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Evaluating the Effectiveness of a Formal Dementia Care Training Program: Abilities Care Experts™

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Evaluating the Effectiveness of a Formal Dementia Care Training Program:

Abilities Care Experts™

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A culminating Master's thesis submitted to the faculty of Dominican University of California in
partial fulfillment of the requirements for the degree of Master of Science in Occupational
Therapy

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This project was written under the direction and supervision of the candidates' thesis advisor and approved by the chair of the Master's program. This project has been presented to and accepted by the faculty of the Department of Occupational Therapy in partial fulfillment of the requirements for the degree of Master of Science in Occupational Therapy. The content and research methodologies presented in this work represent the work of the candidates alone.

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Table of Contents

Table of Contents.....	iv
List of Tables	vi
Abstract.....	vii
Acknowledgements.....	viii
Introduction.....	1
Literature Review.....	2
Dementia Symptoms and Progression.....	2
Dementia Care Overview	3
Current Care Approaches for Dementia.....	4
OT Expertise in Patient-Centered Dementia Care	7
Standard Dementia Training	8
Key Factors of Quality Care.....	9
Abilities Care Experts™ Training Program.....	10
Abilities Care Experts™ An Expansion of Abilities Care Approach	12
Summary and Conclusions.....	15
Statement of Purpose	16
Theoretical Frameworks	17
Ethical and Legal Considerations	18
Autonomy.....	19
Nonmaleficence.....	19
Veracity	19
IRB Regulations	20
Methods Overview.....	20
Study Design	20
Participants.....	20
Data Collection Procedure	21
Outcome Measures.....	21
Data Collection and Analysis.....	25
Results.....	25

Demographics.....	25
Key Factors of Care.....	29
Discussion.....	32
Limitations.....	33
Implications for OT Practice.....	34
Conclusion.....	35
References.....	36
Appendix A: ACL and Individualized Activity Prescriptions.....	41
Appendix B: ACE™ Training Overview.....	43
Appendix C: Consent to be a Research Participant.....	44
Appendix D: Research Participant’s Bill of Rights.....	46
Appendix E: Outcome Measures.....	47

List of Tables

Table 1. <i>ACE™ Trained Demographics</i>	27
Table 2. <i>Non-ACE™ Demographics</i>	29
Table 3. <i>Descriptive Statistics Results</i>	32

Abstract

Overview: Abilities Care Experts™ (ACE™) is an educational training program for nursing staff who care for individuals with dementia in skilled nursing facilities (SNF). The objective of the program is to provide the nursing staff with knowledge, and methods to engage residents' remaining abilities in order to maximize occupational participation using a stage-specific dementia care approach. ACE™ training has yet to be evaluated for effectiveness in a controlled study design.

Objectives: This study sought to evaluate the effectiveness of the ACE™ training.

Design: The study employed a quantitative, cross-sectional, quasi-experimental design.

Participants: A total of 29 CNAs, 13 ACE™ trained and 16 non-ACE™ trained, from two Ensign SNFs.

Measurements: Participants completed a survey battery measuring key factors associated with quality of care: 1) knowledge 2) attitudes 3) self-efficacy and 4) job satisfaction.

Results: Compared to non-ACE™ trained participants, ACE™ trained participants scored higher on each outcome measure. ACE™ participants demonstrated significantly higher levels of self-perception of dementia knowledge ($t(27) = 3.44, p = .002$), knowledge of dementia care approaches ($t(26) = 3.57, p = .001$), and self-efficacy ($t(25) = 2.40, p = .024$).

Conclusion: This study provides initial evidence that ACE™ can improve key factors associated with quality of care..

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Introduction

More commonly known as dementia, major neurocognitive disorder, is a chronic and progressive brain disorder characterized by multiple cognitive deficits, the most significant of which is persistent memory loss (American Psychiatric Association, 2013). The evolving memory and cognitive deficits that persons diagnosed with dementia experience often lead to behavioral changes that impact daily function and present challenges for family or caregivers.

Under the Diagnostic and Statistical Manual of Mental Disorders–V (DSM–V), there are multiple etiologies of dementia, the most common of which is Alzheimer’s disease (AD) (American Psychiatric Association, 2013). According to the American Psychiatric Association (2013), AD accounts for around 70% of all dementia cases in persons over 70 years old. Women tend to have a higher incidence of AD, but irrespective of gender, risk of AD generally increases with age. Other risk factors include: low educational level, history of head trauma with loss of consciousness, late maternal age, alcohol abuse, and Type II diabetes. In the United States, the prevalence of AD is expected to quadruple within the next 50 years, meaning that 1 in 45 Americans will meet the diagnostic criteria for Alzheimer’s by 2050 (American Psychiatric Association, 2013).

The burden of caring for a family member with dementia is significant due to the diffuse and diverse cognitive, behavioral, and affective changes associated with the condition. As dementia progresses, family caregivers often seek out residential care for their loved ones with dementia (Graneheim, Johansson, & Lindgren, 2014). An estimated 74% of US nursing home residents have a diagnosis of dementia and 13% have a primary diagnosis of dementia (Alzheimer’s Association, 2017; Daly, Bay, Levy, & Carnahan, 2015). In residential care facilities, the interdisciplinary healthcare team shares responsibility for patient care. Often,

certified nursing assistants (CNAs) assume most of day-to-day primary care (Burke & Orłowski, 2015). Given the large numbers of residents with dementia, and the challenges associated with their care, caregiver burden among CNAs working in skilled nursing facilities (SNF) is high. Due to their unique ability to synthesize caregiver-patient relationship and dementia stage, OTs are in a unique position to collaborate with CNAs in providing individualized care to reduce burden of care and promote key factors associated with quality of care.

The Abilities Care Experts™ (ACE™) training program instructs CNAs on how to utilize individualized dementia care approaches. ACE™ is an occupational therapy (OT)-informed approach that considers the individual's dementia stage, cognition level, occupational profile, and remaining abilities with the goal of maximizing patient engagement during daily activities. However, the effectiveness of the ACE™ program had not yet been evaluated using a rigorous research design. The goal of this study was to evaluate the effect of the ACE™ program on CNA knowledge of dementia and care approaches, attitudes towards dementia, care efficacy, and care satisfaction.

Literature Review

Dementia Symptoms and Progression

Memory loss is the first and most prominent symptom in most of dementia cases. As the disease progresses, individuals with dementia may experience behavioral disturbances and other cognitive impairments that impact his or her ability to engage in daily life functions. Poor insight or judgment may occur because of memory loss and limited awareness. Persons that are aware of his or her deficits may experience anxiety, depression, or defensiveness. Lastly, individuals may experience symptoms of psychosis, including challenges communicating and engaging in his or her surrounding environment (Bryden, 2002). Personality disturbances and cognitive deficits can

have a significant impact on the family or caregivers' experience in caregiving, and the quality of care provided.

Dementia Care Overview

According to Bakerjian (2014), dementia care in the United States is unsatisfactory due to the unnecessary use of antipsychotics to minimize disruptive behaviors associated with dementia. Because caregivers experience difficulties managing dementia-related behavioral issues, clinicians may resort to prescribing these medications. However, research has shown that antipsychotics are neither effective nor safe alternatives to managing behaviors associated with dementia. A national partnership of healthcare organizations and the Centers for Medicare and Medicaid Services (CMS) strives to improve quality of dementia care by decreasing antipsychotic medication use, and related side effects, as well as identifying and disseminating best practice approaches including effective training programs. In the first meeting of this partnership, stakeholders discussed relevant factors impacting the quality of dementia care; concluding that the number-one issue contributing to reliance on antipsychotic interventions is limited caregiver knowledge about dementia (Bakerjian). Antipsychotics have been used to facilitate care because patients with dementia are easier to manage when subdued, but this approach does not promote quality of life or positive outcomes. This partnership also declared its mission to promote the use of non-pharmacological and person-centered dementia care practices by tailoring approaches to the interests, background, cognitive abilities, and medical needs of each unique patient. Currently, interventions are focused on facilitating patient care, promoting quality of life, and helping caregivers understand patients to shift away from unneeded medication (Bakerjian, 2014).

Current Care Approaches for Dementia

Function focused care. Function-focused care (FFC) is a care approach rooted in person-centeredness that utilizes physical activity to promote function and decreased caregiver dependence. FFC relies on nursing aid caregivers to optimize resident engagement and improve client function by preventing sedentary behaviors and functional decline through physical activity (Galik, Resnick, Hammersla, & Brightwater 2013). Examples of FFC abilities-focused approaches include engaging a resident in grooming rather than simply completing self-care tasks for them or encouraging residents to assist in activity set-up. Traditional dementia care relies on pharmacological treatment and dependence on caregiver assistance. FFC is an abilities-focused approach that emphasizes the needs of the client and the caregiver(s). Rather than relying on pharmacological approaches for dementia care, approaches focusing on function can increase individual function while maintaining the individual's identity.

Person centered care. Person-centered care (PCC) acknowledges that individuals retain their identity despite the presentation of a disease or condition. Recent research demonstrates the need to implement and manage PCC in long term care facilities, especially for clients with dementia (Stein-Parbury et al., 2012; Cooney et al., 2002). The person-centered approach to dementia care requires significant time commitment and increased personal effort on the part of health care staff. Ongoing support and encouragement from the facility increases PCC implementation success and reinforces person-centered behavior towards clients with dementia (Stein-Parbury et al., 2012).

Abilities focused care. Wells, Dawson, Sidani, Craig and Pringle (2000) conducted a quasi-experimental, repeated-measures study to examine the effects of an ability-focused morning care program that educates caregivers in providing abilities focused interventions while

assisting nursing home residents in bathing, grooming, dressing, and toileting tasks. The study was conducted on four nursing-home level cognitive support units in a geriatric care center with a sample of 40 residents and 44 caregivers; 16 caregivers were in the experimental group and 28 caregivers were in the control group.

The abilities focused educational program was a five-session program that included education on the effects of dementia on social and self-care abilities, standardized assessment procedures examining retained or lost abilities, and interventions that can be used with residents that focus on engaging remaining abilities or compensating for lost abilities. For example, caregivers learned how to employ tactile cues to engage residents in dressing activities. Caregivers' perceptions of residents' level of function, their perceptions of caregiving, and their level of stress were recorded during pre-intervention, three months post-intervention, and six months post-intervention. Residents were also assessed by measures examining their level of interaction behaviors, level of agitation, and level of function. The abilities-focused morning program was shown to have a statistically significant impact on behavioral, social, and cognitive functions of persons with dementia residing in a nursing home.

Furthermore, nursing home staff and caregivers exhibited an increase in social/flexible behaviors and decreased stress/tension when interacting with dementia residents (Wells et al., 2000). This study supports the feasibility for implementing an abilities focused program in nursing homes that benefits both residents and caregivers.

Abilities Care Approach®. Abilities Care Approach® (ACA®) was created by Gina Tucker-Roghi, OTD to create the highest quality dementia care to residents living in Ensign™ SNFs. ACA® is based on Claudia Allen's Cognitive Disability Model (CDM) and incorporates the Person-Environment-Occupation model (PEO). CDM is focused on analyzing cognition and

the fluid information-processing abilities involved with learning. Claudia Allen's model uses a perspective that the brain is an information processing system (Mayer, 1988). Allen's Cognitive Disability Model identifies functional abilities at each stage of dementia. In ACA® occupational therapists apply the CDM and use activity analysis skills to adapt valued daily activities to their client's current level of abilities to develop individualized activity prescriptions. Occupational therapists then communicate these activity prescriptions to other members of the resident's care team (Warchol, 2004).

Another key principle of CDM also maintains the principle that at a certain level of cognitive disability, it is no longer possible for the client to learn. At this point, interventions must seek to modify the environment and occupations to support the client's engagement. The PEO model is focused on changing or adapting an activity, a person's abilities, and the environment the activity takes place to optimize occupational performance (Barker, 2007). ACA® is a program that incorporates a comprehensive understanding of the resident's remaining abilities and an understanding of the resident's life story and history to improve active engagement.

ACA® is an evidence based, non-pharmacological, and individualized approach to treating persons with dementia. The focus includes using client-centered care to incorporate retained abilities and client reminiscence to elicit and incorporate meaning into client's everyday tasks and routines. In the ACA® process, the OTs identify the patient's stage of dementia using standardized assessments and they also create an occupational profile with emphasis on the patient's retained abilities that support cognitive, communicative, and occupational performance. The OTs develop individualized activity prescriptions based on the meaningful activities

identified in the occupational profile. The adapted meaningful activities are drawn from the retained skills and abilities (see Appendix A for examples adapted activities).

ACA® emphasizes the importance of individualized care approaches that are specific to client level of cognition or dementia stage. Trained and licensed OTs determine the appropriate approach, specific to the client's level of cognition and collaborate with caregivers to establish effective strategies and adaptations to enhance participation in meaningful occupations. ACA® facilitates residents' engagement in meaningful activities and increases staff knowledge and attitudes towards clients with dementia. OTs collaborate with interdisciplinary healthcare teams to achieve skilled, quality dementia care.

OT Expertise in Patient-Centered Dementia Care

Current best practice in the OT profession promotes a comprehensive, person-centered approach to evaluating and treating patients. To guide interventions, OTs focus on the individual's unique client factors, performance patterns, and performance skills to capture a multi-dimensional view of the client. OT practice possesses a unique expertise and perspective on dementia care that incorporates the caregiver-client relationships, stages of dementia, and evidence-based intervention approaches. OTs continue to apply knowledge and expertise to assess cognitive abilities at each stage of dementia and how cognitive abilities may affect functional independence and engagement in activities.

Because dementia is a progressive disease, cognitive remediation for individuals with dementia is not possible. However, the individual may demonstrate improved function with compensatory or adaptation approaches (AOTA, 2008). Modification is one of the most frequently used OT interventions for individuals with dementia; promoting safety and engagement by modifying the task and environment to support the individual.

Smallfield and Heckenlaible (2017) completed a systematic review to support OT interventions used to improve adults with neurocognitive disorders engagement in daily routines. These interventions aim to establish, modify, and maintain engagement in occupations, despite an individual's neurocognitive disorder. The review examined the benefits of providing occupation-based interventions, physical exercise interventions, and error-reduction learning interventions. Occupation-based interventions focused on daily life activities as the intervention and outcome. For example, a self-feeding activity would be both the intervention and outcome for the participant. Physical exercises included endurance, aerobic, balance, and resistance training. Error-reduction learning interventions consisted of providing constant verbal instruction during task completion, along with modeling and demonstration to reduce errors. The results provided strong evidence supporting the use of occupation-based interventions, physical exercise interventions, and error-reduction interventions implemented into the daily routines of individuals with neurocognitive disorders to enhance engagement in occupations (Smallfield & Heckenlaible, 2017).

Standard Dementia Training

Nationally, 24 states were found to have dementia training laws for CNAs. In California, CNAs are required to complete eight hours of dementia-specific training, every two years. Dementia training curriculum requirements include five basic dementia care training standards: 1) techniques to address unique, dementia-related needs and behaviors, 2) strategies to communicate with residents who are cognitively impaired, 3) concepts to promote understanding of the behavior of residents with cognitive deficits, 4) methods to support appropriate responses to dementia-related behaviors, and 5) methods to decrease the impact of cognitive deficits (Burke & Orłowski, 2015).

Key Factors of Quality Care

Knowledge and attitudes. Limited caregiver and staff knowledge about dementia care contributes to poor patient and caregiver outcomes (Surr, Smith, Crossland, & Robins, 2016). Surr et al. (2016) found that 87.8% of participating health care professionals in their study received no previous dementia education or dementia-specific care training. Participants who had previous training only received less than a day of training. Extensive knowledge of dementia care is required to maximize care and quality of life for individuals with dementia. Limited knowledge of and insufficient training in approaches to dementia behaviors can lead to negative caregiver attitudes (Staples & Killian, 2012).

Negative staff attitudes, such as therapeutic nihilism, can result in poor dementia care outcomes. Staples and Killian (2012) define therapeutic nihilism as the negative stigma directed towards individuals with dementia. Therapeutic nihilism is a form of ageism based on the belief that older adults become demented as they age, and that progression of dementia cannot be impacted by health interventions due to patient's' cognitive status (Sanders & Swails, 2011). As a result, therapeutic nihilism can lead to poor quality health care services for individuals with dementia since current health care professionals are not provided with treatment strategies that may maintain function or slow progression of dementia. Believing in therapeutic nihilism can impact staff attitudes, type of care, and quality of care towards persons with dementia (Sanders & Swails, 2011). Evidence suggests that staff knowledge of dementia impacts attitudes towards care and as a result affects the quality of care. Thus, dementia specific education and person-centered approaches to dementia care are warranted (Lee, Hui, Kng, & Auyeung, 2013; Surr et al., 2016).

Job satisfaction and self-efficacy. Not all families have the resources or the knowledge to become the primary caregiver for their loved ones with dementia. As a result, persons with dementia may be placed in long term care facilities such as skilled nursing facilities (SNFs) or assisted living centers. The Alzheimer's Association (2017) states that as many as 74% of patients in SNFs have a diagnosis of dementia. Facility staff are at high risk for burnout and decreased job satisfaction due to the demands of dementia care, including increased assistance in client self-care routines (Brodaty & Donkin, 2009). Kokkonen, Cheston, Dallos & Smart (2013) found a clear correlation between self-efficacy and caregiver burnout. As a caregiver begins to feel emotionally exhausted and depersonalized, their self-efficacy decreases. Kokkonen et al. suggest that self-efficacy is an important factor that can prevent burnout.

Persons with dementia often display challenging and disruptive behaviors, agitation, and disinhibition that can complicate the caregiver-client relationship and result in caregiver stress. (Duffy, Oyebode, & Allen, 2009). Current research indicates that caring for persons with dementia is more stressful than caring for individuals with physical disabilities (Brodaty & Donkin, 2009). Literature indicates that dementia caregivers without education on the symptoms and approaches to dementia may experience stress, anxiety, and depression as a response to the complex demands of patient care.

Abilities Care Experts™ Training Program

The Abilities Care Experts™ (ACE™) is an Ensign trademarked training program developed by Sonya Sweeney, OTR/L. ACE™ is a six-week training program to prepare CNAs and other SNF staff members for implementation of ACA® principles while working with residents. ACE™ provides SNF staff members with dementia stage-specific care approaches to engage residents in activities of daily living (ADLs). ADLs are daily tasks that are perceived as

fundamental to living and taking care of oneself. ADLs include bathing, functional mobility, dressing, eating, and personal hygiene and grooming (American Occupational Therapy Association, 2014). The ACE™ program is taught by an ACA® trained OT, who provides a curriculum to convey the importance of adaptive, occupation-based care approaches. ACE™ emphasizes the value of occupational engagement through individualized care and meaningful interactions. The ACE™ program consists of six classes, each of which covers specific material. Class One provides a review of dementia, Classes Two and Three define the ACA® process, classes Four and Five discuss the different cues used at each Allen Cognitive Level (ACL), and class Six is the final exam (see Appendix B for an overview of the ACE™ training).

During the fourth and fifth class, the CNAs develop a better understanding of the different stages of dementia and gain the skills to provide individualized care for each resident. By doing so, this promotes remained abilities during each stage of dementia. Cueing strategies can range from auditory, tactile, and visual cues based on the resident's dementia stage and remaining abilities. Residents who are at ACL four must receive verbal cues for safety and require assistance to identify any safety hazards. Residents who are at ACL three must receive verbal, visual, and tactile cues to initiate a familiar task. Residents who are at ACL two must receive constant verbal, visual, and tactile cues to follow a one-step direction for the CNA. Residents who are at ACL one must receive constant verbal, visual, and tactile cues to illustrate a response to an external stimulus. At later stages of dementia and lower ACLs, the resident may best respond to all forms of cues to ensure that he/she can process the information (see Appendix A for description of ACLs)

In addition, CNA training includes role-playing in class to practice appropriate dementia care approaches. Return demonstration is also completed in this phase of the ACE™ process,

where OT demonstrates examples of dementia care approaches to a CNA and then asks the CNA to model the approach. Staff are also trained to grade activities using cueing strategies to further support resident participation. Grading down would include simplifying a task or providing additional cues to assist a resident in completing a task. Grading up could include adding additional tasks within an activity or eliminating activity modifications. CNAs receive ACETTM formal dementia training on the importance of using residents' retained abilities depending on their dementia stage, to optimize participation in meaningful daily life tasks.

Abilities Care ExpertsTM An Expansion of Abilities Care Approach

The ACETTM training program prepares CNA's for the implementation of the ACA[®] process and interventions developed by the occupational therapist. However, before CNAs can apply ACA[®] principles to their practice, OTs must complete the following three phases with residents: 1) evaluative phase, 2) intervention phase, 3) training and functional maintenance program phase. The information from these stages is then used to develop activity prescriptions that the CNAs are then trained to use.

Evaluation phase. The evaluative phase begins by gathering information on the residents' life history and abilities. The evaluation phase can be described as formulating the occupational profile to include residents' strengths, interests, and needs. The resident's physical, sensory, and psychosocial impairments, and his/her level of participation in activities and care are all evaluated. Family and patient interviews, observation, and formal assessments are used during evaluations. Assessments of caregiver interactions as well as the impact of the environment on occupational performance are completed. Next, an individual's level of cognition or stage of dementia is assessed using the Allen Cognitive Battery, including the Allen Cognitive Levels Screen Version 5 (LACLS-5) and the Allen Diagnostic Module (ADM). The

Allen cognitive level and mode provides direction for selecting appropriate interventions based on the determined level of cognition.

Allen Cognitive Level One consists of automatic actions or reflexes with minimal responses to stimuli, such as facial expressions and vocalizations. At Level Two postural movements occur against gravity. Individuals at this level inconsistently follow one-step commands for familiar actions in context, while being provided with constant multisensory cues. Level Three is characterized by manual actions since individuals are capable of manipulating and using objects, find enjoyment in familiar activities, and can communicate using phrases. Goal directed activities occur at level four and individuals can correctly sequence the steps of a familiar activity. Routines are important at this level as individuals can complete an activity that is familiar to him or her. The Allen Cognitive Battery provides clinicians with information about the individual's Allen Cognitive Level (ACL) and guidance in developing appropriate interventions. After the ACL is identified, environment and functional assessments are completed to conclude the two-week evaluative phase. The evaluations and assessments incorporate Claudia Allen's concepts of 'Can Do, Will Do, and May Do' for residents with dementia.

The 'Can Do' component concentrates on the individual's remaining physical and cognitive capabilities. Moreover, the 'will do' components focuses on the individual's desired activities based on his/her interests, culture, and values. Lastly, the 'may do' component highlights how family, caregiver(s), and environment can impact the individual's ability to participate in valued activities. Altogether the 'Can do, Will do, and May Do' concept ultimately guides the OT's evaluation process and intervention plan for the individual.

Intervention phase. The intervention phase of the Abilities Care Approach®, lasting around two weeks, and consists of individualized activity prescriptions and care approaches. Individualized activity prescriptions are meaningful tasks or actions presented to residents, considering each individual's retained abilities and cognitive level. The primary aim is to optimize functional participation in meaningful tasks. ACA® strategies include implementation of appropriate activity and environmental modifications or accommodations to improve functioning and engagement in self-care, mobility, social interaction, and communication. Some adaptations may include external cues, activity set-up, and modified communication approaches such as gestures. Based on the resident's sensory preferences of desired stimuli, sensory strategies are also integrated in resident's daily routines to improve behavioral and functional responses.

The use of ACA® for patient interventions includes methods such as staff integration of life story boards (LSBs) into care sessions to increase patient engagement in care (Subramanian, Woods, & Whitaker, 2014). LSBs help to serve as a self-reminder to maintain a sense of continuity for individuals with memory difficulties (Subramanian, Woods, & Whitaker, 2014). A randomized control trial integrated LSB to encourage residents with dementia to reminisce with staff about his or her meaningful lives. The study investigated quality of relationships that were rated by relatives. After LSBs were integrated, the quality of relationships between caregiver and resident significantly improved $p < .001$, as well as staff attitudes towards residents and knowledge about dementia (Subramanian, Woods, & Whitaker, 2014). LSBs utilize residents' retained memories to encourage caregiver-patient communication and provide emotional support. Throughout engagement with the residents, caregivers are instructed on the use of life

story boards as a means of establishing rapport and trust. ACE™ thoroughly educates CNAs and SNF staff on LSBs and how it can be effective in providing quality dementia care to residents.

Training and functional maintenance. The functional maintenance program is formalized during the last 2-week phase of the ACA® process. OTs provide care recommendations or strategies that can be duplicated by other care providers. Educating family, caregivers, healthcare staff, and CNAs/RNs is the key objective. Written suggestions are provided to the interdisciplinary team, instructing on ways to improve function and manage patient behavior using of cues, activity or task setup, and sensory stimulation.

The ACE™ training program is an educational program providing CNAs and SNF staff with instructions on how to implement ACA® interventions with residents. The education sessions are interactive and focus on the value of occupational engagement through individualized care approaches and meaningful interactions. ACE™ is intended to help CNAs understand the appropriate cues to use with residents to optimize their participation in daily care tasks. Understanding residents' dementia stage helps CNAs to use cues in a more effective and appropriate manner. The ACA® provides residents with Alzheimer's disease and related dementias the opportunity to achieve and maintain the highest level of function. Through ACE™ training, CNAs can further embody ACA principles to maximize resident function and quality of life.

Summary and Conclusions

Clinical trials have found significant improvements in patient quality of life, staff efficacy and satisfaction, and improved staff-patient interactions in facilities with training in? person-centered approaches (Stein-Parbury et al., 2012; Cooney et al., 2002). The newly developed ACE™ training program instructs CNAs to utilize individualized, OT-informed

approaches with their patients with dementia that considers the individual's dementia stage, cognition level, occupational profile, and remaining abilities. After conducting a comprehensive literature review, the research team identified key factors associated with quality care: knowledge, attitudes, self-efficacy, and job satisfaction. What remains to be investigated is whether participation in the ACE training program results in improvement in these factors associated with quality care.

Statement of Purpose

ACE™ is a unique skilled nursing facility-based training program in which OTs educate CNAs in how to implement patient-centered strategies that meet individual patient's needs and strengths. The goal of the training is for CNAs to understand residents' remaining abilities, and facilitate engagement in occupations through using appropriate cueing, such as tactile, visual, and auditory cues. The primary objective of this study is to evaluate the effectiveness of the ACE™ training and its ability to influence the following quality of care key factors: caregiver knowledge; attitudes towards individuals with dementia; caregiver self-efficacy and job satisfaction (Surr et al, 2016; Staples & Killian, 2012; Brodaty & Donkin, 2009; Kokkonen et al., 2013).

After conducting a comprehensive literature review, the research team identified key factors associated with quality care: knowledge, attitudes, self-efficacy, and job satisfaction. Current literature indicates that insufficient knowledge contributes to poor patient and caregiver outcomes (Surr et al., 2016). Based on these findings, it was determined that knowledge is an important factor that should be examined in a study evaluating the effectiveness of the ACE™ program.

Knowledge of dementia was operationalized into three domains: *general knowledge*, *knowledge of dementia care approaches*, and *self-perception of dementia knowledge*. *General knowledge* of dementia was operationalized as the understanding of the dementia diagnosis, presentation, and prognosis. *Knowledge of dementia care approaches* was operationalized as the knowledge of appropriate cues and approaches to use to encourage occupational engagement when working with an individual with dementia. *Self-perception of dementia knowledge* was defined as caregivers' confidence in their own dementia knowledge. *Attitude* was operationalized as caregivers' beliefs and feelings towards individuals with dementia. (Staples & Killian, 2012). *Job satisfaction* was operationalized as a sense of fulfillment, meaning, and value derived from working with residents with dementia.

The purpose of the research is to answer the following question: Is a dementia training program focused on ACA® principles more effective in supporting key factors associated with quality of care, compared to standard CNA dementia training? To answer this question a cross sectional, quasi-experimental, quantitative study was conducted at Ensign nursing facilities with CNA who have and have not completed ACE™ training.

Theoretical Frameworks

The research team selected two frameworks to guide their research: the Allen Cognitive Disability (ACD) Model and the Person Environment Occupation (PEO) theory.

The Allen Cognitive Disability model acknowledges that individuals with dementia may not possess the cognitive skill to learn new information. Furthermore, the individual's Allen Cognitive Level (ACL) identify his/her remaining capabilities. Following the ACD model, treatment for patients with dementia should not seek to educate or change characteristics of the patient, but instead are intended to adapt the task and environment to make patient participation

in valued occupations possible. The goal is to use a compensatory approach to promote meaningful engagement in life occupations, maximizing the patient's remaining abilities at each level of cognition. Within the ACA® process, the OT identifies the resident's ACL and develop activity prescriptions, which can facilitate resident's engagement in activities through task/environment modifications. Within the ACE™ process, staff members are taught how to implement the task/environment modifications that were identified by the OT to facilitate the resident's engagement in activities throughout the day.

The Person Environment Occupation theory focuses on the interaction between the person's capabilities, the environment, and the demands of the occupation. Successful engagement in meaningful occupations results from the "best fit" between the person, environment, and occupation (Barker, 2007). Occupational therapists have the ability to "best fit" by modifying any or all of the three components, including education to increase the fit between the person and their environment and occupation. However, individuals with dementia are unable to learn new information and modification to the "person" component cannot be implemented. In the SNF setting, CNAs are an important part of their residents' environments, creating the social context. CNAs are also very involved in the occupations that their residents engage in throughout the day. Caregiver training on environmental and activity modifications can bring the "environment" and "occupation" components to "best fit" the "person".

Ethical and Legal Considerations

The regulations provided by the American Occupational Therapy Association Code of Ethics the Institutional Review Board (IRB) were used during the development and implementation of this study (AOTA, 2015). The code of ethics used throughout this study include: autonomy, nonmaleficence, and veracity.

Autonomy

AOTA (2015) defines autonomy as the right of an individual to privacy, confidentiality, consent, and self-determination. Study participants were required to provide informed consent in writing prior to participation in the study. Data gathered in the study was kept confidential according to confidentiality guidelines. The guidelines used to maintain confidentiality included: participant names were consolidated on a separate paper that was then coded with corresponding identification numbers. The identification numbers were used when data was being gathered.

Nonmaleficence

Nonmaleficence is defined as refraining from actions that cause harm to others (AOTA, 2015). Study participants were protected from potential risk of harm by ensuring confidentiality of individual responses, and ensuring that the participant's employers only had access to aggregate results. Additionally, they were provided with written reassurance that their job will not be impacted based on their raw scores. To ensure protection, only the research team and advisor had access to completed measures and raw data. Data was stored in the office of Susan Morris, PhD, OTR/L in a locked cabinet and any computerized data was kept on a password-protected desktop computer. Furthermore, when inputting data to Excel identification numbers were used instead of the participants names.

Veracity

AOTA (2015) defines veracity as providing comprehensive, accurate, and objective information. Study participants were provided with a copy of the Bill of Rights and Informed Consent, which included comprehensive and accurate description of what being a participant in this study will entail along with their rights as a participant (see Appendices C and D for the consent and bill of rights given to participants). In addition, when inputting data, the research

team developed a key on how to score each completed measure to ensure accuracy and inter-rater reliability.

IRB Regulations

All data input and analysis were completed on university grounds, on a password-protected computer system. The IRB approved the research, recruitment, and implementation methods and were conducted in compliance with university standards. Research team obtained permission to use copyrighted measures via email correspondence with measure authors.

Methods Overview

Study Design

This study employed a quantitative, cross sectional, quasi-experimental design examining the effect ACE™ training has on the key factors associated with quality of care: 1) knowledge 2) attitudes 3) self-efficacy and 4) job satisfaction. CNA participants were recruited from two Ensign skilled nursing facilities and were divided into two groups. The experimental group (ACE™ trained) consisted of participants who had received ACE™ training and standard dementia training required by the state of California within the past year, while the control group (non-ACE™) consisted of participants who had received standard dementia training. Non-ACE™ has completed standard training consisting of about six to eight hours of dementia specific education, every two years (Burke & Orlowski, 2015). After providing informed consent, participants completed a survey battery measuring key factors associated with quality of care.

Participants

The researchers recruited a total of 29 (n=29) participants from Parkview Post-Acute and Broadway Villa Post-Acute, both Ensign facilities in Sonoma County, California. The

experimental group included 13 Ensign employees who have received ACE™ training, and the control group control group consisted of 16 Ensign employees who were not ACE™ trained. Inclusion criteria included: current certified nursing assistant status at an Ensign facility, fluency in English or Spanish, and a caseload including patients with a diagnosis of dementia. The study had no exclusion criteria.

A convenience sampling drove the recruitment process. Gina Tucker-Roghi OTD, OTR/L, the therapy resource for Ensign, established a day where the research team would visit the sites to recruit participants. In preparation for recruitment, the research team created an informational flyer to discuss key points of the study and to encourage CNAs to participate. Gina Tucker - Roghi also donated a \$100 Visa ® gift card to be raffled off to one of the participants. On April 21, 2017, the research team divided into two groups. One group recruited subjects from Parkview Post-Acute and the second group recruited from Broadway Villa Post-Acute. After demonstrating interest in participating in the study, the participants were given a consent form and a bill of rights. Those who consented to participate in the study were provided with a survey battery either in English or Spanish, depending on preference, addressing the key factors associated with quality care. The CNAs then worked to complete the survey questions and returned the completed battery to the research team.

Data Collection Procedure

Outcome Measures

To prevent language barriers, the research team translated the outcome measures from English into Spanish with assistance from a native Spanish speaker using forward translation. Participants had the choice between completing the survey battery in English or Spanish,

depending on personal preference. The outcome measures targeted the four key factors associated with quality of care (see Appendix E to view outcome measures).

Knowledge. An adapted version of The Dementia Knowledge Assessment Scale (DKAS), and Abilities Care Experts™ Training Final Exam Part I were used to measure general knowledge of dementia (Sweeney, 2016 and Annear et al., 2015).

DKAS has 27 questions true/false questions that assesses individual's knowledge and understanding of dementia. An example of a question is, True or False: Dementia is a normal part of the aging process.

Annear, McInerney, and Hartley (2015), conducted preliminary research to test the reliability and validity of the DKAS. Results found DKAS to be a valid and reliable measure of dementia knowledge across a range of domains, including caregivers. Internal consistency and test-retest reliability of DKAS were examined (Annear et al., 2015). Internal consistency was calculated using Cronbach alpha static and received a score of .089. This score indicates that DKAS has a high level of reliability without redundancy. To calculate test-retest reliability of DKAS, 76 health care professionals who did not receive dementia education completed the measure twice. Researchers conducted an independent t-test and found no significant change in scores from Time 1 (mean \pm standard deviation, 33.0 ± 10.3) to Time 2 (33.8 ± 9.8) ($t(46) = 0.80$, $P = .43$, two tailed) indicating test-retest reliability (Annear et al., 2015).

Construct and concurrent validity of DKAS were also examined. To examine construct validity, seven hundred sixty-five participants completed the DKAS before and after taking an online course on dementia. Researchers conducted an independent t-test and found statistically significant increase in scores from Time 1 (31.3 ± 9.4) to Time 2 (40.7 ± 9.3) ($t(764) = 28.79$, $P < .001$, two tailed). To determine concurrent validity, the researchers had 71 participants

complete the DKAS and the Alzheimer's Dementia Knowledge Scale (an accepted reliable and valid measure) to examine if the construct being measured is the same. A Pearson correlation found a high correlation (correlation coefficient = 0.56, $P < .001$) (Amnear et al., 2015). The research team adapted the DKAS, therefore affecting its validity and reliability. Adaptations made consisted of omitting questions, which made the measure shorter.

ACE™ Training Final Exam Part I was created by Ensign (2016), and is used to examine how familiar staff is with dementia related terms used by ACA®. An example of a question used in this measure is: Wandering, pacing, and rummaging are examples of: a) Abilities care approach, b) Non-purposeful behavior, c) Procedural memories, d) Active participation. ACE™ Training Final Exam Part I is a seven-multiple choice questionnaire, and has not been tested for validity or reliability.

Abilities Care Experts™ Training Final Exam Part II is a measure of dementia care approaches. It is a 17-item questionnaire consisting of multiple choice, matching, and true/false styled questions. A question used in this measure is, True or False: Residents with dementia need more time to process verbal requests. Abilities Care Experts™ Training Final Exam Part II has not been tested for validity or reliability (Ensign, 2016).

Perception of dementia knowledge was operationalized as an individual's confidence in their knowledge of dementia. The Self-Rating of Dementia Knowledge consists of one 5-point Likert scale question. The question used is, "How do you rate your current knowledge of dementia on a scale from 1 to 5?" This measure has not been tested for reliability or validity.

Attitudes. The Attitudes Toward Dementia Survey (ATDS) is a nine item 5-point Likert scale questionnaire. The ATDS assess nihilism, and was adapted from the Dementia Survey created by Staples & Killian (2012) to measure CNA perspective towards approaching and

caring for residents with dementia. An example is, “I am likely to have a difficult experience when caring for patients with dementia”. The Dementia Survey is used in the ACA® program to measure attitudes of occupational therapist and occupational therapist students toward people with dementia. In addition, the Dementia Survey has not been tested for reliability and validity. The ATDS was adapted to fit the requirements of the research study and has not been tested for validity or reliability. Adaptations to the measure consisted of omitting questions and adding questions that were relevant to the CNA dementia care experience.

Self-efficacy. Self-Efficacy Scale (SES) is an adapted version of Nursing Assistant’s Self-Efficacy for Restorative Care Activities (NASERCA), which is a 6-item 5-point Likert scale measure. The NASERCA measures CNA confidence in performing providing quality care for clients with dementia. For example, “I feel confident I can provide appropriate cueing and support when working with residents during ADLs” and the respondent rates the degree to which they agree with the statement. Resnick & Simpson (2003), conducted a study to examine the reliability and validity of NASERCA. Evidence was found to support test-retest reliability when used with nursing assistants, via repeated measures ($p=.18$). Some evidence for validity was found based on hypothesis testing. Since the research team used an adapted version the measure by rewriting the main statement and shortening the following statements.

Job satisfaction. Job satisfaction was operationalized as a sense of fulfillment, meaning, and value derived from working with residents with dementia. The Job Satisfaction Scale (JSS) is a six item, 5-point Likert scale used to measure job satisfaction and was created by the research team. An example of a question is, “I have the tools and resources I need to do my job”. Since this is a newly developed measure, it has not been tested for reliability or validity.

Data Collection and Analysis

All but two outcome measure packets were completed in the staff break room during employee breaks and were returned to the research team on April 21, 2017. Two CNAs, who were unable to complete their packets during their break, later mailed the packets to the study center. The research team reverse-scored the outcome measures collectively, assigning values to each response to facilitate analysis and ensure inter-rater reliability.

With the help of two research assistants, the team scored each packet, then entered the scores into an Excel spreadsheet. The researchers checked for errors twice before transferring the data to SPSS for statistical analysis. Using IBM SPSS-22 Statistics for Macintosh and an online generator, the research team utilized inferential statistics to explore implications for the wider population of CNAs working in dementia care.

The researchers conducted independent sample t-tests to detect differences between group means for ACE™ trained participants and non-ACE™ trained participants on key factors of quality of care. After statistical significance was found, the research team utilized an online generator to calculate the effect size or Cohen's d. The effect size was used to calculate the magnitude of the effect ACE™ training had on the key factors of quality care, when compared to standard training.

Results

Demographics

ACE trained. A total of 13 ACE™ trained CNAs from an Ensign skilled nursing facility participated in the study. The majority (n=11, 84.6%) spoke English and two (15.4%) spoke Spanish. Participant age ranged from 23 to 54 years of age, with an average age of 38.9 years. One (7.7%) participant was male and 12 (92.3%) were female. The largest portion of the

participants described themselves as Hispanic (n=8, 61.5%), three as Caucasian (23.1%), one (7.7%) as African American, and one (7.7%) as Asian or Pacific Islander. Participants reported an average of 9.14 years working as CNAs and 6.56 years working specifically in dementia care. With regard to highest level of education attained, three (23.1%) reported a primary school education, four (30.8%) reported a high school education, four reported a certificate or apprenticeship (30.8%), one (7.7%) reported a university education, and one (7.7%) reported a higher university education. See **Table 1** for a summary of ACE™ trained participants' characteristics data.

Table 1.*ACE™ Trained Demographics*

Characteristics	Participants n = 13	Percentage (%)
Language		
English	11	84.6%
Spanish	2	15.4%
Gender		
Male	1	7.7%
Female	12	92.3%
Ethnicity		
Hispanic	8	61.5%
Caucasian	3	23.1%
African American	1	7.7%
Asian or Pacific Islander	1	7.7%
Highest Education Level		
Primary school	3	23.1%
High school	4	30.8%
Certification or apprenticeship	4	30.8%
University	1	7.7%
Higher university	1	7.7%

Note. n = number of participants.

Non- ACE trained. Sixteen non-ACE™ trained CNAs from Ensign skilled nursing facilities participated in the study. The majority (n=10, 62.5%) spoke English and six (37.5%) spoke Spanish. Four (25.0%) participants were male and 12 (75.0%) were female. The largest

portion of the participants described themselves as Hispanic (n=12, 75.0%), two described themselves as Caucasian (12.5%), and two (12.5%) as Asian or Pacific Islander. With regard to highest level of education attained, five (31.3%) reported a primary school education, two (12.5%) reported a high school education, eight reported a certificate or apprenticeship (50.0%), and one (6.3%) reported a university education. non-ACE™ participants age ranged from 20 to 49 years, with an average age of 36.9 years. non-ACE™ participants also reported an average of 11.19 years working as CNAs and 9.00 years working specifically in dementia care. See **Table 2** for a summary of non-ACE™ participant characteristics data.

Table 2.*Non-ACE™ Demographics*

Characteristics	Participants n = 16	Percentage (%)
Language		
English	10	62.5%
Spanish	6	37.5%
Gender		
Male	4	25.0%
Female	12	75.0%
Ethnicity		
Hispanic	12	75.0%
Caucasian	2	12.5%
Asian or Pacific Islander	2	12.5%
Highest Education Level		
Primary school	5	31.3%
High school	2	12.5%
Certification or apprenticeship	8	50.0%
University	1	6.3%

Note. n = number of participants.

Key Factors of Care

There were statistically significant differences between the control and experimental groups for the following outcomes: self-knowledge rating, knowledge of dementia care approaches, and self-efficacy scale. Although there was not a statistically significant difference in JSS scores between the groups, scores showed a positive trend for ACE™ trained participants.

There was a significant difference found for ACE™ trained participants in perception of dementia knowledge ($M=4.46$, $SD=.660$) and non-ACE™ trained participants ($M=3.46$, $SD=.865$) conditions; $t(27)=3.44$, $p=.002$. These results suggested that ACE™ trained participants rated their own knowledge of dementia higher compared to non-ACE™ trained participants. Cohen's effect size value ($d = 1.31$) suggests a high practical significance. Based on the Cohen's d analysis, it can be assumed that 90% of individuals who receive ACE™ training would score above the mean of the control group on this construct.

Knowledge of dementia care approaches showed a significant difference for ACE™ trained participants ($M=26.27$, $SD=4.54$) and non-ACE™ trained participants ($M=18.76$, $SD=6.28$) conditions; $t(25)=3.58$, $p=.001$, which suggests that ACE™ trained participants also scored high on stage specific knowledge than non-ACE™ trained participants. Cohen's effect size value ($d = 1.37$) suggests a high practical significance. Cohen's d analysis, suggests that 92% of individuals who receive ACE™ training would score above the mean of the control group on when tested on knowledge of dementia care approaches.

ACE™ trained participants also reported a higher level of self-efficacy ($M=41.58$, $SD=4.54$) than non-ACE™ ($M=34.47$, $SD=9.40$) conditions; $t(25)=2.40$, $p=.024$. This suggests that ACE™ trained participants have more faith in their skills to provide care to patients with dementia than non- ACE™ trained CNAs. Cohen's effect size value ($d = .963$) indicates a high practical significance, which suggests that 84% of individuals who receive ACE™ training would score above the mean of the control group when comparing self-efficacy.

Job satisfaction did not show a statistical significance, but it showed a positive trend for ACE™ trained participants ($M=27.83$, $SD=2.79$) compared to the non-ACE™ ($M= 24.76$, $SD=5.75$) conditions; $t(26)=1.70$, $p=.101$. These results indicate that ACE™ trained

participants tend to be more content with their career choice than non-ACE™ trained participants. Surprisingly, there was not a significant difference in attitudes towards dementia care between the two groups. See **Table 3** for results.

Table 3.*Descriptive Statistics Results*

	ACE™ Trained		Non- ACE™ Trained		<i>t</i> -value	Sig (2- tailed)	Cohen's <i>d</i>
	Mean	Standard deviation	Mean	Standard deviation			
Perception of dementia knowledge*	4.46	.660	3.46	.865	3.44	.002	1.31
Knowledge of dementia care approaches*	26.27	4.54	18.76	6.28	3.58	.001	1.37
Self-efficacy *	41.58	4.54	34.47	9.40	2.40	.024	.963
Job satisfaction	27.83	2.79	24.76	5.75	1.70	.101	.679
General knowledge (DKAS)	23.35	2.43	21.96	4.11	.91	.297	.412
General knowledge (ACE™ Final Part 1)	7.59	2.68	6.53	2.14	1.17	.253	.437
Attitudes	31.42	5.17	30.15	3.95	.75	.460	.276

Note: * $p < .05$

Discussion

Overall, ACE™ trained participants scored higher on each measure compared to non-ACE™ participants. ACE™ trained participants scored significantly higher on self-efficacy, perception of dementia knowledge, and knowledge of dementia care approaches. Statistical significance in perception of dementia knowledge indicates that ACE™ trained participants have a higher perceived knowledge of dementia care when compared to the non-ACE™ participants.

Furthermore, ACE™ trained participants scored significantly higher on knowledge of dementia care approaches. The higher scores from ACE™ trained participants also demonstrate the ACE™ program's strength in the education and training of individualized, stage-specific approaches to treating clients with dementia.

Self-efficacy yielded statistical significance, demonstrating that overall ACE™ trained participants expressed a strong level of confidence in applying person-centered care for clients with dementia. Results from the self-rating of dementia knowledge and ACE Training Final Exam Part II indicate that the ACE™ Training Program is effective in instructing application of stage-specific dementia care strategies and approaches, resulting in increased confidence in knowledge. These results suggest, that having knowledge on specific dementia care approaches facilitates improved quality of dementia care and enhances self-efficacy. Higher scores indicate that ACE™ trained participants demonstrate increased confidence in applying ACA strategies.

Results from the study indicate that the ACE™ training program is effective in CNA education and training of individualized, stage-specific approaches to treating clients with dementia. These results support the efficacy of the ACE™ training program in its ability to provide increased knowledge of applied dementia care strategies and approaches. According to the results, applied knowledge is critical to dementia care training programs because it equips participants with a toolbox of strategies that complement the complex and challenging course of dementia. Specifically, self-efficacy results demonstrate that ACE™ CNA participants are more confident when treating clients with dementia.

Limitations

The limitations of the study were the small sample size, the use of newly adapted measures as outcomes for the study, and the limited amount of time to gather data. First, the

small sample of 29 participants from two of the Ensign facilities limits the ability to generalize results to the greater CNA population. Therefore, the next step will be to conduct a study with a larger sample size, from a larger number of sites, to further examine the impact of ACE trainings. Second, a majority of the measures were adapted from original instruments or were generated by the research team. Therefore, a majority of the measures were adapted from original instruments or were generated by the research team. Therefore, further psychometric testing of the instruments is indicated to establish reliability and validity.

Finally, the study recruitment and data gathering took place over the course of only one day. Allowing multiple opportunities for CNA recruitment and completion of the measures would have yielded further results and findings. A future study is recommended to employ a larger sample size, randomized study design, and psychometrically supported measures to further examine and establish the trends found in this research. Additionally, future research is recommended to investigate whether or not the study's findings translate into improved quality of care.

Implications for OT Practice

OTs aim to empower individuals to complete meaningful activities in daily life despite physical or emotional ailments or limitations. This study provides initial supportive evidence for the efficacy of implementing formal dementia training programs in SNFs occupying patients with dementia. The findings support the value of using ACE™ -directed, stage-specific approaches to optimize resident participation in daily tasks. OT expertise in providing interdisciplinary, stage-specific dementia care training can improve caregiver educational outcomes. Further empirical research may help to further understand the optimal use of stage-specific dementia training programs to improve quality of care. The high correlation between

self-efficacy and knowledge of approaches result in the encouragement client engagement. The major takeaway implication is that collaboration between OTs and SNF staff can potentially improve quality of care for patients with dementia and decrease caregiver burnout.

Conclusion

Compared to non-ACE™ participants, ACE™ participants demonstrated significantly higher levels of: self-rated dementia knowledge [$t(27) = 3.44, p = .002$], knowledge of dementia care approaches [$t(25) = 3.58, p = .001$], and self-efficacy [$t(25) = 2.40, p = .024$]. Results indicated a positive trend suggesting that ACE™ participants also have increased job satisfaction and fulfillment compared to non-ACE™ participants. Therefore, this study provides initial evidence that ACE™ training can improve key caregiving factors associated with quality of care. A training approach focused on applying individualized and stage-specific care strategies is likely to improve quality of care by facilitating resident engagement and meaningful client-caregiver interaction.

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Appendix A: ACL and Individualized Activity Prescriptions

Occupational Therapy	Individualized Activity Prescriptions
<p>Early Stage (Allen Level 4)</p> <ul style="list-style-type: none"> • Approximate Developmental Age Comparison: 4-12 years • Impaired problem solving –unaware of problem or unable to generate solution • Difficulty learning new or complex information • Impaired reading comprehension for new or complex information. • Follows simple 1-2 step verbal commands • May be non-compliant or resistant when performance demands exceed patient's abilities • Need structure and routine for safety. • Benefits from striking visual cues to prompt memory for new learning • Expect increased processing time for following multi-step or complex commands 	<p>Understands the goal and purpose of familiar activities and games</p> <p>Choose occupations that are meaningful to the patient (consider interests, values, and roles)</p> <p>For crafts, provide a visible sample</p> <p>For new activities, provide demonstrations; don't rely on written instructions</p> <p>Use familiar supplies and materials; supervise for safety</p> <p>Attends to activities 20 min - 1 hr with occasional verbal cues. Allow increased time to complete activities.</p> <p>Focuses on group leader from various positions in the room</p>
<p>Middle Stage (Allen Level 3)</p> <ul style="list-style-type: none"> • Approximate Developmental Age Comparison 18 months to 3 years • Unable to recognize errors or problem solve • Uses hands for function, but may have impaired coordination • Completes simple and familiar actions with step by step directions and sequencing cues – unaware of goal of activity or task • Minimal new learning, even with repetition; attends 5-20 minutes with cues • Often frightened and disoriented – gain and maintain trust, with therapeutic use of self (eye-contact, body language, voice) • Poor awareness of limitations and environmental hazards • May be fearful or resistant to care due to lack of understanding - benefits from context cues for orientation • Attends to objects and people within 12 to 18 inches in front (tunnel vision) • May experience excess disability 	<p>May not understand purpose of activity, but will enjoy familiar aspects of the activity</p> <p>Place materials within 12-18 inches Introduce activities that are familiar and meaningful</p> <p>Able to attend to activity for 5 – 20 minutes with cues to sequence.; Allow extra time</p> <p>Unable to problem solve, and unlikely to recognize errors</p> <p>May enjoy repetitive motor element of an activity, without awareness of the overall goal of the activity</p> <p>Teach caregivers that active engagement is the goal, rather than a finished end product</p> <p>Simplify tasks – attends to 1 to 2 aspects of an object or task</p>
<p>Late Stage (Allen Level 2)</p> <ul style="list-style-type: none"> • Approximate Developmental Age Comparison (12 to 18 months) • Verbalizes with a few words, yes /no questions or binary choice • Requires multi-sensory constant cues to attend or follow one step direction (inconsistently) - eliminate distractions • Some procedural memories remain • Postural instability – implement methods to maintain stability in sitting and standing- fear during movement and difficult to transfer • Processing delay is 10 to 20 seconds • Attends to objects within 6 to 12 inches • Able to engage in gross motor activities ; does not use objects or use hands for function (except finger feeding) • May passively hold an object placed in hand – gross grasp • Motor function slowed, shuffling gait, stooped posture, and 	<p>Use personalized engaging sensory stimulation to elicit gross motor movement, verbalization, or trunk activation</p> <p>ACL 2.0 – 2.4+ Music with headphones; gross motor activities (catching ball - won't throw back); tracking sensory stimuli for trunk and head control activities; rocking in rocking chair</p> <p>ACL 2.6 – 2.8 Rocking; Pushing activities (mop, broom, cart); hitting or kicking a target; naming objects or people; or functional activities for both hands</p> <p>Use "sensory bridging" techniques to decrease fear and resistance in functional tasks – use senses related to the task (e.g. smell of aftershave when shaving)</p>

<p>stiffness</p> <ul style="list-style-type: none"> At risk for declines in functional mobility, strength / ROM, fall risk 	
<p>End Stage (Allen Level 1)</p> <ul style="list-style-type: none"> Approximate Developmental Age Comparison (0 to 12 months) Communicates with expressions and vocalizations – no verbalizations May communicate through negative behaviors Minimal movement of limbs and head in response to meaningful sensory stimuli, but not in response to verbal direction Does not use objects or use hands for function At risk for declines in functional mobility, strength, decreased ROM; fall risk, wt. loss, aspiration, and skin breakdown Bed bound – Hoyer lift or twoperson transfer Dependent for ADLs 	<p>Use sensory stimulation to elicit partial ROM in limbs and trunk, vocalization, head turning, or facial expressions</p> <p>Provide stimuli in immediate visual field 6-12 inches in front</p> <p>ACL 1.8 and Below Sensory stimuli with meaningful and pleasant smells (coffee, cinnamon, vanilla, floral scents)</p> <p>Familiar sounds or individualized music with headphones</p> <p>Meaningful and familiar pictures Personalized mobile seen from bed</p>

Appendix B: ACE™ Training Overview



Abilities Care Approach™ ACE Training Guide

Table of Contents

Class #1: Dementia review

- Mission Statement
- Definition of Dementia
- Symptoms of Dementia

Class #2: Abilities Care Approach and Process Part 1

- Reference Sheet of ACL Levels with Color-Coding
- Definitions

Class #3: Abilities Care Approach and Process Part 2

- Reason for Referrals
- Abilities Care Screening Tool
- Procedure for Referrals
- Therapy Process
- Life History Profile Questionnaire
- Tailored Activities
- Individualized Activity Prescription/FMP
- Rhythmic Abilities Referral

Class #4: Caregiver Approach, Behavior, Types of Cueing, ACL 1 and 2

- Behavior
- Abilities Care Approach: Types of Cues & Assistance
- Abilities Based Individualized Care Profile: Red Level 1
- Abilities Based Individualized Care Profile: Orange Level 2

Class #5: Allen Level 3 and 4

- Abilities Based Individualized Care Profile: Yellow Level 3
- Abilities Based Individualized Care Profile: Blue Level 4
- ACL Quick Reference Guide

Class #6: Final Exam

- Ace Definition Test
- ACE Training Final Exam

Appendix C: Consent to be a Research Participant



CONSENT TO BE A RESEARCH PARTICIPANT

1. I understand that I am being asked to participate as a Participant in a research study designed to assess knowledge of dementia care, attitudes toward individuals with dementia, and perception of patient/ caregiver relationship, and staff satisfaction. This research is part of Michelle D'Amato, Carmen Joaquin, Sophie Miller, April Perez, and Alex Villarina's Master's Capstone research project at Dominican University of California. This research project is being supervised by Susan Morris, Phd, OTR/L Assistant Professor of Occupational Therapy, Dominican University of California.
2. I understand that participation in this research will involve completing a questionnaire that may take up to 20 minutes to complete, which will include multiple choice, short answer, and true/false questions in regard to knowledge of dementia care, attitudes toward individuals with dementia, and perception of patient/ caregiver relationship, and staff satisfaction.
3. I understand that my participation in this study is completely voluntary and I am free to withdraw my participation at any time.
4. I am aware that all study participants will be provided with a written summary of the relevant findings and conclusions of this project at a subsequent staff meeting.
5. I understand that I will be discussing topics of a personal nature and that I may refuse to answer any question that causes me distress or seems an invasion of my privacy. I may elect to stop the interview at any time.
6. I understand that my participation involves no physical risk, but may involve some psychological discomfort, given the nature of the topic being addressed.
7. I understand that by participating in this study, I am contributing to the development of quality dementia care in skilled nursing facilities.
8. I understand that the measures are not evaluating the quality of my performance, but will instead be used to inform future training sessions. The questions are designed to be difficult and I need only answer to the best of my ability. Performance on these measures is not a reflection of my ability as a caregiver.
9. I understand that disclosed information will be kept confidential. All questionnaires will be identified using an identification number, and only the research team will have access to the identification number key. My participation and responses are not meant to advance or hinder my employment or my performance as a caregiver. Only overall results and conclusions from the study will be shared with Ensign personnel.
10. All procedures related to this research project have been satisfactorily explained to me prior to my voluntary election to participate.
11. I understand that if I have any further questions about the study, I may contact Ms. D'Amato at michelle.damato@students.dominican.edu or her research advisor, Susan Morris Phd, OTR/L at susan.morris@dominican.edu. If I have further questions or comments about participation in this study, I may contact the Dominican University of

California Institutional Review Board for the Protection of Human Participants (IRBPHP), which is concerned with the protection of volunteers in research projects. I may reach the IRBPHP Office by calling (415) 482-3547 and leaving a voicemail message, by FAX at (415) 257-0165 or by writing to the IRBPHP, Office of the Associate Vice President for Academic Affairs, Dominican University of California, 50 Acacia Avenue, San Rafael, CA 94901.

I HAVE READ AND UNDERSTAND ALL OF THE ABOVE EXPLANATION REGARDING THIS STUDY. I VOLUNTARILY GIVE MY CONSENT TO PARTICIPATE. A COPY OF THIS FORM HAS BEEN GIVEN TO ME FOR MY FUTURE REFERENCE.

Signature

Date

Appendix D: Research Participant's Bill of Rights



RESEARCH PARTICIPANT'S BILL OF RIGHTS

Every person who is asked to be in a research study has the following rights:

1. To be told what the study is trying to find out;
2. To be told what will happen in the study and whether any of the procedures, drugs or devices are different from what would be used in standard practice;
3. To be told about important risks, side effects or discomforts of the things that will happen to her/him;
4. To be told if s/he can expect any benefit from participating and, if so, what the benefits might be;
5. To be told what other choices s/he has and how they may be better or worse than being in the study;
6. To be allowed to ask any questions concerning the study both before agreeing to be involved and during the course of the study;
7. To be told what sort of medical treatment is available if any complications arise;
8. To refuse to participate at all before or after the study is stated without any adverse effects. If such a decision is made, it will not affect his/her rights to receive the care or privileges expected if s/he were not in the study.
9. To receive a copy of the signed and dated consent form;
10. To be free of pressure when considering whether s/he wishes to agree to be in the study.

If you have other questions regarding the research study, you can contact the researchers Michelle D'Amato, Sophie Miller, Carmen Joaquin, Louiza Alexandria Villarina, and April Perez or their advisor Dr. Susan Morris, at (415) 482-2486. You may also contact The Dominican University of California Institutional Review Board for the Protection of Human Subjects by telephoning the Office of Academic Affairs at (415) 257-0168 or by writing to the Associate Vice President for Academic Affairs, Dominican University of California, 50 Acacia Avenue, San Rafael, CA. 94901.

Appendix E: Outcome Measures

Dear Participant,

We value your contribution to this study.

These questions are designed to understand what health care professionals know about dementia and their experience and attitudes towards dementia care. The questions will specifically focus on knowledge of dementia care, attitudes towards dementia, self-efficacy as a dementia caregiver, and job satisfaction.

The study has 5 sections:

- Section 1: Demographic Information**
- Section 2: Attitudes Towards Dementia Survey**
- Section 3: Dementia Knowledge Assessment Scale**
- Section 4: Abilities Care Experts Tests - Part 1 and 2**
- Section 5: Job Satisfaction Scale**
- Section 6: Self Efficacy Scale**

Your answers to this study will remain confidential and be stored securely at Dominican University of California. An identification number will be used in place of your name when analyzing, presenting, or publishing information collected using this survey. Answers provided will not be traceable to individual respondents.

This study will take about 20 minutes to complete.

Please complete all surveys to the best of your knowledge and abilities. Please DO NOT refer to any printed, online, or other information about dementia while you are completing the survey. It is important that your current understanding of dementia informs the answers you provide.

Thank you for taking part.

Sincerely,

**Michelle D'Amato, OTS
Sophie Miller, OTS
Carmen Joaquin, OTS
April Perez, OTS
Louiza Alexandria Villarina, OTS
Susan Morris, PhD, OTR/L**

Section 1: Demographic Information

Directions:

In this section we would like some general information about you. Write or mark your response in the space provided.

1. Date of Birth (MM/DD/YYYY): ____ / ____ / ____
2. Gender: ☐ Male ☐ Female ☐ Other
3. Ethnicity (cultural heritage):
 - ☐ White/Caucasian ☐ Hispanic or Latino ☐ Black or African American
 - ☐ Native American or American Indian ☐ Asian or Pacific Islander
 - ☐ Other: _____
(write here)
4. How many years have you been a CNA? _____ (years)
5. How long have you worked with patients with dementia? _____ (years)
6. What is your highest level of completed education?
 - ☐ Primary / elementary school (including middle school)
 - ☐ High school graduate (high school leaver certificate)
 - ☐ Certificate or apprenticeship
 - ☐ University / college degree (Bachelor's degree)
 - ☐ Higher University degree (Masters or PhD)
7. Have you ever completed a formal dementia education course or workshop?
 - ☐ Yes ☐ No
8. If so, how long was the course AND in what year did you complete the course?

_____ (length/duration)

_____ (year completed)
9. How do you rate your current knowledge of dementia on a scale from 1 (no knowledge of dementia) to 5 (a high level of knowledge about dementia)? _____

Section 2: Attitudes Towards Dementia Survey

Directions:

Use the following scale below to complete the following questions. Please write your response in the space provided.

Response Scale

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
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Q#	Statement related to attitudes towards dementia	Response
1	I am likely to have a difficult experience when caring for patients with dementia.	
2	Since patients with dementia are usually dependent, I should complete their self-care activities for them.	
3	It is hard for patients with dementia to learn, and they usually can't participate in activities.	
4	Compared to other patients, I prefer to care for patients with dementia.	
5	I have sufficient training and background to care for patients with dementia.	
6	The facility is supportive of my efforts work with patient with dementia	
7	It doesn't really matter how I approach the patient if they are in a bad mood.	
8	Overall, caring for patients with dementia has led to stress and burn-out for me.	
9	My goal in caring for individuals with dementia is to keep patients quiet and at rest.	

Section 3: Dementia Knowledge Assessment Scale

Directions:

Below are statements about dementia. Please answer the following questions to the best of your abilities using the response scale below. Mark (✓) the appropriate box to indicate how true or false you believe each statement to be. Please DO NOT refer to any printed, online, or other information about dementia while you are undertaking the scale.

Q#	Statements about dementia	Response Scale		
		True	False	I don't know
1	Dementia is a normal part of the aging process.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Alzheimer's disease is the most common form of dementia.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	People can recover from the most common forms of dementia.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Most forms of dementia reduce the length of a person's life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Planning for end of life care is generally NOT necessary following a diagnosis of dementia.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	It is impossible to communicate with a person who has advanced dementia.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	A person experiencing advanced dementia will NOT generally respond to changes in their environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	It is important to correct a person with dementia when they are confused.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	People experiencing advanced dementia often communicate through body language.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Uncharacteristic or disruptive behaviors in a person experiencing dementia are generally a response to unmet needs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	People experiencing dementia often have difficulty learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	new skills.	<input type="text"/>
12	Daily care for a person with advanced dementia is effective when it focuses on providing comfort.	<input type="text"/>
13	Difficulty eating and drinking generally occurs in the later stages of dementia.	<input type="text"/>
14	People with advanced dementia may have difficulty speaking.	<input type="text"/>
15	Movement is generally affected in the later stages of dementia.	<input type="text"/>

Adapted from Annear, M. J., Toye, C. M., Eccleston, C. E., McInerney, F. J., Elliott, K. J., Tranter, B. K., & Robinson, A. L. (2015). Dementia knowledge assessment scale: Development and preliminary psychometric Properties. *Journal Of The American Geriatrics Society*, 63(11), 2375-2381. doi:10.1111/jgs.13707

Section 4: Abilities Care Approach Tests - Part 1

Directions:
Circle the best answer for each question below.

1. The abilities which are required to complete a task (fine motor skills, vision, muscle strength, balance, coordination, cognition) is/are:
 - a. Procedural memories
 - b. Task demands
 - c. Physical
 - d. Active participation
2. This is part of the long-term memory that is responsible for knowing how to do things, also known as motor skills such as walking, talking, and dressing.
 - a. a. Procedural memories
 - b. Cognitive
 - c. Multi-sensory cueing and external cues
 - d. Psychosocial
3. Noisy behaviors, negative vocalizations, facial expressions (sad, angry, stressed), tense body language, grinding teeth, fidgeting, restlessness, repetitive questioning, wandering, outbursts, and noisy breathing are an example of:
 - a. Active participation
 - b. Passive participation
 - c. Sensory stimulation
 - d. Negative responses or behaviors
4. _____ focus(es) on the individual rather than on the condition, and on the person's strengths and abilities rather than losses, while considering the whole person rather than a series of tasks to be completed.
 - a. Resident-centered care
 - b. Task demands
 - c. Cognitive approach
 - d. Multi-sensory cueing and external cues
5. Verbal cues, tactile cues, visual cues, and gestural cues are an example of:
 - a. Psychosocial
 - b. Abilities care approach
 - c. Multi-sensory cueing and external cues
 - d. Resident-centered care
6. Wandering, pacing, and rummaging are examples of:
 - a. Abilities care approach
 - b. Non-purposeful behavior
 - c. Procedural memories
 - d. Active participation

7. Auditory (iPod/music), visual (magazines or sensory screens), tactile (massage with lotion), and olfactory (smelling flowers, coffee, fragrances/spices) stimulation are examples of:

- a. Active participation
- b. Cognition
- c. Sensory stimulation
- d. Abilities care approach

Abilities Care Experts Training Final Exam - Part 2

Directions:

Please fill in the blank for each question below.

The following questions are related to ways in which the stages of dementia impact a resident's ability to participate in activities, as measured by the Allen Cognitive Levels (ACLs). These levels can be briefly defined as:

1. **ACL level 1:** End stage dementia, global cognition is profoundly impaired. Person responds to internal cues only.
2. **ACL level 2:** Late stage dementia, global cognition is severely impaired. Maximum assistance is needed to elicit postural reactions.
3. **ACL level 3:** Middle stage dementia, global cognition is severely impaired. Moderate assistance is needed to re-focus attention to sustain/complete simple repetitive actions.
4. **ACL level 4:** Early stage dementia. Global cognition is moderately impaired. Minimum assistance is needed to set up goal directed activities with tangible results.

Cueing strategies:

1. Resident requires constant verbal, visual, and tactile cues to follow a 1-step direction
 - a. ACL 1
 - b. ACL 2
 - c. ACL 3
 - d. ACL 4
2. Verbal, visual, and tactile cues for what to do next or how to get started with a task.
 - a. ACL 1
 - b. ACL 2
 - c. ACL 3
 - d. ACL 4

Characteristics and problems:

3. Fear of gravity and movement (transfers, repositioning in wheelchair, bed mobility/side to side):
 - a. ACL 1
 - b. ACL 2
 - c. ACL 3
 - d. ACL 4
4. Bed bound, cannot tell you what they want, total dependence for care:
 - a. ACL 1
 - b. ACL 2
 - c. ACL 3
 - d. ACL 4
5. Asks questions over and over and can use their hands for familiar tasks:
 - a. ACL 1

- b. ACL 2
- c. ACL 3
- d. ACL 4

6. Typically modified independent to supervision for self-care ADLs, needs cues for safety, may not keep walker in front of them:

- a. ACL 1
- b. ACL 2
- c. ACL 3
- d. ACL 4

7. Able to perform repetitive actions in response to tactile cues:

- a. ACL 1
- b. ACL 2
- c. ACL 3
- d. ACL 4

8. Some assistance is required to solve any problems that occur as a result of minor changes in routine:

- a. ACL 1
- b. ACL 2
- c. ACL 3
- d. ACL 4

Questions #9 - 12

Using the following descriptions (a-d), write the letter of the correct description for each ACL level.

Abilities remaining that the resident in this level may have:

- a. Bed bound, cannot use hands, can have a response to sensory stimulation (music/iPod, tactile massage, etc).
- b. Cannot use their hands but can grasp objects (may not let go), promote finger foods (sandwiches), can hit a balloon or kick a ball.
- c. Can use their hands for familiar tasks and/or that have been simplified to make easier. May need help/cues during tasks for the next step or to continue.
- d. With help to set-up, can complete familiar tasks.

9. ACL 1 is _____.

10. ACL 2 is _____.

11. ACL 3 is _____.

12. ACL 4 is _____.

For Questions #13-17, write true or false to indicate how correct you believe each statement to be.

13. _____ True or False: When speaking to a resident with dementia, it is best to phrase the request in a question. (For example, Mrs. R, would you like to get

dressed? Or Mrs. R, would you like to go to bingo? Or Mrs. R, would you like to eat in the social dining room?).

14. _____ True or False: It is important to gain eye contact when speaking to the resident.

15. _____ True or False: A tactile cue is when you touch the resident to help with participation with the task. (For example: You touch the back of Mrs. R's arm to have her reach toward the grab bar.).

16. _____ True or False: A visual cue is when you talk or speak to the resident.

17. _____ True or False: Residents with dementia need more time to process verbal requests.

Section 5: Job Satisfaction Scale

Directions:

Use the following scale below to complete the following questions. Please write your response in the space provided.

Response Scale

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
------------------------	---------------	--------------	------------	---------------------

Q#	Statement related to job satisfaction	Response
1	My job gives me the opportunity to learn.	
2	I have the tools and resources I need to do my job.	
3	My work with the residents of Ensign is very meaningful.	
4	I feel that Ensign provides training and resources that are aligned with their mission.	
5	I feel I make a positive difference in communicating and working with the residents at Ensign.	
6	The support and training I receive at Ensign helps me to feel valued by my employer.	

Section 6: Self Efficacy Scale

Directions:

Use the following scale to answer the bolded statement for each item listed below. Please write your response in the space provided.

Response Scale

1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
------------------------	---------------	--------------	------------	---------------------

Q#	<i>I feel confident I can provide appropriate cueing and support when working with residents in tasks related to:</i>	Response
1	Bathing activities	
2	Dressing and undressing	
3	Eating	
4	Toileting	
5	Communicating with the resident	
6	Providing directions and cues for the resident to follow	
7	Having resident participate in a meaningful activity	
8	Episodes when the resident demonstrates troubling behavior	
9	Changing the environment to improve the behavior of the client	