has certain limitations. Our small non-probabilistic sample may limit the external validity of these findings. However, the sample sizes of PCPs and HNs were big enough to detect differences in these two healthcare professions with specific key roles in ADRD care. To improve generalizability of the results, we were inclusive with respect to recruiting professionals from several rural and urban counties across the state of Kansas,



and with respect to racial and ethnic background. The sample only included individuals who decided to attend, potentially introducing selection bias leading to a sample with positive baseline ADRD care attitudes or receptiveness to the training. This potential bias is present in most research studies. However, despite the potential selection of those with a high baseline ADRD care attitudes, the training was associated with improvements in nearly all outcomes. The study lacked a control group and randomization, thus preventing causality inference. It remains unknown whether changes in attitudes will translate into positive ADRD care behaviors. Previous studies suggest that it is possible to increase compliance with ADRD guidelines via similar training programs (e.g., increased use of cognitive screening tools) [50, 52, 63].

This study has significant implications for public health. The fact that this real-world training leads to improved perceived ADRD-related attitudes and perceived care competence indicates that relatively brief, remote training programs can have similar effects to more time-intensive in-person versions. The improvement of most outcomes specifically among PCPs and HNs is especially relevant. PCPs are the first point of contact with families with ADRD, and are in an optimal position to detect and initiate their care coordination [17]. HNs may play a key role in ADRD care by providing coordinated care and refer to often highly-fragmented healthcare system and community resources [18].

Studies should compare the cost-effectiveness and implementation outcomes of training programs such as the Dementia Update Course vs longer, more time-intensive, and in-person training programs. There was some attrition in the sample, but we did not assess reasons for such attrition. Future studies should explore these reasons to increase the feasibility of ADRD training programs among diverse healthcare professions. Future studies should expand understanding of ADRD specific curricula in primary care residencies, social work and other HN-related programs through larger samples and a higher diversity of regions. Ultimately, studies may also want to assess the impact of these training programs on healthcare behavioral outcomes (e.g., compliance with guidelines), and directly on families with ADRD. This impact could be measured as effectiveness or cost-effectiveness by including comparison groups exposed to different types of training features (e.g., duration, in-person modality, topics).

## CONCLUSION

The Dementia Update Course, a relatively brief and remote ADRD training was associated with improved ADRD attitudes and perceived care competency among PCPs and HNs. While other training programs have achieved similar outcomes, this training program addresses common barriers to ADRD care implementation by making it highly accessible, and including issues that are public health priorities, such as early detection, client empowerment, and addressing ADRD disparities via cultural competency [7]. Its high acceptability together with its relative brevity and virtual accessibility, make this training an ideal candidate for broad implementation.

## Acknowledgements:

This work was supported by the NIH under Grants K01 MD014177, R24 AG063724, and P30 AG072973. We thank Mary Beth Warren for assisting with the continuing education logistics. We also thank those who participated in the training program, those who promoted it, and everybody who has contributed directly and indirectly to this research.

## References

- [1]. Hebert LE, Weuve J, Scherr PA, Evans DA (2013) Alzheimer disease in the United States (2010–2050) estimated using the 2010 census. *Neurology* 80, 1778–1783. [PubMed: 23390181]
- [2]. Administration on Aging, Administration for Community Living, US Department of Health & Human Services (2016), p. 3.
- [3]. Pan American Health Organization (2021), <https://www.paho.org/en/noncommunicable-diseases-and-mental-health/noncommunicable-diseases-and-mental-health-data-39>.
- [4]. Alzheimer's Association (2021) 2021 Alzheimer's disease facts and figures. *Alzheimer's & Dementia* 17.
- [5]. Sallim AB, Sayampanathan AA, Cuttilan A, Ho RC-M (2015) Prevalence of mental health disorders among caregivers of patients with Alzheimer disease. *Journal of the American Medical Directors Association* 16, 1034–1041. [PubMed: 26593303]
- [6]. Hurd MD, Martorell P, Delavande A, Mullen KJ, Langa KM (2013) Monetary costs of dementia in the United States. *New England Journal of Medicine* 368, 1326–1334. [PubMed: 23550670]
- [7]. U.S. Department of Health & Human Services, National Plan to Address Alzheimer's Disease: 2016 Update, Office of The Assistant Secretary for Planning and Evaluation, <https://aspe.hhs.gov/national-plan-address-alzheimers-disease-2015-update#goal4>,
- [8]. Cotter VT (2006) Alzheimer's disease: issues and challenges in primary care. *Nursing Clinics* 41, 83–93. [PubMed: 16492455]
- [9]. Gitlin LN, Kales HC, Lyketsos CG (2012) Nonpharmacologic management of behavioral symptoms in dementia. *Jama* 308, 2020–2029. [PubMed: 23168825]
- [10]. Milne A, Culverwell A, Guss R, Tuppen J, Whelton R (2008) Screening for dementia in primary care: a review of the use, efficacy and quality of measures. *International Psychogeriatrics* 20, 911–926. [PubMed: 18533066]
- [11]. Winblad B, Wimo A (1999) Assessing the societal impact of acetylcholinesterase inhibitor therapies. *Alzheimer disease and associated disorders* 13, S9–19.
- [12]. Wimo A (2004) Cost effectiveness of Cholinesterase Inhibitors in the treatment of Alzheimer's Disease. *Drugs & aging* 21, 279–295. [PubMed: 15040756]
- [13]. Mesterton J, Wimo A, Langworth S, Winblad B, Jonsson L (2010) Cross sectional observational study on the societal costs of Alzheimer's disease. *Current Alzheimer Research* 7, 358–367. [PubMed: 19939223]
- [14]. Black CM, Fillit H, Xie L, Hu X, Kariburyo MF, Ambegaonkar BM, Baser O, Yuce H, Khandker RK (2018) Economic burden, mortality, and institutionalization in patients newly diagnosed with Alzheimer's disease. *Journal of Alzheimer's Disease* 61, 185–193.
- [15]. U.S. Department of Health and Human Services (2017) U.S. Department of Health and Human Services, Washington, DC.
- [16]. Administration for Community Living (2015), Washington DC.
- [17]. Drabo EF, Barthold D, Joyce G, Ferido P, Chui HC, Zissimopoulos J (2019) Longitudinal analysis of dementia diagnosis and specialty care among racially diverse Medicare beneficiaries. *Alzheimer's & Dementia* 15, 1402–1411.
- [18]. Carter N, Valaitis RK, Lam A, Feather J, Nicholl J, Cleghorn L (2018) Navigation delivery models and roles of navigators in primary care: a scoping literature review. *BMC health services research* 18, 1–13. [PubMed: 29291745]
- [19]. Lin PJ, Emerson J, Faul JD, Cohen JT, Neumann PJ, Fillit HM, Daly AT, Margaretos N, Freund KM (2020) Racial and Ethnic Differences in Knowledge About One's Dementia Status. *Journal of the American Geriatrics Society* 68, 1763–1770. [PubMed: 32282058]

- [20]. Alzheimer's Association (2019) 2019 Alzheimer's disease facts and figures: Special report: Alzheimer's detection in the primary care setting: Connecting patients with physicians. *Alzheimer's & dementia* 15, 321–387.
- [21]. Galvin JE, Tolea MI, Chrisphonte S (2020) What older adults do with the results of dementia screening programs. *PLoS One* 15, e0235534. [PubMed: 32609745]
- [22]. Koller D, Hua T, Bynum JP (2016) Treatment Patterns with Antidementia Drugs in the United States: Medicare Cohort Study. *J Am Geriatr Soc* 64, 1540–1548. [PubMed: 27341454]
- [23]. Scharlach AE, Giunta N, Chow JC-C, Lehning A (2008) Racial and ethnic variations in caregiver service use. *Journal of Aging and Health* 20, 326–346. [PubMed: 18332187]
- [24]. Li H (2012) Unmet service needs: a comparison between dementia and non-dementia caregivers. *Home health care services quarterly* 31, 41–59. [PubMed: 22424306]
- [25]. Weden MM, Shih RA, Kabeto MU, Langa KM (2018) Secular Trends in Dementia and Cognitive Impairment of US Rural and Urban Older Adults. *American Journal of Preventive Medicine* 54, 164–172. [PubMed: 29246677]
- [26]. Bédard M, Koivuranta A, Stuckey A (2004) Health impact on caregivers of providing informal care to a cognitively impaired older adult: rural versus urban settings. *Canadian Journal of Rural Medicine* 9, 15–23. [PubMed: 15603671]
- [27]. Barker WW, Luis C, Harwood D, Loewenstein D, Bravo M, Ownby R, Duara R (2005) The effect of a memory screening program on the early diagnosis of Alzheimer disease. *Alzheimer Disease & Associated Disorders* 19, 1–7. [PubMed: 15764864]
- [28]. Chodosh J, Mittman BS, Connor KI, Vassar SD, Lee ML, DeMonte RW, Ganiats TG, Heikoff LE, Rubenstein LZ, Della Penna RD (2007) Caring for patients with dementia: how good is the quality of care? Results from three health systems. *Journal of the American Geriatrics Society* 55, 1260–1268. [PubMed: 17661967]
- [29]. Rosen CS, Chow HC, Greenbaum MA, Finney JF, Moos RH, Sheikh JI, Yesavage JA (2002) How well are clinicians following dementia practice guidelines? *Alzheimer Disease & Associated Disorders* 16, 15–23. [PubMed: 11882745]
- [30]. Bradford A, Kunik ME, Schulz P, Williams SP, Singh H (2009) Missed and delayed diagnosis of dementia in primary care: prevalence and contributing factors. *Alzheimer disease and associated disorders* 23, 306. [PubMed: 19568149]
- [31]. Boise L, Camicioli R, Morgan DL, Rose JH, Congleton L (1999) Diagnosing dementia: perspectives of primary care physicians. *The Gerontologist* 39, 457–464. [PubMed: 10495584]
- [32]. Ball E (2018) Ageism in Social Work Education: A Factor in the Shortage of Geriatric Social Workers, California State University, Long Beach.
- [33]. Ganguli I, Souza J, McWilliams JM, Mehrotra A (2018) Practices caring for the underserved are less likely to adopt Medicare's annual wellness visit. *Health Affairs* 37, 283–291. [PubMed: 29401035]
- [34]. Ortiz F, Fitten LJ (2000) Barriers to healthcare access for cognitively impaired older Hispanics. *Alzheimer Disease & Associated Disorders* 14, 141–150. [PubMed: 10994655]
- [35]. Vega WA, Kolody B, Aguilar-Gaxiola S, Catalano R (1999) Gaps in service utilization by Mexican Americans with mental health problems. *American Journal of Psychiatry* 156, 928–934. [PubMed: 10360134]
- [36]. Ferraro FR (2015) *Minority and cross-cultural aspects of neuropsychological assessment: enduring and emerging trends*, Psychology Press.
- [37]. Costa GDd, Spineli VMCD, Oliveira MAdC (2019) Professional education on dementias in Primary Health Care: an integrative review. *Revista brasileira de enfermagem* 72, 1086–1093. [PubMed: 31432969]
- [38]. Perry M, Draškovi I, Lucassen P, Vernooij-Dassen M, van Achterberg T, Rikkert MO (2011) Effects of educational interventions on primary dementia care: a systematic review. *International journal of geriatric psychiatry* 26, 1–11. [PubMed: 21157845]
- [39]. Polese F, Moretta Tartaglione A, Cavacece Y (2016) in proceedings 19th Toulon-Verona International Conference Excellence in Services.
- [40]. Rosenstock IM, Strecher VJ, Becker MH (1988) Social learning theory and the health belief model. *Health education quarterly* 15, 175–183. [PubMed: 3378902]

- [41]. Martinez KM, Green CE, Sanudo FM (2004) The CLAS challenge: promoting culturally and linguistically appropriate services in health care. *International Journal of Public Administration* 27, 39–61.
- [42]. US Department of Health & Human Services, A physician's practical guide to culturally competent care, <https://www.thinkculturalhealth.hhs.gov/education/physicians>, Accessed 8/28/2018.
- [43]. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG (2009) Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *Journal of biomedical informatics* 42, 377–381. [PubMed: 18929686]
- [44]. Mason R, Doherty K, Eccleston C, Annear M, Lo A, Tierney L, McInerney F, Robinson A (2019) General practitioners attitude and confidence scale for dementia (GPACS-D): confirmatory factor analysis and comparative subscale scores among GPs and supervisors. *BMC family practice* 20, 1–8. [PubMed: 30606122]
- [45]. Mason R, Doherty K, Eccleston C, Winbolt M, Long M, Robinson A (2020) Effect of a dementia education intervention on the confidence and attitudes of general practitioners in Australia: a pretest post-test study. *BMJ open* 10, e033218.
- [46]. Chodosh J, Berry E, Lee M, Connor K, DeMonte R, Ganiats T, Heikoff L, Rubenstein L, Mittman B, Vickrey B (2006) Effect of a dementia care management intervention on primary care provider knowledge, attitudes, and perceptions of quality of care. *Journal of the American Geriatrics Society* 54, 311–317. [PubMed: 16460384]
- [47]. Vollmar HC, Grassel E, Lauterberg J, Neubauer S, Grossfeld-Schmitz M, Koneczny N, Schürer-Maly C-C, Koch M, Ehlert N, Holle R (2007) Multimodal training of general practitioners--evaluation and knowledge increase within the framework of the dementia management initiative in general medicine (IDA). *Zeitschrift für ärztliche Fortbildung und Qualitätssicherung* 101, 27–34. [PubMed: 17458362]
- [48]. Wang Y, Xiao LD, Ullah S, He G-P, De Bellis A (2017) Evaluation of a nurse-led dementia education and knowledge translation programme in primary care: a cluster randomized controlled trial. *Nurse education today* 49, 1–7. [PubMed: 27855297]
- [49]. Edwards R, Voss SE, Iliffe S (2015) The development and evaluation of an educational intervention for primary care promoting person-centred responses to dementia. *Dementia* 14, 468–482. [PubMed: 24339110]
- [50]. Lee L, Weston WW, Hillier LM (2013) Developing memory clinics in primary care: an evidence-based interprofessional program of continuing professional development. *Journal of Continuing Education in the Health Professions* 33, 24–32. [PubMed: 23512557]
- [51]. Galvin JE, Meuser TM, Morris JC (2012) Improving physician awareness of Alzheimer's disease and enhancing recruitment: the Clinician Partners Program. *Alzheimer disease and associated disorders* 26, 61. [PubMed: 21399484]
- [52]. Lathren CR, Sloane PD, Hoyle JD, Zimmerman S, Kaufer DI (2013) Improving dementia diagnosis and management in primary care: a cohort study of the impact of a training and support program on physician competency, practice patterns, and community linkages. *BMC geriatrics* 13, 1–7. [PubMed: 23280140]
- [53]. Bentley MW, Kerr R, Ginger M, Karagoz J (2019) Behavioural change in primary care professionals undertaking online education in dementia care in general practice. *Australian journal of primary health* 25, 244–249.
- [54]. Institute of Medicine (2001) *Crossing the Quality Chasm: A New Health System for the 21st Century*, National Academies Press (US), Washington (DC).
- [55]. Saha S, Beach MC (2020) Impact of physician race on patient decision-making and ratings of physicians: a randomized experiment using video vignettes. *Journal of general internal medicine*, 1–8.
- [56]. Saha S, Komaromy M, Koepsell TD, Bindman AB (1999) Patient-physician racial concordance and the perceived quality and use of health care. *Archives of internal medicine* 159, 997–1004. [PubMed: 10326942]

- [57]. Persky S, Kaphingst KA, Allen VC Jr., Senay I (2013) Effects of patient-provider race concordance and smoking status on lung cancer risk perception accuracy among African-Americans. *Ann Behav Med* 45, 308–317. [PubMed: 23389688]
- [58]. King WD, Wong MD, Shapiro MF, Landon BE, Cunningham WE (2004) Does racial concordance between HIV-positive patients and their physicians affect the time to receipt of protease inhibitors? *J Gen Intern Med* 19, 1146–1153. [PubMed: 15566445]
- [59]. Cooper LA, Roter DL, Johnson RL, Ford DE, Steinwachs DM, Powe NR (2003) Patient-centered communication, ratings of care, and concordance of patient and physician race. *Ann Intern Med* 139, 907–915. [PubMed: 14644893]
- [60]. Traylor AH, Schmittdiel JA, Uratsu CS, Mangione CM, Subramanian U (2010) Adherence to cardiovascular disease medications: does patient-provider race/ethnicity and language concordance matter? *J Gen Intern Med* 25, 1172–1177. [PubMed: 20571929]
- [61]. Cooper-Patrick L, Gallo JJ, Gonzales JJ, Vu HT, Powe NR, Nelson C, Ford DE (1999) Race, gender, and partnership in the patient-physician relationship. *Jama* 282, 583–589. [PubMed: 10450723]
- [62]. Association of American Medical Colleges (2017) in Diversity in the physician workforce: facts & figures 2014, <https://www.aamcdiversityfactsandfigures.org/section-iii-geographic-distribution-of-physician-workforce/index.html>.
- [63]. Cherry DL, Vickrey BG, Schwankovsky L, Heck E, Plauchm M, Yep R (2004) Interventions to improve quality of care: the Kaiser Permanente-alzheimer's Association Dementia Care Project. *Am J Manag Care* 10, 553–560. [PubMed: 15352531]

**Table 1.**

The Dementia Update Course agenda.

8:00 – 8:30 a.m.	Brief overview to Alzheimer’s Disease Center
8:30 – 8:50 a.m.	Shifting to a new model of dementia care
8:50 – 9:20 a.m.	Recognizing early clues, screening tools
9:20 – 9:30 a.m.	Stretch Break
9:30 – 10:20 a.m.	Dementia Work- Up: When, What, Why and Differential Diagnosis
10:20 – 10:30 a.m.	Stretch Break
10:30 – 11:00 a.m.	Latinos and Dementia
11:00 – 12:00 p.m.	Treating the Person with a Dementia: Disclosure, Early Intervention, and Medication
12:00 – 1:00 p.m.	Lunch Break
1:00 – 2:00 p.m.	Behavioral and Affective Challenges in Dementia
2:00 – 2:30 p.m.	Driving
2:30 – 2:40 p.m.	Stretch Break
2:40 – 3:40 p.m.	Latest Alzheimer’s Research and integration of research into your practice
3:40–4:10p.m.	Dementia Capable Workflow and Environmental Considerations
4:10 – 4:30 p.m.	Final Questions/Post Test



**Table 2.**

Sociodemographic characteristics of the samples.

	Primary care providers (PCPs)			Health navigators (HNs)			P Value completers vs non-completers
	Total (n=22)	Completers (n=19)	Non-completers (n=3)	Total (n=32)	Completers (n=25)	Non-completers (n=7)	
Month of ADRD training in 2021							
Age in years, mean (SD)	48.0 (13.5)	49.4 (13.5)	39.3 (11.6)	48.3 (15.2)	49.9 (16.0)	42.4 (10.7)	0.257
Women, % (n)	59.1% (13)	63.2% (12)	33.3% (1)	96.9% (31)	96.0% (24)	100% (7)	0.254
Ethnoracial group							<b>0.020</b>
Non-Latino White, % (n)	71.4% (15)	73.7% (14)	50.0% (1)	84.4% (27)	84.0% (21)	85.7% (6)	
Latino (of any race), % (n)	9.5% (2)	10.5 % (2)	0.0% (0)	3.1% (1)	4.0 % (1)	0.0% (0)	
Non-Latino Black, % (n)	4.8% (1)	0.0% (0)	50.0% (1)	6.3% (2)	8.0% (2)	0.0% (0)	
Non-Latino Asian, % (n)	9.5% (2)	10.5% (2)	0.0% (0)	3.1% (1)	0.0% (0)	14.3% (1)	
Non-Latino Mixed race, % (n)	4.8% (1)	5.3% (1)	0.0% (0)	3.1% (1)	4.0% (1)	0.0% (0)	
Practice in rural communities, % (n)	45.5% (10)	47.4% (9)	33.3% (1)	21.9% (7)	20.0% (5)	28.6% (2)	0.594

**Bold:** p<0.05

Acceptability and preliminary effectiveness outcomes of the ADRD training among primary care providers and health navigators.

**Table 3.**

	Primary care providers (PCFs; n=19)			Health navigators (HNs; n=25)		
	Pre-training	Post-training	p value	Pre-training	Post-training	p value
High or very high likelihood to recommend training, % (n)	-	84.2% (16)	-	-	91.7% (22)	-
High or very high satisfaction with the training, % (n)	-	84.2% (16)	-	-	91.7% (22)	-
Impact quality of life of families with ADRD (1-5), mean (SD)	3.5 (1.1)	3.7 (0.8)	0.262	3.5 (0.8)	3.9 (0.9)	<b>0.036</b>
Serve English-speaking Latino families with ADRD (1-5), mean (SD)	3.0 (1.2)	3.4 (0.9)	<b>0.016</b>	2.9 (0.7)	3.5 (0.9)	<b>&lt;0.001</b>
Serve Spanish-speaking Latino families with ADRD (1-5), mean (SD)	2.1 (0.9)	2.8 (1.1)	<b>0.002</b>	2.0 (0.9)	2.8 (0.9)	<b>&lt;0.001</b>
Serve Non-Latino Black families with ADRD (1-5), mean (SD)	3.3 (1.1)	3.6 (0.8)	0.055	3.1 (0.8)	3.6 (0.9)	<b>0.001</b>
Serve families with ADRD from other non-White backgrounds (1-5), mean (SD)	2.8 (1.0)	3.1 (1.0)	0.262	2.9 (0.7)	3.5 (0.8)	<b>&lt;0.001</b>
Explain the importance of early identification of cognitive decline (1-5), mean (SD)	2.8 (0.9)	3.7 (0.7)	<b>0.001</b>	2.9 (1.2)	3.9 (0.9)	<b>&lt;0.001</b>
Identify appropriate interventions based upon identification of cognitive decline (1-5), mean (SD)	2.4 (0.9)	3.3 (0.8)	<b>0.001</b>	2.6 (1.1)	3.7 (1.1)	<b>&lt;0.001</b>
Use the elements of the client empowerment model as applied to ADRD (1-5), mean (SD)	1.9 (0.8)	3.4 (0.9)	<b>&lt;0.001</b>	2.9 (1.3)	4.0 (1.0)	<b>&lt;0.001</b>
GPACS-D: Confidence in clinical ADRD knowledge (1-5), mean (SD)	3.1 (0.7)	4.0 (0.6)	<b>&lt;0.001</b>	-	-	-
GPACS-D: Attitudes towards ADRD care (1-5), mean (SD)	4.1 (0.5)	4.5 (0.4)	<b>0.007</b>	-	-	-
GPACS-D: Disengagement from ADRD care (1-5), mean (SD)	3.0 (0.8)	2.3 (0.7)	<b>0.001</b>	-	-	-
Implement cognitive screenings in regular workflow (1-5), mean (SD)	2.8 (1.2)	3.4 (1.0)	<b>0.012</b>	-	-	-
Select the appropriate tools for screening for early ADRD signs (1-5), mean (SD)	3.1 (0.7)	3.7 (0.8)	<b>0.023</b>	-	-	-
Differentially diagnose the most common ADRD signs (1-5), mean (SD)	2.2 (1.1)	3.2 (0.8)	<b>0.001</b>	-	-	-

**Bold:** p<0.05