

ASSISTED LIVING HOME DIRECT CAREWORKER LEARNING AND
TECHNOLOGY INTERESTS AND NEEDS

by

Christina Lee Wyles

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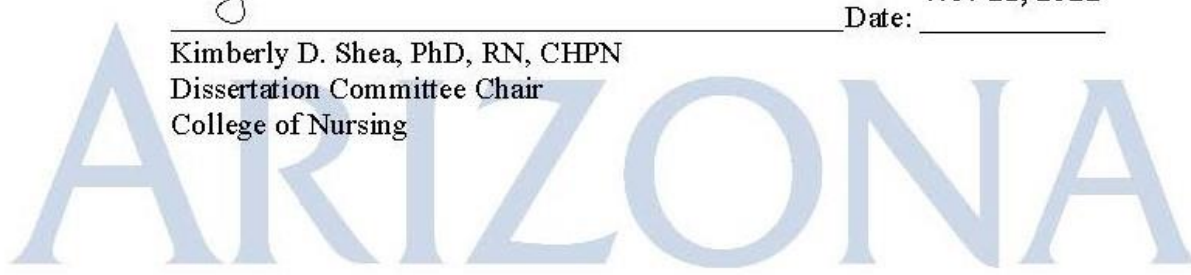

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To my love, John. Thank you for indulging me during this educational foray. Your unwavering support during this experience is a testament of how kind and generous you are. I am so fortunate and forever grateful.

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ABSTRACT

Background: A growing subset of 4.5 million United States (US) direct care workers (DCWs) provides the majority of hands-on care for senior residents living in assisted living (AL) settings. The assisted living home (ALH) is a popular and the smallest type of assisted living residence and requires the employment of DCWs. Federal data and oversight are currently limited, and state licensure varies, yet this is a growing component of care. The DCWs needs are unknown due to few available studies that focus on the DCWs needs.

Purpose: *To explore and describe the learning and technology interests and needs of this isolated but growing community of DCWs working in ALHs from the perspective of the DCW, the guiding question is, what are the self-identified learning and technology interests and needs of the direct care worker, working in the assisted living home?*

Methods: A human factor (HF) framework underpinned the interpersonal perspective used during this exploratory inquiry, guiding the preliminary literature reviews and research design. A purposive sample of DCWs were interviewed one-on-one using semi-structured questions using a qualitative descriptive (QD) methodology. Data analysis included qualitative content analysis from transcribed taped interviews.

Results: Significant study findings include that DCWs (n=14 females/median age 41) are interested in work-related topics, should include direct care skill development, and acknowledge resident complexity. They usually have access to technology for accessing health-related information and use multiple kinds of health-related technology to care for ALH residents. DCWs work hard and have extended work hours, with minimal time off to attend educational offerings. They also have an expanded scope of practice than other similar environments, have a

high level of workplace risk of injury, low salary, and are underrepresented and lack acknowledgment in the literature.

Conclusions: More knowledge about the DCW in the ALH environment must be available and should address intervention and practice research. More policies at the federal and state levels, including oversight, are needed to address DCW data needs, DCW pay inequity, and resident and DCW injury.

CHAPTER I: INTRODUCTION (STATEMENT OF THE PROBLEM)

The direct care worker (DCW) working in the assisted living home (ALH) environment is a vital segment of labor and increasingly in great demand. This segment of labor represents a rapidly growing subset of 4.5 million DCWs nationwide (Office, 2014). This growth trend will continue as it is a natural response to the United States (US) growing senior population, which is outpacing all other age groups. While there is insufficient information available, there is a strong indication that the work and resident care duties of the DCW often exceed their educational training. This is true even though these same DCWs provide the majority of hands-on care for assisted living residents (Han et al., 2017).

Compounding the scarcity of knowledge concerning the ALH DCW, there is a growing concern that ALH DCWs are isolated from work-related resources and have limited access to education and training (GAO, 2018). This impediment to necessary work-related information and education is more acute in states with large rural areas and/or substandard urban public transportation systems. The few education programs that are offered to the ALH DCW are often difficult to access due to the time and expense related to travel. The focus of this research is to explore factors that influence the learning and technological interests and needs of the assisted living home (ALH) direct care worker (DCW).

Gaps in Current Knowledge

Findings from several literature searches discussed in this chapter indicate little is known about the factors that influence the learning and technological interests and needs of the ALH DCW. In particular, there may be technology considerations that impact the learning interests of the DCW, but they are not known. There are no known educational models that are specifically

designed and tested for the ALH DCW. The few educational models and programs that do exist are designed for larger assisted living facilities, skilled nursing facilities, and home health or family healthcare givers. Although there is a growing number of educational and training programs that are disease-specific or geared to the informal and family caregivers, limited resources exist that are designed explicitly for the DCW in small facilities (Gaugler et al., 2016; Gitlin et al., 2015). While learning and technology interests and needs have been studied in larger long-term care environments, the interests and needs of DCWs have not been addressed in the ALH. Specifically not addressed are research-specific educational models and learning and technology access interests and needs of DCWs who work in the small ALH environment.

Purpose of Research

With the objective to fill a critical knowledge gap, the purpose of this study is to address the knowledge disparity concerning the ALH DCW with the guiding question, *what are the self-identified learning and technology interests and needs of the direct care worker, working in the assisted living home?* Three specific aims provide direction for the participant interviews discussed in Chapter III: Aim (1) To explore the perceived learning interests and needs of DCWs in the context of the small ALH; Aim (2) To describe the technology interests and needs of the ALH DCW as they relate to learning; Aim (3) To identify barriers and facilitators to achieve educational interests and needs.

Background and Significance

By 2030, 21% of Americans will be 65 years or older (Vespa et al., 2018). Some estimates suggest at least 70% of this population will require some form of long-term care (Scales, 2018). Narrowing this statistic even further, the fastest-growing sub-segment of this

adult group is people 85 years and older (Hagen, 2013; McPhail, 2016; Joint Center for Housing Studies of Harvard University [University], 2014). By 2040, the 85 and over population is projected to be 14.4 million (Profile of Older Americans, 2019).

Increased Complexity of Older Adults Needs

Connected with this increase is the likelihood that this aging population will have more than one chronic disease (multimorbidities) (Ferrer et al., 2017; McNabney et al., 2014; Smith et al., 2016). The sheer number of the “oldest-old” that are increasingly being impacted by chronic disease combinations is complicated to manage, is increasing, and is a worldwide concern (McPhail, 2016; Navickas et al., 2016). Most Americans plan to live independently in their own homes (Samus et al., 2018). Unfortunately, independent living is not a realistic plan for some. As the severity of their symptoms increases, this “aging-in-place” goal is not always possible.

Overview of Alternative Housing Options

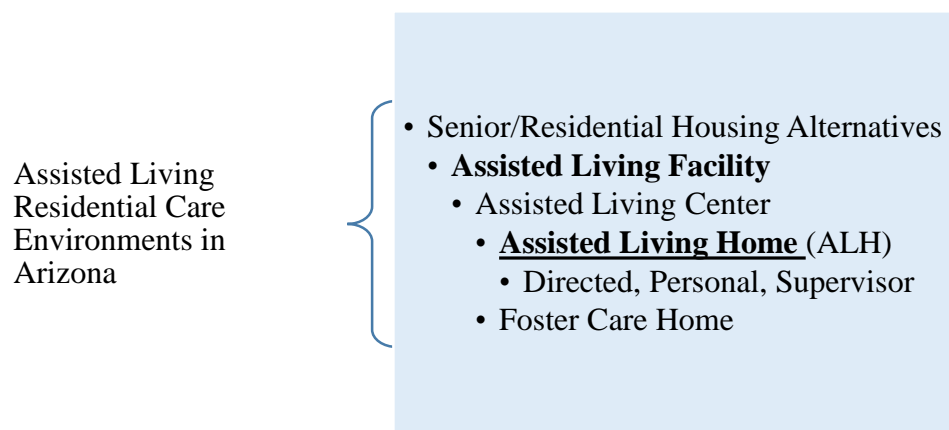
When remaining at home is no longer an option, older adults are increasingly seeking an alternative living environment to support their increasing care needs (Kaskie et al., 2015; McNabney et al., 2014). Assisted living (AL) facilities have become one of the most popular residential housing alternatives and are one of America’s fastest-growing housing sectors (Han et al., 2017; Maas & Buckwalter, 2006; McNabney et al., 2008).

Assisted living facilities are known by several names and fall under the broad canopy of senior/residential housing. Once in a while, senior housing includes “board and care homes,” but this term is phasing out (CDC, 2018; Shah, 2017a). This variation in the title of senior/residential housing is just one example of many inconsistencies that create some confusion (Phillips et al., 2000; Stone, 2004). Another example is that each state establishes and enforces its regulatory

requirements for assisted living communities (National Center for Assisted Living [NCAL], 2019). Figure 1 provides a visual arrangement and language used to identify the assisted living housing options in Arizona.

Figure 1

Organization of Assisted Living Facilities in Arizona



Note: Adapted from Article 8: Assisted Living Facilities, Chapter 10 Department of Health Services, Title 9. Health Services. 9 A.A.C. 10, Article 1, effective November 5, 2019.

The Centers for Disease Control (CDC) estimated in 2016 that 811,500 residents resided in residential care communities (Caffrey & Sengupta, 2018). The rapid growth of AL facilities is expected to continue (Caffrey & Sengupta, 2018; Spetz et al., 2015; Stone & Harahan, 2010). Conversely, occupancy rates in nursing homes are on the decline (American Health Care Association [AHCA], 2022; Harris-Kojetin, 2016; Mollica, 2009). Some states like California currently have more ALHs than skilled nursing homes (Shah, 2017a).

Summary of Chapter

The purpose of Chapter I was to introduce and offer background and significance supporting this study's proposed inquiry to explore and describe the learning and technology

interests and needs of this isolated but growing community of DCWs working in the ALH environment from the perspective of the DCW.

He that increaseth knowledge, increaseth sorrow.

- Ecclesiastes 1:18

CHAPTER II: LITERATURE REVIEW

To support a collective understanding and as a means to align the significance of the research problem with the research question (Bloomberg & Volpe, 2019), an analysis of the literature was accomplished with two literature reviews. The purpose of the first literature review was to convey a *situational awareness* within a broader context (i.e., general characteristics of the direct care worker [DCW], environment in which the DCW works, & organizational considerations) related to the significance and dynamics of the research problem. The second literature review was specific to this study's research purpose. A systematic approach was used to locate and assimilate the second review of the literature as a means to identify and examine the state of the science as it pertains to *exploring and describing the learning and technology interests and needs of this isolated but growing community of DCWs working in ALHs from the perspective of the DCW*.

Literature Review 1 – A Human Factors Perspective of the Direct Care Worker

Understanding human interaction typically includes identifying environmental circumstances, patterns and issue identification, and organizational requirements (Boy & Grote, 2011; Peplau, 1994a). This is especially important when there is a level of involvement between people and their interactions with technology within their working environments (Boy, 2013).

This situation creates a need for understanding. As a means to understand the complexity of humans (i.e., DCWs) in relation to their education and technology interests and needs within an organization (i.e., ALH), a *human factors* (HFs) framework was used to structure this inquiry.

An HF perspective was selected for two reasons. First, it provided a systematic way to deconstruct complexity (Boy, 2013). Second, an HF perspective emphasized the humans' point of view (e.g., DCW's) (Boy, 2014).

Definition of Human Factors

For purposes of this research, human factor (HF) was defined as the interactions among people in their environments within their systems in which they function. Human factors included considerations such as psychological, physical, economic, social resources, and other characteristics that may influence human behavior to make systems, tasks, and technology usage compatible with the abilities, needs, and limitations of humans (National Research Council, 2011).

Direct Care Worker Characteristics

There is a troubling lack of available knowledge about the ALH DCW (Hewko et al., 2015; Kelly et al., 2018; Institute of Medicine [IOM], 2008). It is known that women constitute the largest segment (85%) of this direct care workforce (Campbell, 2017; Shah, 2017a), but men are increasingly joining their ranks (Campbell, 2017; Kelly et al., 2018). In a recently released report, three in five DCWs self-define as a minority (Ruggles et al., 2019). One in four are immigrants to the United States (US) and have lived in the US for 10 years or longer (57%).

These immigrants constitute 21% of the residential care aide workforce compared to 17% of the total labor force in the US (Ruggles et al, 2019). Nearly half of the residential care aides have completed no formal education beyond high school (Scales, 2020).

Direct Care Worker Definition

The DCW is defined as any paid careworker providing personal health or support services directly to one or more adults in the ALH. In Arizona, DCW is defined “as an individual who provides supervisory care services, personal care services, or directed care services to a resident, and does not include a family member of the resident” (Article 8. Assisted Living Facilities – R9-10-801 – Definitions <https://www.azdhs.gov/documents/licensing/residential-facilities/article-8.pdf>). Sometimes referred to as a residential care aide (Paraprofessional Healthcare Institute [PHI], 2020), the DCW provides the majority of hands-on care for the ALH resident. Typical services include 24-hour supervision and assistance, meal preparation, cleaning, assisting with dressing, assisting with personal hygiene, medication management (administering, assisting, prompting), personal care services (e.g., assisting with oral hygiene, toileting, hands-on assistance with transfers and mobility, or providing standby assistance), providing transportation, providing verbal and visual reminders to the resident to perform regularly scheduled treatments, exercises, health and wellness programs, housekeeping and maintenance, and companionship (AHCA, NCAL, 2019).

“I take my work as a caregiver seriously and feel that my role is an important one. I work hard and put the residents’ needs first.” – HB, Direct Care Worker (Shah, 2017, p. 20).

An Institute of Medicine (IOM) report (IOM, 2008) recognized the DCW as both a rewarding but demanding career. Thirteen years ago, the IOM report (2008) also acknowledged that caring for the ALH resident is increasingly complex. That assessment continues to hold true today.

“It was so hard taking care of 8 people. Half could take care of themselves; half were bed bound. Four suffered from Alzheimer’s and needed a lot of attention and care. I was

awake practically the whole time I worked at this facility.” – LN, Direct Care Worker for 8 years (Shah, 2017, p. 8).

Business and Labor Data

Using the North American Industry Classification System (NAICS, n.d.), which is the federal standard to classify industries, the ALH DCWs are employed in several business categories. They include continuing care retirement communities (NAICS Code 623311) or assisted living facilities for the elderly (NAICS Codes 623312) (ECPC, 2017). These NAICS groupings are complicated by the labor classification of the DCW working in the ALH (NCAL, 2019). Often the ALH DCW is included in the labor data of noninstitutional personal assistance and home health services (Kelly et al., 2018), but may also be grouped with nursing assistants (Scales, 2020). This becomes even more complex, depending on the state labor regulations and the employers' hiring criteria (PHI, 2020). Using the Bureau of Labor Statistics' Standard Occupational Classification (SOC) system, it is not unusual for the ALH DCWs to have experience as personal care aides (SOC 39-9021), nursing assistants (SOC 31-1014), or home health aides (SOC 31-1014) (Scales, 2020; NCAL, 2019).

Economic Status

Obtaining accurate information on basic labor standards and wage compliance often is veiled and elusive (Shah, 2017a). The DCW workforce continues to experience a sub-par employment environment. Simply put, this vital workforce is poorly compensated and is not provided with economic stability (Shah, 2017b; Swanson-Aprill et al., December, 2019).

Although the demand for the ALH DCW continues to increase, ALH DCWs are paid relatively low wages and are not always appropriately paid (e.g., wage theft) (Shah, 2017; Kinder, 2020; Swanson-April, 2019). Many DCWs live below the poverty level (Espinoza, 2017;

Kelly et al., 2018; Shah, 2017a). Inflation-adjusted median hourly wage estimates range from \$10.33 in 2006 and \$10.49 in 2016 (Campbell, 2017) to \$12.27 in 2009 and \$12.69 in 2019 (PHI, 2020). When the impact of the mandatory use of part-time workers is factored in, the median annual income for DCWs is \$21,000 (Ruggles et al., 2019).

“I have to do what I have to do to make a living and put food on my table. The facilities pay very little for my services. When I’m not paid properly, it is stressful. I have sued two of my former employers because of wage theft.” – D.E., Direct Care Worker, (Shah, 2017, p. 15)

It continues to be a challenge for DCWs to support themselves and their families financially, and they often have to rely on public assistance (PHI, 2020). DCWs are more likely to live in poverty, lack health insurance, and rely on food stamps than other workers (Shah, 2017a). There has been some indication over the past decade that wages for DCWs (personal care aides working in ALHs) rose faster than inflation (Campbell, 2017). However, after inflation adjustments, the “real wages” of DCWs have remained stagnant over the past 10 years (Espinosa, 2017). Finally, it is not unusual for the ALH DCW to earn less than home health aides and nursing assistants (Campbell, 2017).

Disparity Examples of the Direct Care Worker

The DCW has a heightened risk of experiencing various forms of discrimination on the job and in their daily lives, and gender and racial inequity are continued concerns for this workforce (Shah, 2017; Scales, 2020; Espinoza, 2017). Inadequate compensation and many other job quality concerns reflect and perpetuate the racial and gender disparities faced by the ALH DCW (Shah, 2017; Scales, 2020).

“I have worked in five countries as a caregiver: Saudi Arabia, Dubai, Hong Kong, Singapore, and the United States. Of all of these countries, I have faced the most extreme

exploitation here working in the residential care facility.” – NG, Direct Care Worker (Shah, 2017, p. 13)

One of the highest occupational injury rates in the US occurs in DCWs (Campbell, 2018) most often due to overexertion during patient care activities (Shah, 2017a). Frequently cited on-the-job injuries are related to repositioning, lifting, and transferring of residents, followed by violence (Campbell, 2018). It is not uncommon to hear reports of DCWs heavy workloads (Shah, 2017). Using knowledge of the staffing and pay structures as suggestive indicators, it is believed that ALH DCW labor violations are more prevalent and often go unreported (Shah, 2017a). The ALH DCWs workload, working conditions, turnover rates, skill, and educational preparation are not clearly documented (Hewko et al., 2015). Basic standards of care and safety are lacking, which places both the DCW and the ALH residents in harms way.

“I slept either in the garage or on the sofa. The garage was not converted into a room. It was a storage room for supplies and equipment. It also stored cleaning supplies and chemicals. Sometimes, I slept in the resident’s room when the resident needed additional supervision.” – HB, Direct Care Worker (Shah, 2017, p. 12)

Workload and Educational Preparedness

Ongoing staff training, such as infection control and safety education, do not consistently occur in the small ALH (Han et al., 2017). Even basic infection control education (e.g., hand washing) is not mandated in 11 (20%) states (Kelly et al., 2018). There are indications that ALH DCWs are providing more complex care than those in larger and more regulated Adult Living Facilities (ALFs) (Han et al., 2017; Woods et al., 2010).

Scope of Practice

Direct care workers increasingly provide services that once fell under the purview of professional nursing in small ALHs with minimal oversight (Han et al., 2017; Woods et al., 2010).

It is not uncommon for the DCW to be faced with resident care issues that are beyond their scope such as pressure ulcers, glucometer use, medication administration, hydration, socialization, and infection control practices (Han et al., 2017). A rare glimpse of what the DCWs may experience is explored in a report by the Coalition for a Fair and Equitable Caregiving Industry,

Understaffed and Overworked: Poor Working Conditions and Quality of Care in Residential Care Facilities for the Elderly (Shah, 2017).

“I had to take care of everyone by myself (8 residents, half had Alzheimer’s) for 3 days and 2 nights. There was just enough food for the residents but not for me.” – LN, Direct Care Worker (Shah, 2017, p. 17)

State-Mandated Education

Each state independently mandates any orientation and/or training requirements for DCWs (NCAL, 2019; PHI, 2020). This is further complicated by the changing role of the AL owner. Often the AL owner defines their role as a business person first and may only have a minimal understanding of the skills and knowledge that a DCW should have (Shah, 2017).

Often, these employers only require their employees to meet their state's minimum training requirements (Morgan et al., 2014), which is often minuscule. Any additional ALH DCW training education is usually at the expense of the ALH DCW or the discretion of the AL business owner. In Arizona, DCW training programs are approved and offered by the Arizona Board of Nursing Care Institution Administrators and Assisted Living Facility Managers (AzNCIA).

“I was not trained at all in the first facility I worked at. I was just thrown in. It was so overwhelming. Nobody taught me how to care for the residents properly. The caregivers were just told generally the residents’ problems, what to feed them, when to give them their medicine and that’s it. We were given no other guidance.” – RC, Direct Care Worker for 5 years (Shah, p. 9).

Many states do not have continuing education requirements for ALH DCWs. It is understandable there is a growing concern that the minimum ALH DCW training is not sufficient to cope with the ever-increasing complexity of resident needs (Boerner et al., 2017; Han et al., 2017; Kaskie et al., 2015; Phillips et al., 2013). Research and federal data that exist identify significant issues (GAO, 2018). Issues include safety (Castle et al., 2012), medication management (Castle et al., 2014; Kemp et al., 2012; Mitchell & Kemp, 2000; Woods et al., 2010), and infection control issues (Bender et al., 2012; Han et al., 2017; Kossover et al., 2014; Lum et al., 2014).

Technology Availability

Traditionally there have been significant restrictions and constraints on learning activities resulting from geographical and time issues. The development and effective use of innovative learning platforms has greatly diminished the negative impact of location and time. Now, not only is it much easier for people to stay connected and up to date, but peer-to-peer engagement is much easier to facilitate (Merrill, 2015). Synchronized educational events are typically conducted via a hardware device (desktop computer, laptop, iPad, tablet, or smartphone device). Videoconferencing platforms are Internet accessed software (e.g., WebEx, Zoom, GoToMeeting) that can be especially useful technologies for delivering educational content. They may involve point-to-point or one-to-one interaction, or multipoint or one-to-many interaction.

However, information is sparse regarding technology use or availability in ALH. Larger residential care facilities and nursing homes have started investigating training initiatives using web-based platforms. Recently the Agency for Healthcare Research and Quality (AHRQ) has partnered with Project Extension for Community Healthcare Outcomes (ECHO), located at the

University of New Mexico, and the Institute for Healthcare Improvement (IHI) to provide free infection control training related to COVID -19 to nursing home staff across the US (Carp, 2020).

The Small Assisted Living Home

A popular long-term care option is often referred to as the ALH (Khatutsky, 2016; Leroi et al., 2007). This is the smallest residential care facility and one of the more popular subcategories of AL facilities. This home-like setting promotes an atmosphere where residents are encouraged to bring their personal belongings (Kaskie et al., 2015). Another reason for the popularity of the small ALH is that it is often viewed as a more affordable 24-hour residential care option (Johnson & Wang, 2019). Typically, ALH services include assistance with and supervision of activities related to daily living (ADL), social interaction, and medication management (Han et al., 2017; Shah, 2017a). Arizona defines assisted living services as *supervisory care services, personal care services, directed care services, behavioral health services, or ancillary services provided to a resident by or on behalf of an assisted living facility* (Article 8. Assisted Living Facilities – R9-10-801- Definitions).

Historical Context

It is noteworthy to acknowledge the context from which the learning needs and interests of the DCW have evolved. The ecosystems (e.g., payer sources, regulatory requirements, resident care needs) that impact today's small ALHs have changed dramatically from the original, 2-4 bed model. The original intent of the small ALH was to offer a stable, social, non-medical, home-like living experience (Phillips et al., 2013; Wilson, 2007). However, most ALHs

today no longer reflect the original small (2-4 bed), non-medical, home-like social intent (Han et al., 2017).

Another example of how the ALH environment has evolved is in the definition of “*small*.” The small bed capacity for each residential home licensure has increased. Most of the ALH homes have modified their single-family dwelling to accommodate an increased bed capacity of up to 8-10 residents per single-family household. One of the reasons for the variance of bed capacity is that each state is responsible for its regulatory oversight, and this oversight influences the bed count, size, and scope of service (NCAL & Living, 2017; Carder et al., 2015; Kaskie et al., 2015; Park-Lee et al., 2011). Arizona’s ALHs can be licensed by the Department of Health Services (DHS) for 10 or fewer residents that are usually in a home in a residential neighborhood (www.aznciaboard.us).

Assisted Living Home Today

A typical small (3-10 beds) ALH is often locally owned and located in a conventional, single-family home of average square footage in a residentially zoned neighborhood. These ALHs are located in both urban and rural areas. While the urban areas include well over half of the ALH population, rural ALHs fulfill a significant need but will require future considerations regarding aging in place (Hawes et al., 2005). Although regulations in each state vary, each licensed ALH is predicated on bed capacity. As the state permits, an ALH may also be licensed as an adult day-health service (NCAL & Living, 2017; Leroi et al., 2007).

Size and Geographic Location

The CDCs bi-annual survey *National Study of Long-Term Care Providers* (NSLTCP) (Caffrey et al., 2014; Caffrey & Sengupta, 2018; CDC, 2018) currently divides residential care

communities into three groups based on the number of beds: 4-25 beds, 26-50 beds, and more than 50 beds (CDC, 2018). This is a change in bed-size groupings from earlier NSLTCP Reports (2010-2014) that segregated residential care into four groups: 4-10 beds, 11-25 beds, 26-100 beds, and more than 100 beds (Khatutsky, 2016).

In 2010, the small ALH (4-10 beds) represented 50% of all residential care homes (Khatutsky, 2016). Perhaps a reason for the ALH category reallocation is, although the ALH 4-10 beds facilities represented 50% of the residential care homes (Greene, 2013; Park-Lee et al., 2011), they represented only 10% of ALH residents. The larger ALH facilities (10+ beds) represented 90% of ALH residents. Another noticeable aberration about the small ALH was in the western region of the United States, where the concentration (n=9,900/ 75%) of small ALHs was greater than in the rest of the nation (Khatutsky G, 2016).

Business Requisites

In most states, regulatory requirements for opening and dissolving an ALH business are relatively simple. The majority (81.1%) of ALHs are registered and incorporated as for-profit businesses (Harris-Kojetin, 2016). Customary ALH payer sources are private funds or tax-funded long-term care programs such as Medicaid (Karon, 2014). The average monthly cost for the small ALH varies by state definition, payer source, and accommodations (Stone, 2004).

The expense framework for ALHs varies and is impacted by the ALH policies (Karon, 2014). However, there are expense similarities customary to the industry. Customary monthly rate determinations include daily expenses (e.g., incontinence & wound care supplies), levels of service or resident characteristics (e.g., memory care or diagnosis of dementia), hours of direct resident care (e.g., ADL assistance, medication reminders, medication administration, glucose

monitoring, insulin injections), living quarter environment (e.g., number of rooms, square footage, private versus shared room), and amenity offerings (e.g., massage, pet therapy, outings) (Karon, 2014). Monthly [assisted living cost](#) estimates range from \$2,525 to \$7,388 and median from \$3,075- \$5,745 (Marak, 2018). A long-term care calculator is available from American Association of Retired Persons ([AARP](#)) and provides an estimate for each state based on zip code (AARP, 2018).

The Assisted Living Home Resident

There are strong indicators that the ALH DCW is faced with increasingly complicated residents and is providing more complex care than their counterparts in larger and more regulated assisted living facilities (ALFs) (Han et al., 2017; Woods et al., 2010). The few studies that are available highlight high acuity and poor quality of care issues, yet the DCW training is minimal (Han et al., 2017; GAO, 2014).

Care Complexities and Multimorbidities

Characteristically, multimorbidities often impact both functional and cognitive capabilities (McNabney et al., 2014; McNabney et al., 2008). One significant consequence is that a person with multimorbidities will dramatically increase the need for services over time (Navickas et al., 2016). However, due to the lack of federal data requirements, little data are available regarding the multimorbidity issues or care complexity of the ALH resident with which their DCW must contend (Zimmerman et al., 2003). The ALH resident demographics suggest that they are older (Kaskie et al., 2015; Leroi et al., 2007) and more complex health issues (Ferrer et al., 2017; Phillips & Ziminski, 2012) than other residential care environments.

The increase in functional and cognitive deficiencies of ALH residents has added to their

care complexities (Zimmerman et al., 2003; Salomon et al., 2013). These increased care complexities are now often at the level of skilled professional nursing (GAO, 2018; Han et al., 2017; Phillips & Ziminski, 2012). The duration of the ALH resident's needs frequently extends into decades (Smith et al., 2016). As an example, the fastest-growing segment of a Medicaid beneficiary group is older adult assisted living services, in which the ALH is included (GAO, 2018). This trend is expected to continue with Medicaid approving waivers for most states (FCA, 2017). (Caregiving., 2017).

The CDC's NSLTCP is one of the few resources that include data from 50 states and the District of Columbia. It substantiates many of the findings in the report by the Government Accountability Office (GAO, 2018) that more residents in the smaller residential care settings (4-25 beds) were receiving Medicaid. The NSLTCP has consistently reported that the small residential homes also had a higher rate of Alzheimer's disease and depression than larger residential care communities (Caffrey et al., 2014; Caffrey & Sengupta, 2018; Caffrey et al., 2012). Another finding by the GAO (2018) was that residents of small ALHs require more assistance with ADL. This finding was supported in an earlier study by Han et al. (2017) that administered surveys of ALH managers. The increased ADL work responsibilities included assisting residents with eating, walking, dressing, toileting, and transferring in or out of a bed or a chair. Freedman and Spillman (2014) also found that older adults living in residential settings (i.e., independent living, assisted living, & nursing home) required assistance with toileting and mobility activities 75% of the time.

Influencing Factors

In addition to the concerns mentioned above is the consequence of resident relocation (Sharpp & Young, 2016). Increasingly, the disruptive event of relocation predisposes the ALH resident to a greater risk of hospitalization, a move to a higher level of care, and an increased risk of death (De Boer et al., 2022; Phillips et al., 2019). Almost one-third of all assisted living residents are expected to be hospitalized each year (Phillips et al., 2000; Zimmerman et al., 2005). Another estimated prediction is that 10-14% of ALH residents will have an emergency department visit or will be discharged from an overnight hospital stay within 90 days upon ALH admission (Caffrey et al., 2014; Caffrey & Sengupta, 2018).

Regulatory and Reporting Oversight

Standard regulatory requirements that protect residents and workers in larger long-term care settings do not consistently exist for the ALH (Han et al., 2017). Typically, federal health care regulatory oversight includes but is not limited to mandating that long-term care facilities report bed census, resident acuity, and care worker training. However, there is a lack of federal oversight and agreed upon classification vocabulary pertaining to the ALH at both the state and federal levels (Shippee et al., 2019). Because of the lack of federal oversight and inconsistent vocabulary, reporting statutes, and reporting systems, the ALHs typically have minimal reporting requirements compared to standard safeguards in place for other larger long-term health care settings.

National-Level Data

Assisted living homes are not required to contribute to national-level data collection efforts like other similar care environments such as skilled nursing facilities and home health

agencies. Even the larger assisted living facilities report they do not have the infrastructure, and there are “critical gaps in connectivity and interoperability of existing technologies” (CEAL et al., 2015, p. 5). These gaps result in a failure to support census activity, acuity levels, readmissions to acute care, safety, and outcome measures (McNabney et al., 2014). Data regarding serious public health issues such as infections are not consistently collected or reported to the CDC (Han et al., 2017; Kaskie et al., 2015). The AL industry’s lack of consensus on what and how to measure outcomes in assisted living demonstrates priority, legal, and data barriers in investing in this kind of data collection (CEAL, 2015, p. 5).

In one of the few reports issued by the US Government Accountability Office (GAO) (2018), even when it is a requirement of the states receiving federal Medicaid, states are not consistently protecting the AL resident’s health and welfare (GAO, 2018). Examples cited in the GAO report (2018, p. 43) include resident injuries resulting in hospitalization, unauthorized use of seclusion, attempts of suicide, suspected criminal activity by the provider, discharge and eviction by the provider, and medication errors as critical incidents. Even when states are mandated to collect data such as “suspicious deaths” or “critical incidents,” states do not consistently investigate, collect, or report these sentinel events (GAO, 2018).

State-Directed Oversight

This decentralized regulatory oversight model relies on each state to be responsible for the majority of laws that govern their ALHs (Kaskie et al., 2015; Kossover et al., 2014; Stone, 2004). State-directed regulatory oversight is viewed by many as minimal (Kossover et al., 2014; McNabney et al., 2008; Nattinger & Kaskie, 2017; Park-Lee et al., 2011) and not always

dependable or forthright (GAO, 2018). Some states admit they do not have a system in place that reports federal requirements (GAO, 2018).

Complicating state data-gathering operations, often the ALHs report to different agencies at the state level than do similar, but larger health facilities. This adds a layer of infrastructure inconsistency that creates serious challenges in collecting, analyzing, and communicating significant data such as hospital readmission rates and infection outbreak control (Kossover et al., 2014).

Further compounding this lack of oversight and public safety responsibility, several state legislatures have enacted statutes that side-step their own regulatory protections, such as their own State Nurse Practice Act that was already in existence (Mitty et al., 2010). This action seems counterintuitive, yet there continues to be low political will to legislate protections on behalf of the ALH DCW and the residents in their care (Han et al., 2017; Kaskie et al., 2015; Nattinger & Kaskie, 2017).

The aforementioned lack of federal oversight, limited state involvement, limited informatics and data collection infrastructure, increasing complexities of care, and eroding distinctions between care providers (Wellin, 2018), combined with the unknown workload and limited educational resources, place the ALH DCW in an extremely difficult position and the residents they attend at risk. As a result, there continues to be a growing consensus that increased educational support of the ALH DCW is warranted (e.g., training, education needs, interests, & learning topic preferences) (Han et al., 2017; Kaskie et al., 2015; Phillips et al., 2013; Woods et al., 2010). There is a need for a well-designed educational path that provides ongoing education to prepare the DCW for the evolving care needs of their ALH residents (Espinoza, 2020).

Literature Review 2 - Direct Care Worker Educational Offerings

This focused literature review offers an examination of current peer-reviewed research emphasizing characteristics of DCWs and their educational offerings. Limitations, as well as gaps in the literature, are also presented. During this critical examination of the literature, the guiding question was: What is the *state of the science* of educational opportunities for DCWs working in a small, assisted living home? The purpose of this review is threefold to: (1) identify and appraise studies that identify ALH DCW as the sample research population (e.g., methods, significance, bias, limitations, & applicability); (2) identify and examine the current research to gain awareness and identify characteristics of the ALH DCW educational offerings (range, depth, & use of technology); and (3) identify gaps in this area of research that may justify further investigation.

Inclusion and Exclusion Criteria

Inclusion criteria included English language, empirical, peer-reviewed full articles published between 2000 and 2019 identifying educational opportunities for the DCW in a small ALH and restricted to adult studies, with the understanding that the ALH definition (4-10 beds) may warrant flexibility and “small” ALH would vary from state-to-state.

To encourage an inclusive scope of evidence, criteria related to the population of interest (ALH DCWs) were limited. Exclusion criteria were studies that did not occur in the United States and did not mention the ALH DCW as a study participant. Other examples of exclusion included case reports, editorials, reviews, doctoral dissertations, and scientific meeting abstracts.

Search Strategy

Search strategies used were a combination of keywords, phrases, and search combinations. Appendix A includes examples of the search terms and the search strategies used during this focused literature review. At the beginning of the search process, a content expert, a health science college of nursing librarian, agreed to assist with identifying Medical Subject Headings (MeSH), Boolean logic, and filters. When needed, these strategies were applied in order to narrow results. The initial search was conducted in PubMed. When indicated, keywords and subject headings were adjusted for other databases. Relevant research articles were also identified from footnote chasing, author searching, hand-searching bibliographies of selected literature, and selected journal databases. The majority of the searches took place in five online bibliographic databases: PubMed, Psych INFO, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Google Scholar, and the Cochrane Library. A single author, the primary investigator (PI) completed the process of screening the abstracts and titles.

Over 400 article abstracts were reviewed for inclusion (Appendix A). This was followed by a search of ClinicalTrial.gov and included previous, current, and pending studies using terms *caregiver*, *assisted living*, and *residential care*. Reports were excluded if the research took place outside of the United States (US), were not available in English, or were abstracts of scientific meetings, case reports, editorials, reviews, doctoral dissertations, and qualitative studies. By necessity, this review's inclusion criterion were leniently applied. If there was even a remote possibility a US study included the ALH DCW, the study was not excluded from this review.

Discussion of Review

There was a dearth of studies that identified ALH DCW as a sample population, fewer even that addressed the education offered to DCWs working in the small, assisted living home setting. Of the studies reviewed, only one specifically addressed the DCW in the ALH (McCurry et al., 2012). Urban areas and larger AL environments (more than 11 beds) represented the majority of the DCW participants' working environments in this review. Appraisal activities included study focus, sample, location, method, and measurement analysis. The selected studies reflected a wide range of topics, educational delivery methods, and measurement methodologies.

An additional analysis focused on three categories: modes of delivering educational content, educational topics, and the data collection methods that the authors used to form their findings. In some cases, the ambiguity presented within the research reports made categorization of educational components difficult.

Delivery Modes of Content

No study used live webinar methods to reach their study population (Table 1). Perhaps this is because larger AL locations had ready access to their participants when delivering the training, and smaller sites did not have access to technology. In this review, in-person, on-site training was the preferred delivery method of staff education (47%). Sometimes sessions were augmented by other learning modalities such as a computer or video instructions or group activities. In several studies, the education delivery was different for the administrators of the facilities and the "hands-on" direct care worker (Walker & Harrington, 2013). Also, at least three studies were related to larger research initiatives that involved larger residential care facilities (Galik et al., 2015; Gaugler et al., 2016; Resnick et al., 2016).

Table 1*Modes of Delivering Educational Content*

| Modes of Delivery | On-site Training | Didactic Lectures | Group Activities | Asynchronous Web Education | Videotape Education | Email Newsletter with Games | No Training Included |
|---|-------------------------|--------------------------|-------------------------|-----------------------------------|----------------------------|------------------------------------|-----------------------------|
| Gendron, Pryor, & Welleford (2017) | x | x | x | | | | |
| Lopez, White, & Carder (2014) | | | | | | | x |
| Walker & Harrington (2013) | | | | x | | | |
| Dupler & Crogan (2004) | x* | | x* | | | | |
| Gaugler, Hobday, Robbins et al., (2016) | | | | x | | | |
| Kelly, Morgan, Kemp, et al., (2018) | | | | | | | x |
| Dakin, Quijano, McAlister (2011) | x | | | | | | x |
| Hyer, Molinari, Kaplan, et al., (2010) | x* | x | | | x | | |
| Leroi, Samus, Rosenblatt et al., (2007) | | | | | | | x |
| Walker & Harrington (2013) | | | | | | | x |
| McCurry, LaFazia, Pike, et al., (2012) | x | | | | | | |
| Galik, Resnick, Lerner, et al., (2015) | x | | | | | | |
| Resnick, Galik, Vigne, et al., (2016) | x* | | x* | | | x | |
| Dobbs, Kaufaman, Meng (2018) | | | | | | | x |

Note: * Denotes that this strategy was used at least some of the time or with some of the subjects.

The only study that specifically focused on ALH environment enrolled 37 ALHs in a feasibility study that implemented a 4-season Sleep Education Program (SEP) geared for Alzheimer's patients (n=47) (McCurry et al., 2012). The average ALH census was 4.5 residents. Four training sessions were randomly assigned with ALH staff to develop behavioral sleep plans. Findings suggested that ALH staff demonstrated feasibility to implement. ALH staff were “*highly supportive*” of program recommendations.

Table 2*Types of Educational Offerings to DCWs*

| Education Topics | Dementia / Alzheimer's | Infection Control | Palliative Care | Depression | Sleep Education | Restorative Care | Management of Mental Health | Multi-Subject |
|---|-------------------------------|--------------------------|------------------------|-------------------|------------------------|-------------------------|------------------------------------|----------------------|
| Gendron, Pryor, & Welleford (2017) | | | | | | | | x |
| Walker & Harrington (2013) | | | | | | x | | |
| Dupler & Crogan (2004) | | | | | | | | x |
| Gaugler, Hobday, Robbins et al., (2016) | x | | | | | | | |
| Dakin, Quijano, McAlister (2011) | | x | | | | | x | |
| Hyer, Molinari, Kaplan, et al., (2010) | x | | | | | | | |
| Walker & Harrington (2013) | | | | | | x | | |
| McCurry, LaFazia, Pike, et al., (2012) | x | | | | x | | | |
| Galik, Resnick, Lerner, et al., (2015) | x | | | x | | | | x |
| Resnick, Galik, Vigne, et al., (2016) | x | | | | | | | x |
| Dobbs, Kaufaman, Meng (2018) | | | x | | | | | |

Education Topics

The majority of education topics (n=5) involved dementia and Alzheimer's Disease content (Table 2). This finding supports the Leroi, Samus, Rosenblatt et al. (2007) finding that Maryland's smaller AL facilities have a larger population (81%) of patients with dementia vs. (63%) for larger AL facilities. Increasingly, states are launching education programming designed specifically to prepare staff to manage dementia-related behavioral issues. Examples include Florida's mandated curricula components (Hyer et al., 2010); Maryland's *Function Focused Care Intervention for Cognitively Impaired* (FFC-CI) (Galik et al., 2015; Resnick et al., 2016) and Oregon's *STAR-Community Consultants* program (STAR-C) (McCurry et al., 2017)

Another strategy found in the literature was online training programs developed specifically for dementia-related behavior. Four on-line modules that were each an hour using a

single group pretest/posttest model were evaluated (Gaugler et al., 2016). Each module included several videos and interactive activities. A convenience sample of 87 DCWs were consented with a sample of 40 DCWs completing the study. One posttest measure increased after completing the modules, knowledge of dementia-related behavior: 29 participants (62.5%) gained knowledge, 7 (17.5%) had no change, and 4 (10%) showed a decrease in knowledge.

Of the 14 studies reviewed, not all studies directly focused on delivering education and training. Eight studies concentrated on DCW workplace issues that included findings related to education needs using an array of data collection strategies (Table 3). Demographic and employment characteristics of the AL DCW involving frontline workers using data from the 2014 American Community Survey was investigated (Kelly et al., 2018), US Census Bureau. Descriptive analysis indicated that training was increasingly a priority for frontline workers and that mentoring and team training may help reduce employee turnover. The second study by Lopez, White, and Carder (2014) found similar findings related to work-based learning (WBL). This study focused on DCW job satisfaction following the completion of 27 WBL modules that took approximately 30 minutes each. Qualitative findings from focus groups (n=27) indicated three interrelated WBL categories (relational aspects, worker identity, and finding time), and WBL programs may be able to increase job satisfaction. Finally, Walker and Harrington (2013) piloted their web-based asynchronous restorative care program to AL facilities in eight states and reported that job satisfaction was linked to positive outcomes. No power analysis was reported.

Table 3*Data Collection Methods Used in DCW Studies*

| Data Collection Strategies | Tests and Questionnaires | Focus Groups | Antidotal Reflection | Notation by Surveyors | Utilized Existing Data | Curricula Reviews | Telephone Surveys | Website Data |
|---|---------------------------------|---------------------|-----------------------------|------------------------------|-------------------------------|--------------------------|--------------------------|---------------------|
| Gendron, Pryor, & Welleford (2017) | x | | | x | x | | | |
| Lopez, White, & Carder (2014) | | x | x | | | | | |
| Walker & Harrington (2013) | x | | | | | | | x |
| Dupler & Crogan (2004) | | | | x | | | | |
| Gaugler, Hobday, Robbins et al., (2016) | x | | | | | | | x |
| Kelly, Morgan, Kemp, et al., (2018) | x | | | | x | | | |
| Dakin, Quijano, McAlister (2011) | x | | | | | | | |
| Hyer, Molinari, Kaplan, et al., (2010) | | | | | | x | x | |
| Leroi, Samus, Rosenblatt et al., (2007) | x | | | | x | | | |
| Walker & Harrington (2013) | x | | | | | | | |
| McCurry, LaFazia, Pike, et al., (2012) | x | | | | | | | |
| Galik, Resnick, Lerner, et al., (2015) | x | | | | | | | |
| Resnick, Galik, Vigne, et al., (2016) | x | | | x | | | | |
| Dobbs, Kaufaman, Meng (2018) | | | | | x | | | |

Learning Need Assessment

Two studies assessed the AL DCW learning needs. Dakin and McAlister's (2011) exploration included DCWs' perceptions of the mental health needs of residents. Of the 21 rural and urban Northern Colorado AL sites (9 = larger/12 smaller), 75 DCWs participated by completing questionnaires indicating they would find it beneficial to have mental health training on managing challenging behaviors. A pilot study (Dobbs, Kaufman, & Hongdao, 2018) examined the relationship between the percentage of DCWs (n=45) trained on how to provide care at the end of life and hospice utilization. Findings were that AL resident hospice use was associated with the percentage of DCWs trained in end-of-life care.

Two state-wide initiatives evaluated AL training needs. During the Washington State quality improvement program (Dupler & Crogan, 2004), 500 residential assisted living and board and care homes (81%) participated over one year. The AL providers identified 10 training needs from a statutory compliance perspective in which the top three were resident plans, medication services, and documentation. In Virginia, a state-wide evaluation of a continuing education program for AL and adult day care centers was conducted over a 6-year period (Gendron et al., 2017). Data strategies included analyzing survey data and post-training survey questionnaires. Findings were that knowledge gained during the training, which included didactic and group activities, was greater for medically credentialed individuals than non-medically credentialed.

Overall Impression

Most study abstracts, introductions, and aims were clear. Reported data collection methodologies offered varying sophistication and rigor levels using qualitative, quantitative, and mixed methods techniques. Most samples were by convenience, and sample sizes were generally small. Often the AL facility size (bed #) was opaque, obfuscating generalizability.

Gaps Realized in Literature

There were indications that the ALH small environment may possess unique obstacles that keep DCWs from participating in educational and support offerings. Though not evident, there was a tacit implication that the more significant intervention initiatives (Galik et al., 2015; Gaugler et al., 2016; Resnick et al., 2016) may have planned to include the DCWs when designing their study. However, it was not clear if ALH DCWs participated. If ALH DCWs did not participate or were omitted, future studies should explore ways to involve these DCWs and

design educational and supportive interventions specifically for this population and the environment in which they work.

Most studies reviewed did not segregate the DCWs from the environment in which they provided care (e.g., ALH). Size and number of beds sometimes seem to matter, but little is known at the national level concerning residential care settings (Freedman & Spillman, 2014). The findings from this focused literature review confirmed that the size of the ALH is rarely acknowledged nor is the number of DCWs working in them. What little evidence exists confirms there is variability in AL environments. There is little research available concerning DCWs working in the small ALH setting.

Conclusion

This analysis confirmed previous findings that few studies focus solely on the ALH DCW. The reviewed literature offered a minuscule quantity of insight, and study outcomes were mixed. Negligible information was available about the nuances of ALH DCW education and technology human factor needs. Specifically, only one study entirely identified the DCW in the ALH as the sample population (McCurry et al., 2012), and this study involved sleep education.

The ALH DCW faces environmental and organizational complexities. Due to the scarcity of research in this area, more rigorous research that focuses on the DCW in the ALH is warranted. Only then can the findings be deemed sufficiently relevant to be generalized and transferred to this population.

Summary of Chapter

The literature review was segregated into two sections. The first review used a HF framework to organize the discussion and awareness of the significance and complexity of the

ALH DCW. This discussion included DCW characteristics, environmental concerns, and organizational considerations. Little is known about ALH DCWs and their use of technology. In the second review a focused review of the literature examined the research of educational offerings for DCWs working in the ALH environment. Findings from this review suggested that research is minimal, the opportunities for ALH DCWs to participate in learning events are limited, and acknowledgment of technology interaction is almost nonexistent.

Science is what you do know; philosophy is what you don't know.

-Bertrand Russell, n.d.

CHAPTER III: PHILOSOPHICAL DELIBERATIONS

An element of nursing scholarship and a dissertation requisite includes a reflection on the philosophical assumptions of the primary investigator (PI). It is also advised that the philosophical orientation during the development of a scientific inquiry be acknowledged (Reed & Shearer, 2017). A discussion of the PI's philosophy of nursing as it pertains to this study was divided into three sections: 1) The Discipline and Science of Nursology, 2) Philosophical Views and Other Nursology Considerations, and 3) Framework Guiding this Study's Scientific Inquiry. Chapter III is the foundation for and precedes the study's methodological considerations discussed in detail in Chapter IV.

The Discipline and Science of Nursology

More than 25 years after the initial recommendation to update the name of the nursing discipline (Paterson, 1971; Roper, 1976), it was again suggested by (Reed, 1997) that perhaps it "may be time in nursing history to consider renaming the discipline to something other than a verb, to better distinguish the disciplinary label from the substantive focus of the science and practice" (p. 79). The terms "nurse" and "nursing" have been confounded over the ages. It is not uncommon to consider "nursing" as providing some form of direct care. Case in point, skilled nursing care is provided in assisted living homes by direct care workers (Han et al., 2017), and skilled nurses provide "personal care and concern" (Barrett, 2017, p. 129).

To add to this role confusion, some aspects of nursing science may be eroding because of the continued encroachment of others trying to make away with nursing's body of knowledge.

Though rarely discussed in nursing literature, many of today's health professions are descendants of nursing science. Referred to as the "giveaway program" (Peplau, 1965, p. 273), examples include physical therapy (Moffat, 1996; Pettman, 2007), respiratory therapy (Weilacher, n.d.), dietetics and social work (Peplau, 1965). Nursing science is forfeiting its domain of practice and ways of caring.

Finally, the words we use matter (e.g., pronouns), and their meanings evolve as society evolves. The world was recently reminded of this as we began coping with our first pandemic in over a hundred years. The term "COVID-19" is a current and accepted term used to identify the virus. In less than a year, several words and phrases have been used to identify the pandemic virus. Accepted examples include "coronavirus" and "SARS-CoV2-2." In addition, other descriptors were used that were later considered pejoratives. As a "metanarrative that shapes the broader scientific community understanding of human beings" (Reed, 1995), and as both a science and an art (Peplau, 1988), *nursology* has a unique, multi-faceted body of knowledge and a distinctive approach to thought (Fawcett, 2019; Roper, 1976; Fawcett, 2019).

For example, *nursology* values observation to learn and advocates self-awareness through the practice of self-reflection (Peplau, 1954; Field, 1979; Halloran, 2016; Crowell, 2016). The time for a semantic and lexical update of the descriptor "nursing" is overdue. Employing the descriptor "nursology" is viewed as a discipline-specific, scientific enterprise. By its "very nature *nursology* emphasizes the disciplinary field of study that informs nursing practice" (Falk-Rafael, 2018). It also assists the public in differentiating nurses from other healthcare providers (Barrett, 2017) and gives credit where credit is due. Using the term *nursology* as the name for a basic scientific discipline is especially important during our ever-rapid change and continued

disruption of healthcare delivery systems (Fawcett et al., 2015) and continued attempts to make away with our profession (e.g., Registered Care Technologists). Nursology is what professional nursing practice is supposed to be. For this study, the DCWs are asked to reflect on their practice, with an emphasis on learning and technology interests and needs.

Philosophical Views and Other Nursology Considerations

Whether the issue is ethical, research-oriented, or practice-oriented, a philosophical foundation provides instruction concerning the nature of research and the world in general (Silva, 1977). Nursology's diverse perspectives are derived from many areas of interest that provide the foundation for research and practice.

The philosophy of nursology is interested in the justification and scientific development of the nursing discipline. As a profession and practice discipline, nursology has an ethical obligation to increase awareness and to sort out essential aspects of the human experience (Thorne, 2016). Nursology's philosophical perspectives often assist with understanding nursology's science, practice, and how we see things (i.e., reality). They are often broadly grouped into two paradigms: epistemological and ontological.

Included in this discussion is an overview of epistemology concepts relevant to this scientific inquiry: patterns of knowing and Intermodernism. Next, a discussion of ontological inclinations that impact a discipline, how personal ontological beliefs influence the selection of a philosophical perspective (i.e., intermodernism), and how these decisions culminate to form a custom-fit of science and philosophy.

Epistemology

A philosophy branch that focuses on the justification of knowledge is epistemology (Audi, 2005). Nursology's epistemological attitudes are wide-ranging (Fawcett et al., 2015) and usually motivated by the "nursing processes that promote well-being" (Reed, 2011, p. 18). Epistemological interests are concerned with the origin and complexity of knowledge (Schultz & Meleis, 2004) including the breadth and depth of knowledge development (e.g., patterns of knowing that inform) (Chinn & Kramer, 2015), how knowledge is structured and how it validates its knowledge claims (Schultz & Meleis, 2004), the methods used during discovery (Chinn & Kramer, 2015), how it knows what exists (Bender & Holmes, 2019), how epistemology affects research (Creswell, 2003), and how knowledge is accepted within a discipline (Reed, 2018). Nursology's epistemology ideally should involve *praxis* (e.g., the practice of art, science, & skill).

Praxis

Praxis has several definitions. Sometimes nursing *praxis* involves the coming together of practice and research as part of the same act (p. 40) in "mindful action" (p. 43) (Rolfe, 2006a, p. 40 & 43). In simpler terms, *praxis* is the decision of how to use knowledge or research effectively (Reed, 1995). A practicing nurse researcher will often encounter two distinct options concerning the use of a newly acquired knowledge (Ford & Profetto-McGrath, 1994; Varcoe, 1997). The nurse researcher could appreciate this new enlightenment, internalize it (e.g., self-reflection), and then effectively meld it into their current methods of practice (Varcoe, 1997). Thus, maintaining the "status quo." Or alternatively, and more revolutionary, the new knowledge may be used to free the nurse researcher from current practices and allow for the development of

diverse methods (Varcoe, 1997). Both examples are “reflections-in-action” (Rolfe, 1993), however the second option is obviously the more radical of the two and could, and often will, involve sweeping changes in methods of practice.

Wrapped up in these cognitive ways of knowing and knowledge and research are the concepts of truth, belief, and justification for action or inquiry (Audi, 2005; Steup, 2001). They are categorized into two broad categories: patterns of knowing and philosophical views.

Patterns of Knowing

As a basic science discipline (Barrett, 2017), the knowledge domain of *nursology* continues to develop and expand through distinguishing ways of thinking (Thorne, 2020). Commonly referred to as fundamental patterns or *ways of knowing*, they are not mutually exclusive (Silva et al., 1995, p. 261) but are interrelated and, when possible, should be practiced in unison. They also continue to expand and include personal, empirical, ethical, aesthetic (Carper, 1978), unknowing (Munhall, 1993), sociopolitical knowing (White, 1995), and emancipatory knowing (Chinn & Kramer, 2015).

Intermodernism

Specifically intended for nursing, *intermodernism* is an “emerging philosophy of nursing science” (Reed, 2019b, p. 21), and it is amenable to sudden and unexpected knowledge additions that can originate from diverse origins. Intermodernism is pluralistic and pragmatic, valuing the contributions from varied knowledge influencers such as personal beliefs, life experiences, demographic makeup, and socioeconomic evidence (Reed, 1997). An intermodernist viewpoint supports nursing’s acceptance of the value of traditional scientific-

only practice development, while including the value of nursing's traditional humanistic and holistic roles.

Intermodernism offers a large toolkit of discovery (Reed, 1995). Validating knowledge includes both subjective and objective data (Reed, 2018). The intermodernist approach does not treat science and other means of knowledge acquisition as antagonists (Reed, 2011); still, it accepts contributions from diverse directions. Reed (2018) notes that when it is recognized and accepted that human beings are integral participants in their healthcare experience, this opens and expands the view of empiricism, and this is the effect of Intermodernism.

Ontological Inclinations

Reed (2011, p. 7) defines *ontology* as “the nature of being (human) and what is considered real and relevant” (to a discipline). Ontological inclinations are complicated by society's rapid state of transformations (Friedman, 2007; Friedman, 2016). In the next three decades, our lives will continue to be dominated by new technologies that have yet to be invented or even imagined (e.g., cognified healthcare, artificial intelligence, virtual reality, global connectivity) (Kelly, 2016). Furthermore, decisions concerning nursing's ontological beliefs (e.g., worldviews, theories) as a means to develop a reality awareness is likened to having to decide a favorite music genre. Nursing has several ontological views to select from, but these views are not static and often shift depending on the situation and an individual's disposition or interest. Determining ontological best-fit imperatives is dependent on research interest and professional wisdom and is also impacted by heritage, gender, culture and morals, earlier experiences, knowledge, feelings, and nursing practice (Reed, 2011).

Ontological Challenges

Audi (2005) indicates that historian and philosopher Thomas Kuhn would most likely disagree with my flexible, fluctuating, multiple-ontological perspective, perhaps even suggesting that my ontological beliefs are indecisive and an exemplar and a reflection of a discipline experiencing a “period of scientific unrest” (Meleis, 2012, p. 428). Kuhn’s writings suggest that he would assert that my worldview conflicts were because nursing’s status as a bonafide scientific discipline had not arrived.

However, I do not subscribe to Kuhn’s revolutionary theory of scientific progress (1962 circ.) that suggests nursing’s scientific body of evidence does not warrant nursing as a basic scientific discipline. Our discipline-specific knowledge is supported by funding institutions (NIH) and a cadre of nursing scientists and nursing PhD programs. There is a unique interrelationship between nursing’s science, practice, and care (Reed, 2011) that is worth making the most of. Nursing is a basic science, and the art of nursing is using that knowledge (Barrett, 2017; Fawcett, 2018).

Doubting Thomas. As a *Doubting Thomas* of grand theories, the *middle* perspective, intermodernism proposed by Reed (2020, p. 39), seems to fit my pragmatic and “pluralist views of scientific phenomena.” As a practice discipline and human science, nursing often strives to understand the world from the insider realm (e.g., patient, client, participant). This is viewed as the core of nursing (Peplau, 1965) because the nurse is often in close proximity to the patient(s), their family members, and their community. This proximity is a rare and valued privilege to observe the complexity of human behavior patterns and their integrated objective and subjective experiences (Reed, 1997). The knowledge of nursing pertains to the inherent

human process of well-being, manifested by complexity and integration in human systems (Reed, 1997).

Nursology, Theory, and Intermodernism

Nursology is viewed as a domain-derived, scientific knowledge discipline developed by nurses for professional nursing practice (Roy, 2019). A central component of nursing knowledge is theory (Reed, 2011). Nursing theory often uses the scientific process that many consider to be the greatest invention in the past 200 years (Kelly, 2016). Theory-directed scholarly inquiry and the practice of nursing should work together and complement each other, while supporting scholarly inquiry as practical reasoning (Cody, 2006).

In support of this perspective, the intermodernist approach permits a much broader acceptance of nursing's wisdom additions and scientific design considerations, offering a *custom-fit* during a theoretical inquiry with the prospect for fruitfulness (Reed, 2011b). Since knowledge is created, for a system using intermodernist thought in multiple ways, this knowledge will always be open to critique.

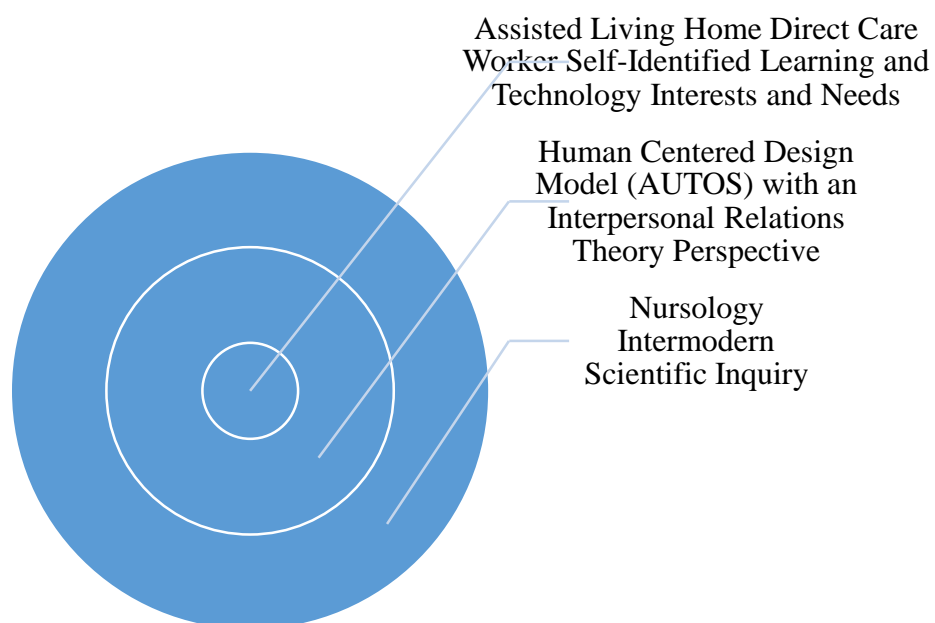
Framework Guiding this Study's Scientific Inquiry

The complexity of humans and their interactions with technology create a need for structure (e.g., models, frameworks, & approaches). A structure also assists in directing attention to improve understanding of the concepts used to organize this scientific inquiry. Often, structures may provide an image of the interrelated concepts, and occasionally, structure adds insight to identify human factor influences and *situational awareness* (SA) (Boy, 2011). A midparadigm approach was used to bring together context-relevant concepts during knowledge development (Reed, 2020). Figure 2 provides a simple visual schematic that organizes the

conceptual structures of this study's area of inquiry.

Figure 2

The ALH DCWs' Technology Interests and Needs Midparadigm Prismatic Model



Note: Figure 2 was adapted from Litzzen, C.O., Langley, C.A., and Grant, C.A. (2020). The Prismatic Midparadigm of Nursing. *Nursing Science Quarterly*. 33(1), 41-45. doi: 10.1177/0894318419881806.

Conceptual Framework

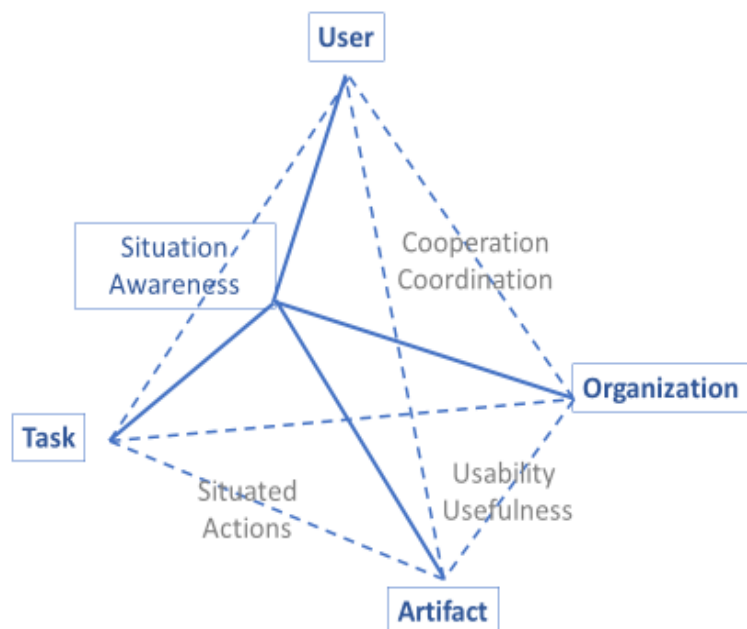
Theory has many definitions, but many agree that theory should guide practice (Cody, 2003). Chinn's (2014, p. 1) definition of theory was carefully chosen for this study: "theory is a vision – a mental construction of what could be ... in nursing they provide a roadmap, a path to follow in shaping human experience toward wholeness and well-being." This scientific inquiry used a conceptual framework with components adapted from a classic and well established nursing theory and human factors-machine framework to provide a roadmap to generate knowledge of a population of caregivers about which little information is available. The

conceptual framework used in this study was designed with the aim of conceptual exploration and exploitation.

To support the fit and relevance of this inquiry, a human factor framework developed by aeronautical engineers at NASA (Boy, 2011) guides content of the inquiry. An interpersonal relation theory (IRT) perspective (Peplau, 1952) was applied to encourage DCWs to self-identify learning and technology needs and interests during this scientific inquiry. The application of concepts of a well-established nursing theory (e.g., Peplau's Interpersonal Relational Theory) added a level of attention to detail and focus (e.g., interpersonal & intrapersonal) during encounters with study participants. Whereas the human factors model offers a systems approach and a level of detail to guide the inquiry.

Figure 3

Human Factor Components of the AUTOS Pyramid



Note: Human factor components are from Boy, G. (2011). Found in *The Handbook of Human-Machine Interaction. A Human-Centered Design Approach*. Ashgate Publishing Limited, Burlington, VT.

AUTOS Framework

The term *human factors* (HF) evolved from the science of ergonomics and out of the need to improve the human/machine relationship (Boy, 2014). Understanding HF offers valuable insights (i.e., human science) to better understand users' needs, constraints, requirements, and how they may relate to technology products (Boy & Riedel, 2009). Human factors emphasize people instead of only technology. A model that emphasizes the user and context to identify HF barriers and facilitators is the *AUTOS Framework* (Figure 3). Not particularly theoretical, the Artifact, User, Task, Organization, Situation (AUTOS) framework does offer a conceptual structure and an option to triangulate concepts expediently and methodically, allowing for brainstorming of interrelated parts that are not necessarily linear and may be impacted by perspectives (Reed & Shearer, 2011) to identify HF complexities (Boy, 2011). For example, the AUTOS 5-dimension framework (i.e., artifact, user, task, organization, & situation) provides the structure for identifying and describing HF of the DCW working in the small ALH setting in Arizona. The AUTOS pyramid is an extension of the AUTOS Tetrahedron. Each vertex (point of intersection) offers a means to consider HF.

Artifact

The *artifact* is defined as the technology or an interaction device(s). Artifacts may include a cell phone, iPad, laptop, or desktop computer that the DCW may use to access another artifact (e.g., internet) that could proceed to an online synchronous educational intervention utilizing a software technology such as Zoom Pro (i.e., artifact: internet access software). Often, hardware and software ecosystems may constrain a user interface and should be anticipated and assessed before a formal learning experience is attempted online. Human factor concerns might

include the following questions: Does a DCW have access to the Internet (artifact) to connect with Zoom Pro (artifact) with their technology(s) (artifact(s), and do they (the user) feel comfortable and are they able to participate and communicate in real-time?

Users

Users (ALH DCWs) and their complexity factors will always impact the user experience. It is vital to grasp the needs, interests, requirements, and constraints that users may have to contend with learning and technology. User factors include human, cognitive, social, and cultural influences (Gurman, 2012). Little is known about this DCW population. When not much is known about a population of interest, a prudent option is to query those who are the right users. An example of “right users” is those DCWs that express interest in learning. Human factors questions related to access and technology (artifact) considerations include: Does the DCW (user) have access to the necessary hardware (artifact) and technology? Using AUTOS to understand user experience complexity is the intersection between the user, the computer used to access (artifact), and the online class engagement (task). User complexity (i.e., potential barriers) is of interest if the *user* performing the tasks is part of a population group that does not often engage with work-related educational events (situational).

Task

The *task* involves using technology to complete the steps involved with participating in an online educational event. Typically, the steps of the task involved with using the technology include both software and hardware. A user task example is the process of signing up for a class, logging on to the online EI, and then participating in class discussions and post-survey polls. The *organization* includes the interaction between users and technology. An example of organization

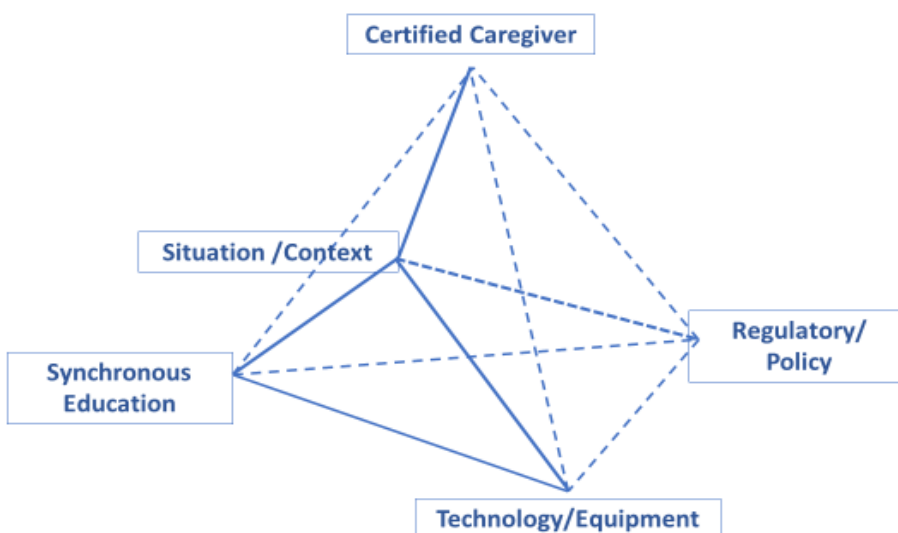
and user complexity (i.e., potential barriers) is the use of a cell phone or computer (artifact) and how well the technology tasks are completed (e.g., signing on to Zoom) by students (situational) that are enrolled in the online class.

Situation

Situation (not part of the original AUTO tetrahedron) offers a similar “*dimension.*” It is located between the user and task and is identified as the situation (Boy, 2011). An example of the situation is a setting scenario between the user and task that focuses on the complex aspects of the task and the user (Boy, 2011). The aim is to direct an awareness of the dynamics (planned and unplanned) of the situation to anticipate the relationship(s) between situation, task, and user(s) (Boy, 2011). An example of this is inquiring if there is Internet access in some ALH households that is available to the DCW to access for an educational event (Figure 4).

Figure 4

The ALH DCW Situational Awareness Model



Note: The AUTOS HF Model (Boy, 2011) was adapted to leverage the dynamics of the ALH environment (DCW roles and responsibilities, technology, and equipment use, resident characteristics, and organizational impacts [e.g., policy and DHS regulations]) as a means to understand from the perspective of the DCW. Found in *The Handbook of Human-Machine Interaction. A Human-Centered Design Approach*. Ashgate Publishing Limited, Burlington, VT.

Adding Process (Interpersonal Relations Theory [IRT]) to Context (AUTOS)

Understanding the perspective of another was emphasized in Peplaus (1952) interpersonal relations theory (IRT), especially when first establishing the interpersonal relationship between the nurse and patient. This dynamic of “interpersonal” has similarities to *human-centered* (Boy, 2013), this outward emphasis or *focus on another* (i.e., the user) has recently been realized by engineering. In fact, *human factors concepts* (user, situation, context) are similar to nursing concepts (person & environment). Another similarity between HF and nursing is that theorists from both disciplines (Boy, 2017; Peplau, 1952) recognize that collaborative problem-solving efforts should involve those that it impacts (e.g., user, patient, research participant), and that the complexity of systems and *knowledge development* is best achieved during situation-discovery (Boy, 2017; O’Toole & Welt, 1989).

Peplau’s Interpersonal Relations Theory

“Nursing practice captures two essential elements encountered in nursing: subjective experiences and the context-bound complexity and uniqueness of each nurse-client encounter” (Cloutier et al., 2007, p. 6). However, the great majority of nursing theories observe only the processes that impact the patient. The more unconventional aspect of Peplau’s theory is that it stresses the interpersonal processes that occur between the patient and the nurse (Forchuk, 1993). To facilitate participation between the PI (principal investigator) and the research participant during knowledge development (Reed & Shearer, 2011, p. 99), a portion of an existing nursing theory (e.g., orientation phase) was selected to make the most of the AUTOS Framework and the interpersonal relationship between the PI and the study participant. The advantage of using a portion of a well-established nursing theory is that it supports identifying discoveries of the

DCW experience that pertain to this study's research inquiry (e.g., to understand the why, what, & how) (Reed & Shearer, 2011, p. 99). Hence, the integration of theory (i.e., IRT) during this scientific inquiry represents both the application of knowledge and knowledge development (Reed & Rawnsley, 2000).

Historical Background

Dr. Peplau's theory (i.e., interpersonal relations theory) and interrelated concept development was based on her nursing practice (Reed, 1996). Peplau (1952, p. 8) viewed the nursing process "as a maturing, educating instrument nurses develop experiences that promote constructive learning." Dr. Peplau's writings realized the importance of understanding and involving the participant from their perspective (Martin et al., 1992). Dr. Peplau was one of the first nursing scholars to apply a 'humans first' viewpoint (O'Toole & Welt, 1989; Peplau, 1994b). In a biography (Callaway, 2002) examples of Dr. Peplau's early years as a psyche nurse provide insight into how she facilitated the transition of practice knowledge into nursing knowledge. Many of Dr. Peplau's professional writings offer insights and examples of personal knowing theories (Fawcett, 2018) specifically, the interpersonal relations concepts that convey human caring (Fawcett, 2018).

Environment

In Dr. Peplau's original publication (circ. 1952), the environment was not directly addressed, but many believe it was tacitly present (Comley, 1994). In 1997, Dr. Peplau suggested that environmental forces (outside the organism) were increasingly impacted by social, cultural, and technological connectedness. Later the context of the nurse-client relationship (e.g., interpersonal relations) was viewed as the environment by some (Forchuk, 1993). Dr. Peplau

(1997, p. 163) expressed concern that, as a result of continued technological innovations in the environment that are rapidly transforming our world and introducing new innovations into nursing practice, human relationships will be even more essential.

Application of Interpersonal Relations Theory

Dr. Peplau (1965, pp 273-274) viewed interpersonal relations as the core or heart of nursing. Understanding interactions between humans is a nursing skill, and it requires an authentic human-to-human framework (Forchuk, 1993). Dr. Peplau's interpersonal relations theory (IRT) promotes an inclusive and involved form of participation during the relationship between human beings (i.e., nurse & patient or PI & research participant) (Peplau, 1987).

Applying interpersonal relations (e.g., social interaction & human relations) (Peplau, 1994, p. 9) during this scientific inquiry promotes sharing information, leading to interpreting data and integrating information. This knowledge leads to understanding (Nelson, 2002).

The IRT initially had three phases that slightly overlapped (e.g., orientation, working, termination) but encouraged the development and comprehensive form of relationship building and participation during the therapeutic process (Peplau, 1952). For this study, only IRT's first phase, orientation, was used to exploit situational awareness and other HF considerations.

Orientation Phase

For the relationship and connection of the nurse (PI) and the (research) participant to be positive and trusting, there must be a successful orientation of the participant (Simpson, 1991). During the initial introductions, the nurse establishes structure and boundaries (e.g., the purpose, time involved, notetaking, confidentiality, & place of interview) (Field, 1979). Providing structure adds a level of predictability. Embedded in the orientation phase is the nurse-participant

experience that requires the nurse to use self authentically and to use self therapeutically (Brewer & Watson, 2018). The orientation phase promotes and guides nurses to focus on “*intouchness*” with the participant as a means to understand the situation and “*structural aspects of the situation*” from the participant’s point of view (Peplau, 1994b). The initial meeting in the orientation phase can vary from a few minutes to months of regular sessions (Forchuk, 1993, p. 9).

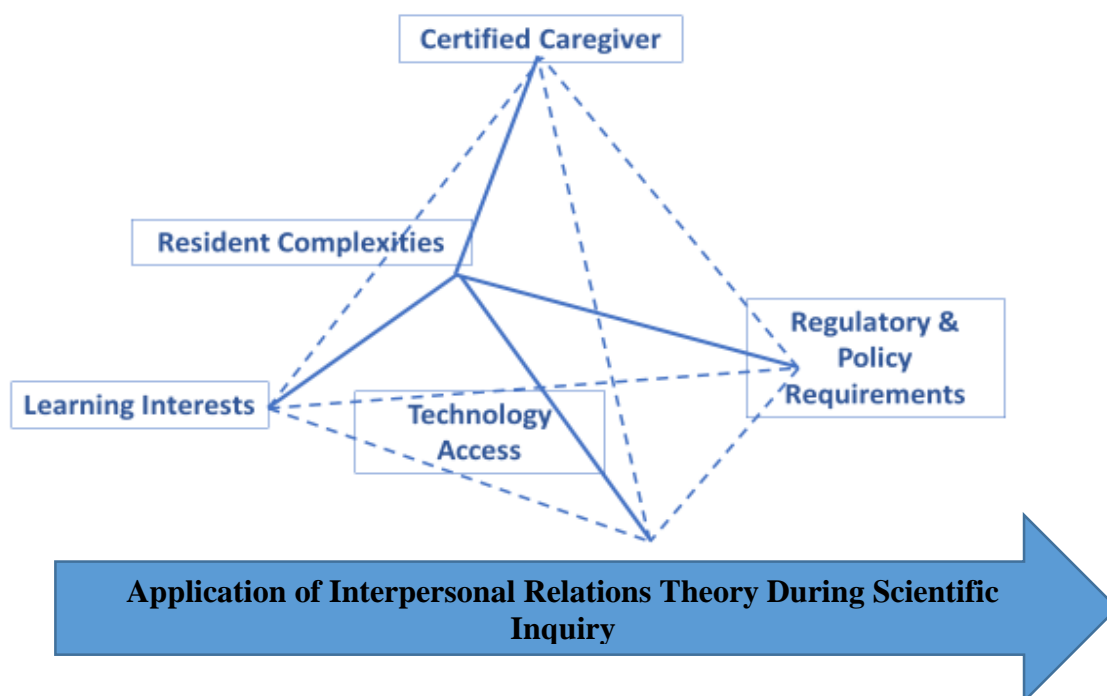
Acquiring Knowledge. Dr. Peplau presented a paper at the Council of Hospital Services (circ. 1965), during which she identified five professional nursing characteristics that impact interpersonal relations. These five characteristics have relevance during the orientation phase of participant interviews because they help understand the interaction between the participant and the PI (Peplau, 1994). They include: 1) *Focusing on the participant* and exploring their learning and technology needs and interests, including how their needs and interests are impacted by their situation (i.e., AUTOS); 2) *Observing the participant* during the interview process. This includes the PI acknowledging both the participant’s and the PI’s behavior during the interview exchange (Peplau, 1994). Gestural messages include body posture and gestures; 3). *Acknowledging the roles* the participant is casting on the PI during the interview process. This awareness helps the PI become aware and evaluate their role(s) during the orientation phase; 4) *Investigative activities* during the participant interview include collecting data, asking questions, observing, and following up on remarks (Peplau, 1994); and 5) Dr. Peplau (1994) identified this as the most important characteristic of professional nursing, *using theory to improve practice*. Components that impact theory development include interpretation of raw data and observations. Over time,

event descriptions emerge from the data and, eventually, inferences are validated and finally concepts emerge.

Empathetic Communication. During the first phase of IRT, the emphasis is placed on identifying areas of interest and need using empathetic communication to illicit the DCW's point of view. The PI is viewed as the data gathering instrument (Suter, 2011) and uses self in therapeutic ways (Peplau, 1952). During IRT, investigative activities include empathetic communication that may initiate a trusting therapeutic relationship (Forchuk et al., 1989). Empathetic communication is described by Peplau (1987, p. 203) as "*to feel in oneself the feelings being experienced by another person in the same situation.*" Examples of humanistic qualities include authentic, acknowledging, and empathetic actions (verbal and nonverbal body gestures) (Peplau, 1987; Reid Searl et al., 2014). Figure 5 offers a situational awareness framework used while applying an IRT perspective to explore the learning and technology needs and interests of the DCW.

Figure 5

Application of IRT During an Exploration of ALH DCW



Note: The IRT offered direction and interviewing techniques, sometimes referred to as an *investigative approach* (Field, 1979), during participant interaction. These “approaches” include interview techniques, observations, self-appraisal, and reflection junctures (e.g., recruitment activities, post-participant interviews and data analysis) were used throughout the research process.

Summary of Chapter

Pragmatist and philosopher, Charles Sanders Peirce, wrote about how “belief guides action, and inquiry is always dependent on beliefs” (Audi, 2005). This quote exemplifies the purpose of Chapter III, by offering a discussion of the epistemological and ontological beliefs and assumptions as they pertain to the study’s philosophical and theoretical underpinning, which were used to direct the discovery process and subsequent findings of this study using a conceptual framework to guide the scientific inquiry: *what are the self-identified learning and technology interests and needs of the direct care worker, working in the assisted living home?*

Research aims and questions are not divisible by method but rather by the knowledge sought, and that any research purpose or questions might be addressed by diverse research methods.

- Margarete Sandelowski, 2018, p. 366

CHAPTER IV: METHODOLOGICAL CONSIDERATIONS (METHODS)

Chapter I focused on this study's area of interest and the subsequent research question; a review of the literature was presented in Chapter II; Chapter III included the PI's philosophical views and this study's conceptual framework (i.e., Human Factor Interpersonal Relations Framework); Chapter IV contains the methodological considerations involving the mode of inquiry selection. The coherence of these pursuit-of-knowledge decisions (Chapters I, II, III, IV) offer insight into this study's research decisions (Crotty, 1998; Morse et al., 2002; Van Manen, 1990). These pursuit-of-knowledge decisions were significant because "*developing a coherent methodology by linking the methodological decisions to the desired outcome holds out the best hope for answering the research question*" (Woolley, 2009).

Guided by the research question: *what are the self-identified learning and technology interests and needs of the direct care worker working in the small, assisted living home*, this chapter's methodological discussion focuses on the mode of inquiry decisions. Chapter IV organizes into six sections. The chapter begins with a discussion of the research design, followed by the considerations that involved the sample, recruitment process, data collection, data analysis, ethical considerations, strategies that assisted with maintaining trustworthiness throughout this study, including a reflective prologue. Human subject protection considerations are strongly stressed in the ethical consideration section and interspersed throughout this chapter.

Research Design

The selection of the research design is a pivotal point because it necessitates “logic” and “fit” with the study’s purpose and question (Doyle et al., 2020; Flick, 2018a; Keele, 2010; Miller, 1986) while complementing what is already known and not known about the ALH DCW (Creswell, 2013; DeGroot, 2012). Often these philosophical perspectives can be traced back to what is previously known about the area of interest (Curry et al., 2009). The considerations and opinions of the PI (Wyles) about the topic of interest also influenced the selection of the research design (Creswell, 2003; Rubio et al., 2014).

Research Design Selection

The selected research design is influenced by the underlying philosophical knowledge claims and assumptions (Creswell, 2003; Morse et al., 2011; Palinkas et al., 2015). These philosophical perspectives provide the focus for acquiring knowledge (Reed, 2018), and influence the kind of data that is collected, how the data are analyzed, and how the data are interpreted (Creswell, 2013). While there is not a consensus regarding the philosophical underpinnings of quantitative and qualitative research methods (Bryman, 1992; Murphy et al., 1998), generally, quantitative research is often aligned with positivistic assumptions (Creswell, 2003; Guba & Lincoln, 1994; Newman & Benz, 1998), whereas qualitative research is frequently aligned with having theoretical origins in interpretivism and naturalistic philosophies (Beuving & de Vries, 2014; Lincoln & Guba, 1985; Merriam & Tisdell, 2016b).

Well-defined areas of research tend to gravitate toward more structured (Kahlke, 2014) quantitative design methods (Greenhalgh & Taylor, 1997; Polit & Beck, 2012) that are selected for testing theory and models (Murphy et al., 1998). These methods underscore generalizability

(Palinkas et al., 2015) and hypothesis testing (Huston & Rowan, 1998). To be successfully analyzed statistically, the obtained data from many quantitative study results must be reduced and standardized to make them compatible statistically (Beuving & de Vries, 2014). Using fixed measurements (Beuving & de Vries, 2014), quantitative analytical objectives typically quantify variations, predict causal relationships, or describe population characteristics (Keele, 2010).

Conversely, when little is known about a complex phenomenon, it is often investigated using qualitative methodologies (Munhall, 2012; Patton, 2015; Sandelowski, 2000). Though qualitative modes of inquiry vary (Wolcott, 1994), they share a similar goal in that they are designed to arrive at an understanding of a particular phenomenon and interpret it from the perspective of those experiencing it *without manipulation* (Creswell, 2013; Dowling, 2000; Lincoln & Guba, 1985). Qualitative approaches offer more flexibility (Kahlke, 2014) when acquiring knowledge (Creswell, 2013). These approaches are used to acquire knowledge by studying what can be observed from the viewpoint of the person under study (Schmid, 1981). The approaches often emphasize the concept of data saturation (Palinkas et al., 2015) and hypothesis-generating (Huston & Rowan, 1998). The insights from qualitative inquiries provide an understanding of a person's experiences, perceptions, interpretations, interpersonal relationships, and behaviors (Creswell, 2013; Huston & Rowan, 1998).

Rationale for Selecting Qualitative Descriptive Methodology

The research design selected as the best fit to generate knowledge for this inquiry was qualitative description (QD) (Hsieh & Shannon, 2005; Sandelowski et al., 1997). Specifically, the QD design was selected because little is known about DCWs working in the small ALH environment (Kelly et al., 2018) and even less information is available concerning the DCW's

perspective on whether the DCW has technology availability or an interest in participating in educational events concerning their workplace skills.

Phenomenon Discovery Through Description. A strength of QD is that it helps the researcher develop a clear and thorough understanding (Miller, 1986) by exploring and describing the phenomena of interest from the participant's perspective (Munhall, 2012; Sandelowski, 2010). This research method is often viewed as a flexible and inductive mode of inquiry (Adu, 2019; Lincoln & Guba, 1985; Strauss & Corbin, 1990), favoring description over interpretation (Kahlke, 2014; Lambert & Lambert, 2012). Through detailed description (Schreier, 2013, p. 5; Morse, 2015) and direct quotation, QD emphasizes both "*depth and detail*" (Patton, 1980; p. 22). As a low inference description methodology (Sandelowski, 2000); Sandelowski, 2010), QD emphasizes discovery and understanding by using *who, what, and where questions* (Neergard et al.; Sandelowski, 2000).

By staying close to the literal description (Bradshaw et al., 2017), the desired outcome of this study was to pragmatically and comprehensively summarize the viewpoints and thoughts of the DCW (Kahlke, 2014; Neergard et al., 2009) while using the common language and the perspectives of the DCW (Patton, 2015; Sandelowski, 2000) "as if they were not under study" (Sandelowski, 2000, p. 337). The collection of personal experience narratives and observations within the natural environment of the DCW permitted the PI to stay close and immersed in the data (Chenail, 2011a; Neergard et al., 2009; Patton, 2002) while offering a "firm descriptive base" (Murphy et al., 1998, p. 79). This proximity assisted with acquiring insights and informational content wherein, presently, little is known or understood about this study's area of

interest (Sandelowski, 2000; Polit & Beck, 2014; Kahlke, 2018), *the learning and technology needs and interests of the direct care worker, working in the small, assisted living home.*

Philosophical Undertones. While qualitative description is not committed to a pre-existing philosophy (Emden & Sandelowski, 1998; Flick, 2018a; Lambert & Lambert, 2012), it is not theory-free (Guba & Lincoln, 1994; Murphy et al., 1998; Sandelowski, 2000).

Philosophically, QD is often associated with critical theories and constructionism that apply a naturalistic “paradigm of inquiry” (Guba & Lincoln, 1982) and interpretative methods (Lincoln et al., 2018). Though QD is not overtly theoretical compared to other qualitative research methods (Kahlke, 2014; Maxwell, 1992), using a deeply theoretical context was not a fitting approach to answer the study’s research question (Doyle et al., 2020).

Finally, intending to eventually develop an education intervention (EI) using a technology platform, QD is often the preferred methodology for “expanding the evidence base for practice” (Sandelowski & Leeman, 2012, p. 1404) and intervention planning (Lobo, 2005; Neergaard et al., 2009; Sandelowski & Barroso, 2002). Qualitative description offers a greater level of creativity (Patton, 1980; Patton, 2015; Suter, 2011), and because of this, although some researchers consider QD an unconventional approach, others believe it is fundamental (Crabtree & Miller, 1991).

Sample

It is generally accepted that sampling decisions impact research results and the quality of findings. This study’s sampling ambition was to have an *informationally representative* sample (Sandelowski, 1995) that answered the research question. Recruiting a varied group of DCWs offers diverse and information-rich perspectives on the topic of interest (Neergaard et al., 2009).

The aim was to have differences and similarities within the sample (Sandelowski, 1995). Sampling decisions included identifying parameters for when to stop data collecting and then document how the process to stop gathering data was determined (Carlsen & Glenton, 2011). Sampling decisions were organized into four sections: (1) Target sample population, (2) Sampling guideline (sampling inclusion criteria), (3) Sample recruitment process (recruitment materials and recruitment communication during recruitment), and (4) Sample size and data saturation (saturation, innate personal bias).

Target Sample Population

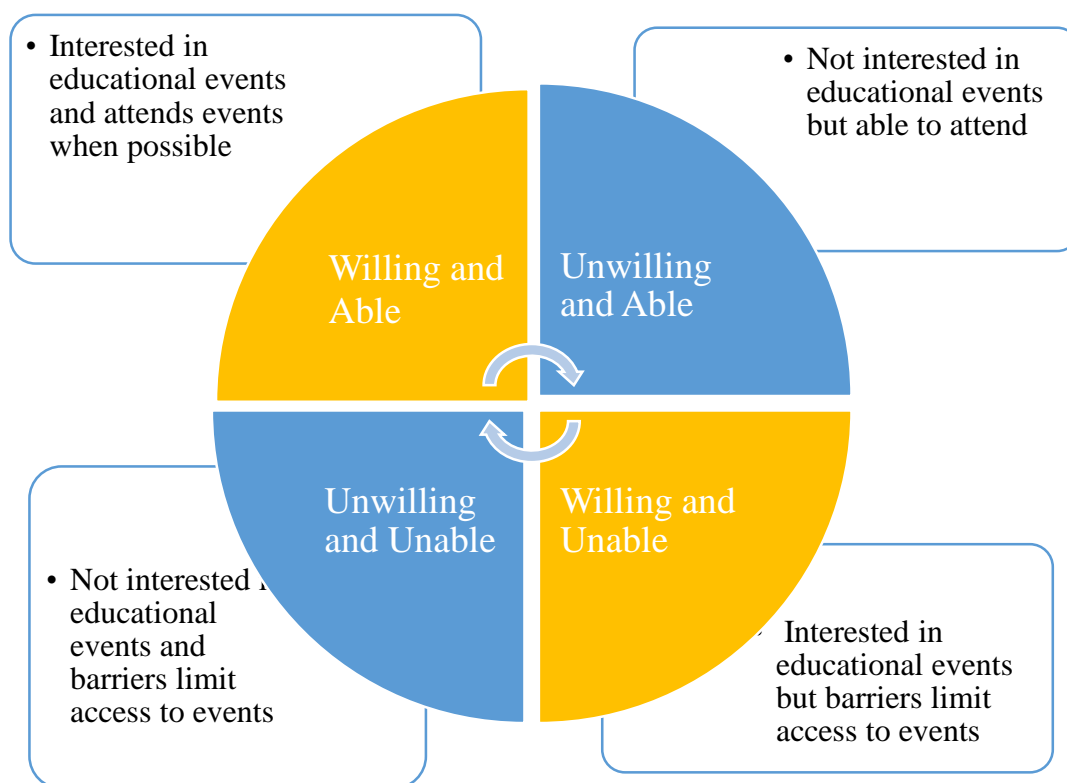
This study used a sampling framework to guide informed participant recruitment choices (van Rijnsoever, 2017). Desired study participants were DCWs working in ALH settings interested in learning or attending work-related educational events. It was anticipated that prospective participants would self-select into two categories: (1) participants with interest in DCW educational events who would participate in these events (willing and able), or (2) participants with interest in DCW educational events but barriers would make it difficult or impossible for them to attend (willing & unable). Because of this, the predetermined sampling framework used a deliberate (Moser & Korstjens, 2018) nonprobability, purposive approach that helped inform this study's central interests (Creswell et al., 2011). Figure 6 is a visual representation of the desired participants sought in this study.

Initially, study participants were recruited in the geographical area of Pima County, Arizona, located in Southern Arizona, with approximately 478 ALHs (AzDHS, Residential Facilities Licensing, 2018). The sampling data source was conservatively estimated at 948 DCWs working in small ALHs. While it was recognized that some of the direct care might be

provided by ALH direct care managers, this subpopulation was avoided in recruitment activities. The population of interest was difficult to reach, making it necessary to recruit and expand to other Arizona counties (e.g., Yavapai & Cochise Counties) (Tuckett, 2004).

Figure 6

Sampling Frame Identifying Prospective Study Participants



Note: Adapted from Australian Government Department of Education, Employment, and Workplace (2010). *Educators Belonging, Being, & Becoming. Educators' Guide to the Early Years Learning Framework for Australia.* Commonwealth of Australia, <https://docs.education.gov.au/documents/educators-guide-early-years-learning-framework-australia>.

As this study progressed, the PI's understanding deepened during data collection and analysis. Acknowledging that the study participants might be interested in this subject and often might have similar backgrounds and experiences, response commonalities were expected to surface. These similarities might have narrowed the range of sample variation and perspectives.

Patton (2002, p. 273) suggests this would have necessitated that the sampling guideline be expanded *as a means to provide meaningful variation within the sample and information-rich cases supporting this study's purpose*. The use of additional sampling strategies included several network sampling methods (aka chain referral) (Bernard et al., 2017, p. 53), including snowball and convenience sampling. Snowball sampling includes word-of-mouth referrals by study participants (Miller, 1986). Convenience sampling, interviewing several DCWs working in the same ALH, was limited to encourage care setting variation.

Alternate paths (sometimes called shadow data) were also used to discover new information to aid in understanding already collected information (Morse, 2015). Examples of shadow data included the PI attending classes related to the subject matter; reviewing the Arizona Department of Health Services, Arizona Board of Nursing Care Institution Administrators, and Assisted Living Facility Managers documents; and contacting *knowledgeables* (e.g., informants, experts), most likely to know the information that could be used to clarify or augment the understanding of the data collected (Morse, 2015; Patton, 2015).

Sampling Guideline

A maximum variation made heterogeneity preferable to identify common patterns across a diverse sample (Patton, 2015). A sampling guideline was developed to be flexible, directing the study's recruitment while encouraging different participant perspectives (Moser & Korstjens, 2018; van Rijnsoever, 2017). In addition to maximizing the variation of study participants (e.g., gender, education, marital status, race, zip code, and socioeconomic status) (Bernard et al., 2017; Patton, 1980). The geographical location (e.g., rural, urban) of the ALH and DCW was acknowledged because geographic location often can cause some variance in findings, even

though participant characteristics may be similar (Creswell, 2003; Patton, 2002). This study's sampling inclusion criterion are defined in Table 4.

Table 4

Sample Inclusion Criteria

| |
|--|
| Currently working in an ALH |
| Holds a current Arizona Certified Caregiver certificate |
| Eighteen years of age or older |
| English speaker |
| Has at least six months of current ALH DCW experience |
| Works 10 hours or more a week in one or more ALHs |
| Interested in attending educational events related to DCW responsibilities |

Recruitment Process

Recruitment of study participants began after UA Institutional Review Board (IRB) approval (Appendix B). All written documents shared with study recruits were pre-approved by the IRB, including recruitment flyers and consent scripts (Appendix C & D). Paper and online recruitment flyers included information about the study, purpose, and contact information study (Appendix C). IRB-approved scripts provided standardized introductory remarks that offered non-technical and understandable information about the research study (Appendix D) (Merriam & Tisdell, 2016a). Recruitment continued until data collection targets were met. The anticipated data collection target was a sample between 8 to 20. Recruitment activity data were collected on the DCW Recruitment Data Sheet (Appendix E). The recruitment data included the number of potential participants who: expressed interest, declined to participate, did not meet eligibility criteria, or resigned from the study for reasons made available (Tong et al., 2007).

Recruitment Materials

Recruitment materials were offered in paper and electronic format to appropriate entities in Pima County. Examples of these include assisted living training programs (e.g., CareGiver Training Institute), recommended ALH businesses, community organizations (e.g., Public Libraries), and DCW social media (e.g., Rosa's Chante Assisted Living Newsletter). This distribution did not generate a sufficient number of recruits. The PI then expanded to Yavapai County and recruited through personal and professional contacts (e.g., case managers, DCWs, ALH managers) and phoned ALHs obtained from the Department of Health Services Adult Care Home database. Permission from recruitment sites was obtained before distributing study recruitment flyers and electronic notices (Appendix F).

Communication During Recruitment

One person, the PI was responsible for recruitment communication. During recruitment, the interested potential participant contacted the PI by phone or email. Since information gathered during the initial recruitment could include potential participant information such as mailing address, email, and phone number, this information was only used for recruitment communication and scheduling purposes. Initial communications included an explanation by the PI of the purpose of the study, the time commitment (60 to 90 minutes), protection of privacy, and the data collection process (e.g., recorded one-on-one interviews). All questions posed by potential recruits were answered. The PI then confirmed that the recruit continued to have an interest in participating in the study. At the time of recruitment, all potential participants were informed that the study's results were likely to be published, but individual responses and personal information would be de-identified and presented anonymously. A brief screening

would address the study's inclusion and exclusion criteria (Table 4). After confirming the recruits' study inclusion eligibility, the PI invited those interested in participating and met eligibility criteria to schedule an interview at their convenience and location preference. However, due to the Covid-19 pandemic, online interviews were available as an alternative if it was not advisable to meet in person.

Sample Size and Data Saturation

The literature reviewed indicated there was little consensus and much ambiguity concerning determining sample size estimations and justifications (Byrne, 2015; Fusch & Ness, 2015; Hennink et al., 2019; Mason, 2010; Patton, 2015). Except for a few publications on estimating sample size adequacy for qualitative studies (Guest et al., 2006; Hennink et al., 2016; Morse, 1995; Moser & Korstjens, 2018; van Rijnsoever, 2017; Weller et al., 2018) the prospective determination of sample size is not consistently estimated (Morse et al., 2014; Sandelowski, 1995) nor are these estimates adhered to when they are cited (Mason, 2010). Morse (2015, p. 1214) states, "any belief to predetermine sample size is a futile task." As a result, there are no accepted universal predetermined means to calculate the sample size for QD studies (Fusch & Ness, 2015; Guest et al., 2006); therefore, this study's sample size adequacy was determined by "the appropriateness of the data" (O'Reilly & Parker, 2013, p. 194). The appropriateness of the data was determined by saturation (e.g., repeating codes and subcategories, no new information).

Saturation Deliberations

Saturation is often about if the study's purpose was met and occurs when "data are rich, full, and complete" (Morse, 1995, p. 149). No new information or fresh insights change current

findings (Guest et al., 2006). To put it precisely, the strategy of this study continued with sampling until data patterns were established (Powers & Knapp, 2011), data repetition occurred (Kyngäs, 2019; Schreier, 2013), and there was enough “conceptual depth” (Nelson, 2017) and “concordance within the data set at the conceptual level” (Morse, 2018, p. 812) to answer the research question.

During the iterative process of sampling, data collection, and data analysis is the level at which data saturation will be revealed (Hennink et al., 2016). Although data collection and analysis occurred concurrently saturation considerations were determined by the PI after each interview session was transcribed and findings analyzed. As data collection progressed, fewer new and unique responses occurred (Morse et al., 2014).

Data Saturation Assessment

Three data saturation assessment strategies were used to assist with determining data saturation. First, at least one additional interview was conducted after it was believed saturation had been reached (Rubin & Rubin, 2005). Second, a decision trail (Sandelowski, 1986) assisted with transparency and offered insights into innate personal biases of the PI that could have impacted sampling and saturation decisions (Chenail, 2011b; Fusch & Ness, 2015). Qualitative software assisted with organizing data, and visualizing codes, subcategories, categories, and interview information (date, time, interview #).

Third, to assist with analyzing data adequacy and saturation consideration, a method described by Guest, Namey, and Chen (2020, pp 507) used three metrics: base size, run length, and new information threshold (Table 5). A base size, the initial number of interviews, was established. These interviews were analyzed and parsed into a total number of unique categories

(e.g., NVivo data grid). The number of unique categories was used as the denominator of the saturation ratio. The new information threshold was calculated after interview 6. For a detailed description of the process used in analyzing of results see Appendix G.

Table 5

Saturation Evaluation Grid

| Interview # | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------------------------------|-----|-----|-----|-----|-----|-----|---|-----|
| New Categories per interview | TBA | TBA | TBA | TBA | TBA | TBA | | TBA |
| New Categories in run | | | | | | TBA | | TBA |
| % Change over base | | | | | | | | |

Data Collection

Individual one-on-one interviews with DCWs were this QD study's central data collection method. The following data collection discussion is organized into three main sections: setting, data collection and interview procedure, and interview guide.

Setting

When feasible, in-person interviews that follow the Pima County and Centers for Disease Control Guidelines (CDC) Covid-19 healthcare provider guidelines (<https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control.html>; <https://www.webcms.pima.gov/cms/One.aspx?portalId=169&pageId=533608>) were held in a private setting (e.g., participant home) or a private room or space at a public location (e.g., park, public library, open area at a local school, city council office). If an in-person interview was not possible, alternatives included scheduling a synchronous interview using a technology platform (i.e., Zoom platform, telephone). To adhere to the CDC Covid-19 social distancing and infection control recommendations while maintaining confidentiality, the presence of non-participants

(e.g., family members, co-workers, children) during the interview was discouraged (Braun & Clarke, 2006).

Data Collection and Interview Procedure

After explaining and obtaining consent, each study participant was invited to complete the DCW Survey (Appendix H), followed by a semi-structured interview that was audio recorded using two digital recorders or Zoom technology. After each interview, the participant was offered, mailed, or delivered a thank-you note with the PI's contact information and a \$40.00 cash honorarium at their preferred location. Multiple interviews with a study participant were not planned. However, on rare occasion, a study participant was contacted to verify findings and provide feedback (Morse, 2015).

The PI was the central instrument for collecting and analyzing data for this study. The non-verbal elements that the recorder and transcripts failed to capture were included using the PI's observations and interpretations. These observations offered insight into the interview interaction and assisted in illuminating the observable context (e.g., physical environment, the process of participant informing) (Powers & Knapp, 2011). Reflexivity activities included field notes during recruitment, interviews, and thoughts during data analysis (Beuving & de Vries, 2014; Merriam & Tisdell, 2016a). Field notes are viewed as a field chronicle that included the PI's interpretive insights and methodological considerations, which assisted the PI with remembering and provided a vehicle for contemplation (Guba & Lincoln, 1981; Patton, 2015).

Interview Guide

Guided by the IRT, an interview guide (Appendix I) and in a supportive and accommodating manner (Peplau, 1994b), participants were encouraged to provide thorough

answers and to expand on their responses. The interview guide consisted of predetermined, open-ended, semi-structured main and follow-up questions designed to capture the DCW's views and experiences (Rubin & Rubin, 2005). The use of probing questions and prompting interview techniques ([non-verbal: gestures & silence] [verbal: tell me more, can you expand on that point]) were used as tools to assist in understanding the DCW's learning and technology needs (Bernard, 1994; Rubin & Rubin, 2005).

Interview Guide Validation

Salient interests in validating the interview guide are to increase the quality of the study, improve the research design (Malmqvist et al., 2019), and assess whether the interview guide questions answer the research question. Before participant interviews commenced, the interview guide was validated by several expert stakeholders with expertise in interviewing and backgrounds in the DCW profession. Once interview guide questions were vetted, a pilot interview was conducted by the PI to increase the quality of the study and to evaluate the time, performance, and appropriateness of the interview guide (Brown et al., 2008). Any interview guide modifications were noted.

Interview Questions

For consistency, the majority of participants were asked similar questions (Bernard et al., 2017; Mortazhejri et al., 2020); however, it was expected that interview questions would occasionally naturally evolve from general questions to more specific questions as the interviews advanced (Mack et al., 2011). As the interviews continued, the PI's knowledge expanded during the data collection phase (Guba & Lincoln, 1981; Mack et al., 2011).

Three aims guided the interview guide (Appendix I) for this study's principal research question, *what are the self-identified learning and technology interests and needs of the direct care worker working in the small, assisted living home?*

- Aim 1: To explore the perceived learning interests and needs of DCWs in the context of the small ALH.
- Aim 2: To describe the technology interests and needs of the ALH DCW as it relates to learning.
- Aim 3: Identify barriers and facilitators to achieve learning interests and needs.

Data Analysis

During data analysis, inductive reasoning was used the majority of the time. *Inductive reasoning* is the rigorous and systematic observation of linguistic and visual patterns or repetitive occurrences that leads to formulating conclusions from the observations (Adu, 2019). These conclusions concern what the observations may signify, develop and move from lower (i.e., fragmented text) to higher levels of abstraction (i.e., codes, subcategories, categories). To accomplish this subjective interpretive process, conventional qualitative content analysis (QCA) (Bernard et al., 2017), a widely used method in qualitative description studies (Hsieh & Shannon, 2005; Sandelowski, 2000), was selected for its inductive, systematic approach (Schreier, 2013) to analyze this study's data. Analyses are divided into three sections: A pre-aims analysis offers three inductive strategies used to make sense of the interview data; the main analysis is an inductive analysis guided by a deductive framework, the study's three aims; and the third analysis presented is an inductive taxonomy of learning interests and needs.

Framework Selected for Qualitative Content Analysis

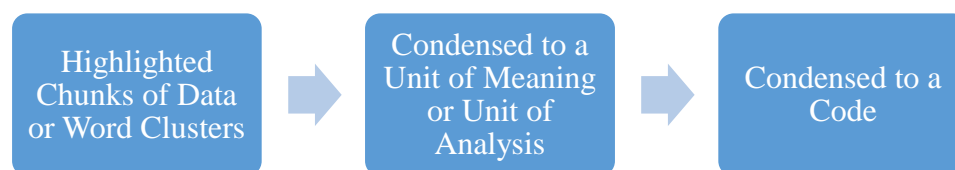
The interview questions provide the preliminary framework for QCA (Bernard et al., 2017). To determine trends, patterns, frequencies, and relationships of and between words (Cho & Lee, 2014; Vaismoradi et al., 2013), the iterative immersion process of QCA uses a multi-step process of organizing, describing, and interpreting data simultaneously during the data collection-analysis process (Bernard et al., 2017; Merriam & Tisdell, 2016). During QCA, transcripts, field notes, and related documents were systematically and repeatedly explored to achieve *a sense of the whole* during the constant analysis of data concerned with uncovering and reflection (Holloway & Galvin, 2016).

Coding Process

Each interview transcript was viewed as containing large amounts of textual data that needed to be analyzed. After each interview, the recordings were anonymized, de-identified, and transcribed verbatim by the PI or a third-party contractor using a standardized transcription protocol (McLellan-Lemal et al., 2003). Each transcript was then formatted using standardized identification information (Participant ID#, date of interview, site/location of the interview, transcriber name, name of interviewer) (Mack et al., 2011; McLellan-Lemal et al., 2003), and each page of the interview transcript was sequentially numbered.

Figure 7

Coding Process



Immersion in the data analysis process began with reading and rereading each transcript to identify data segments that represent responses to the research questions that may be relevant (Creswell, 2013; Erlingsson & Brysiewicz, 2017). The reading of the first transcript focused on proofreading for transcript accuracy against the audio interview (McLellan-Lemal et al., 2003). Key ideas were identified using manual or electronic highlighting during the word-for-word readings. These highlighted *chunks of data* (Bernard, 1994) or *word clusters* (several words, a sentence, or a statement) represented a particular idea. This cluster of raw data is called a *unit of meaning or analysis* (Cho & Lee, 2014; Kleinheksel et al., 2020). Each unit of meaning or analysis was then condensed through paraphrasing using an abbreviated *code* that described it (Cho & Lee, 2014; Kleinheksel et al., 2020). A *code* was assigned to each condensed unit of meaning or analysis. Each code represented the unit of meaning or analysis and should be identifiable with the content of the unit of meaning or analysis (Graneheim & Lundman, 2004). (Figure 7).

With each additional interview, the analysis and coding process advances using constant comparison (QCA) (Bernard et al., 2017) of new and previous coding and analysis findings. Each code is compared with other codes for likeness or similarity. This “*fine-grained coding*” process (Bernard et al., 2017) eventually led to the identification of pattern regularities and word relationships from the individual codes. Once related codes were recognized, they were sorted into similar *clusters of like-coded groups*. These were classified as *sub-categories* (Cho & Lee, 2014; Kleinheksel et al., 2020). As the QCA process continued, sub-categories were so sorted and again abstracted into *category(s)* (Graneheim & Lundman, 2004). These categories were

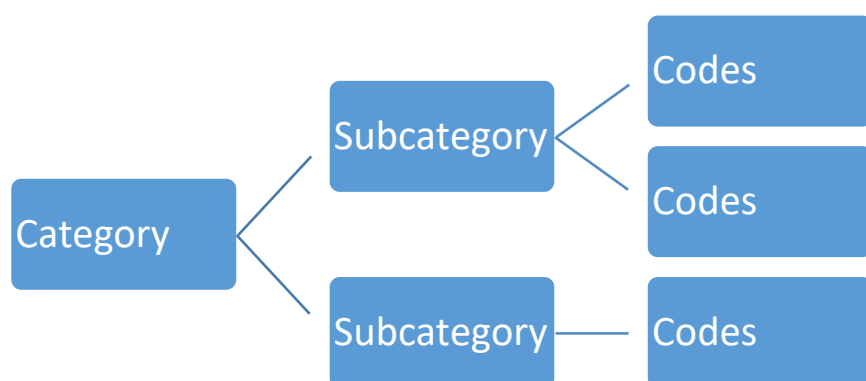
groupings of slightly higher-order, broader-coded groups of several sub-categories (Figure 8 Coding Frame Hierarchy).

Reporting Coding Frame Hierarchy

At each level of the *coding framework hierarchy*, raw text (e.g., chunks of data or word clusters) assists with building and validating the dataset. During the commencement of QCA (Bernard et al., 2017) and a series of paraphrasing steps, NVivo (released in March 2020) was used to identify and track units of meaning (Mayring, 2014). During the constant comparison process, *memoing* was conducted. Memos are defined as annotations for capturing thoughts and ideas and are dated. Collaborating and confirming results was accomplished by the PI meeting with her advisor. During this time, tentative findings were substantiated, revised, and reconfigured (Mayring, 2000).

Figure 8

Coding Frame Hierarchy



As the coding process proceeds, a coding frame hierarchy of codes, sub-categories, categories, definitions, and direct-quote examples develops. To assist with transparency,

organizing, and displaying a decision trail (e.g., memoing, field notes, & highlighted transcripts), a computer-assisted qualitative data analysis software program (NVivo, 2020, March release) was used. The result of QCA is a coding framework hierarchy that will be exemplified in table format (Table 6) and include “*easy-to-understand language*” to report QCA (Willis et al., 2016).

Table 6

Process of Reporting QCA

| Category | Subcategory | Quotes |
|----------|-------------|--------|
|----------|-------------|--------|

Ethical Considerations - Human Subjects, Data, and Safety Considerations

Extending through the entire research process is the overriding issue of ethics. Ethical considerations must solidly impact every step of the research process. Ethical considerations are of prime importance when selecting a research topic, collecting data, and ultimately disseminating the results of a research study. There are many aspects of ethical research principles, but these principles will always include the protection of the study participants in the research study.

Two areas involved ethical considerations associated with this research study. The first concern was the protection of the study participant (Protection of the Rights of Human Subjects). The second concern was maintaining high professional standards and good practice as it pertained to managing this study’s data.

Protection of the Rights of Human Subjects

This study’s procedures were consistent with a sound research design. These procedures are described below:

1. Meet a *do no harm* canon. There were no foreseeable or potential risks, harm, or injustices that would occur by participating in this study. There were no known side effects. This study was not deceptive and was unlikely to have a significant adverse impact on study participants. However, the interview itself might have subconsciously impacted the participant. An unintended side effect of the study interview was the possibility that participants could leave knowing characteristics about themselves that they were unaware of before being interviewed (Patton, 2002). If study participants felt they had suffered an injury from participating in this study, they would have been directed to seek immediate care or contact their PCP for direction. The University of Arizona had no funds set aside for the payment of treatment expenses for this study.
2. Informed consent of study participants was obtained in advance of research participation and appropriately documented;
3. Study participants could have refused to participate, withdrawn voluntarily from the study at any time, and were permitted to not respond to questions during this study;
4. Privacy of study participants was protected, and the confidentiality of the data will be maintained throughout the lifecycle of the data;
5. Information that might identify study participants during interviews was eliminated during the data transcription process.

Potential Benefits of the Proposed Research to Human Subjects

This study was designed to learn about the characteristics of DCWs working in the small ALH and understand their work-related educational and technology needs and interests. Because these solutions take time, this research might not provide direct benefits to the study participant.

One possible indirect benefit might be that some study participants might have found intrinsic value in contributing to scientific progress that might benefit others in the future. The \$40.00 provided at the end of the interview was not considered a benefit to the research participant but simply a reimbursement for expenses that would assist participants with time and travel expenses and time away from responsibilities (Mack et al., 2011).

Informed Consent Process

After IRB approval was granted (Appendix B) and before research commencement, all participants were provided a written document that included a study description and information regarding confidentiality.

Communication with study participants (oral, written, & electronic) during recruitment, enrollment, consent, and data-gathering activities were part of the informed consent process. During the informed consent process, privacy precautions were maintained at all times. Privacy precautions included using de-identifiers for each study participant. Except for recruitment contact information and paper and electronic consent forms, all data collected were de-identified and stored securely without the possibility of being re-identified. Once data were de-identified, they would not readily identify study participants.

Only one person, the PI, conducted the consent process with the study participants. Prior to the consent process, each potential study participant was provided with the document, *Consent to Participate in Research* (Appendix J), verbally introduced to the study, and informed what to expect in simple language as outlined in the *Consent to Participate in Research* document (e.g., study purpose, anticipated time, foreseeable risks, benefits, rights, data management) (Appendix J). The *Consent to Participate in Research* study information was mailed or hand-delivered in

advance to the study participant by the PI. The PI read the *Consent to Participate in Research* document out loud to the participant. Highlighted aspects of the study included information about what to expect during the interview process, their participation was voluntary, and that participants could withdraw at any time. Confidentiality and data privacy were also discussed. All questions were answered before any participant freely verbally agreed to participate.

Reporting Concerns

At the end of the study, participants were offered contact information (phone and email) if they had additional questions about the study or concerns about the research of the PI and her supervisor (Appendix K). This information was hand delivered or mailed at the participant's preference after completing the study interview.

Study participants were also provided with information on how to report concerns anonymously. Concerns could be reported to the University of Arizona (UA) IRB in writing or reported verbally, including any study-related concerns or complaints by someone who was not part of this research study. The UA IRB has the responsibility to investigate allegations and findings of non-compliance and take corrective actions as needed. They may be reached by phone 520-626-8630 or online at <http://rgw.arizona.edu/compliance/human-subjects-protection-program>.

Data and Safety Monitoring Plan

The *Data and Safety Monitoring Plan* (DSMP) aims to ensure information security during the lifecycle of this study's data and the anonymity of study participants (Surmiak, 2018). The lifecycle of this study's data includes accessing, utilizing, transmitting, storing, and disposing of data on all media forms (paper, electronic, recordings) and all devices, regardless of

device ownership. For this study, the PI (Wyles) was the custodian and manager of the DSMP, which included day-to-day operations of any sensitive data and any paper or electronic software or equipment used in collecting personnel information and data. The PI's supervisor provided oversight for this study's DSMP, which was developed following the Arizona Board of Regents Policies, the UA Human Subject Protection Program (HSPP), UA Data Classification & Handling Standards (Security.Arizona.edu/Data), Information Security Office (ISO), and the Information Security Awareness Program. Data and safety monitoring compliance included but was not limited to completing all UA mandatory training (e.g., Information Security Awareness Training and Conflict of Interest Required Disclosure) and certifications (e.g., Health Insurance Portability and Accountability Act, NIH Responsible Conduct of Research, Information Security Awareness, Collaborative Institutional Training Initiative (CITI)).

The objective of the DSMP is to prevent unauthorized access, use, disclosure, disruption, modification, or destruction of information/data (recorded, electronic, & physical) (<https://research.arizona.edu/compliance/human-subjects-protection-program/guidance-researchers>). This study's DSMP was guided by three data management pillars identified by the UA: *confidentiality, integrity, and availability*.

Confidentiality

Confidentiality initiatives include the prevention of unauthorized access or disclosure of data. This includes personal privacy of information during the lifecycle of the data. De-identified data is defined as data for which the PI or others cannot readily ascertain the identity of the responses of the study participant. Primary sources of data include surveys and recordings from study participant interviews, but also include information such as field notes and qualitative

analysis from tape recording transcripts. Data that were not digital were de-identified when possible, managed, processed, and stored in a secure environment in the PI's College of Nursing (CON) office (locked cabinet inside a locked office at the UA, CON).

After each interview concluded, all data (e.g., Informed Consent & DCW Survey) were secured and transported by the PI from the research site to a secure room at the CON in a locked cabinet or a securely protected computer server behind a locked door. Paper consent forms were stored securely separately from other forms of participant data because they might have contained identities.

All electronic data are considered sensitive, and any electronic data collected are de-identified at the time of data collection and stored securely. The data and interview audio files were stored in a secured location at the PI's home, on the PI's personal, password-protected computer. A backup data file was stored on The University of Arizona's Box Health cloud. Only an encrypted UA connection network, strong passwords (e.g., passphrases), and the UA Net ID+ authentication were used to access this study's data. If there was any doubt of a data or privacy breach (e.g., password), the 24/7 Information Technology (IT) Support Center, or CON IT Department would have been contacted immediately. Unsecured Wi-Fi (e.g., free) was not used to access electronic information related to this study.

Integrity

Integrity includes ensuring that information is trustworthy and accurate. The University of Arizona has a site license for Qualtrics. Qualtrics is a cloud-based software tool that has undergone a data security review and has been vetted and authorized for use by the ISO. When indicated, Zoom software was offered as a way to electronically collect verbal consent to

participate in research (Appendix J) and Qualtrics to collect the Caregiver Survey (Appendix H). The option to anonymize the Caregiver Survey using Qualtrics was exercised. Only one laptop was used to collect the recorded interviews. For further discussion of data integrity, please see the Trustworthiness section.

Availability

Availability includes ensuring that this study's data and information are accessible and reliable. A data log was kept that identified where data for this study were being stored for a time period of no less than 6 years. Finally, due to the rapidly developing General Data Protection Regulation (GDPR) requirements, data classification for this study was conservatively viewed at the highest level, "regulated." At any time, if any data exposure had been detected, it would have been immediately reported.

The Data and Safety Monitoring Plan Policy.arizona.edu (Information Security Policy (IS-100) is the central governing document for UA's Information security program. In adherence with IS-100, the PI was actively involved in conducting this study, including the responsibility for implementing and monitoring the DSMP. Once the study was approved and commenced, the PI and her supervisor met at least bi-weekly to review research progress (e.g., data completeness, participant enrollment, retention, protocol compliance, DSMP, and any other factors that might have impacted the study. The DSMP could also have included factors external to the study when interpreting the data, such as unforeseen new and relevant developments that might have impacted the safety of a participant or the ethics of the research.

As noted in the *Consent to Participate in Research* document (Appendix J), this study was considered low-risk and deemed exempt by the University of Arizona IRB. Therefore, any

Adverse Event (AE) was regarded as improbable. Regardless of how rare, interviews may have affected participants (Patton, 2002, p. 277). The PI was required to monitor and process any AEs, including immediately reporting to the IRB and her supervisor.

Participation in this study was strictly voluntary. As previously noted, study participants were permitted to withdraw or refuse to participate at any time and would have experienced neither penalty nor loss of benefits. No participant withdrew from this study. However, if a participant withdrew from this study for any reason, the data collected during the time the participant was enrolled would remain in the study records, would not be removed, and would be included in any subsequent analyses related to this study. There were no known or expected side effects (injury) for participation in this 60 to 90-minute data collection portion of the study. However, this did not waive the rights of the study participants. If a study participant suffered an injury from participating in this study, they would have been encouraged to seek follow-up health care. Withdrawal reporting was divided into three subcategories: 1) dropout due to an AE; 2) dropout for lack of efficacy, such as not getting enough benefit from participating; and 3) dropout for administrative reasons, such as withdrawal of consent. The consent document did not give the participant the option to have data removed from the study records. The PI could continue to review participant study data collected prior to the participant's withdrawal from the study.

Finally, the data collected from this study will not be available to third-party entities without written approval from the PI. This includes not granting access to this study's data to other researchers for replication or reproducing results.

Trustworthiness

“Well designed, well-conducted research serves as a means to generate well-founded and trustworthy evidence” (Ritchie et al., 2003). Of major importance of any research study, *can we trust the findings, and will the research findings be of value and legitimately usable?* (Morse, 2018). Acknowledging that there are methodological challenges and strengths with all modes of inquiry (Lincoln et al., 2017, p. 138), quality and transparency criteria were identified and undertaken throughout the research process (Morse, 2018).

There are an increasing number of qualitative research guidelines available to assist with the evaluation of a study’s methodological thoroughness (Cohen & Crabtree, 2008). Yet, there is a lack of consensus regarding which criteria should be included (Cypress, 2017; Rolfe, 2006b; Tobin & Begley, 2004). For that reason, the use of a set of criteria that is consistently cited in nursing research for its philosophical undertones during the qualitative inquiry was applied in this study (Elo et al., 2014). Lincoln and Guba (1985) developed different criteria using an alternative lexis from quantitative language (e.g., reliability & validity) as a way to ensure and measure qualitative rigour. Lincoln and Guba’s (1985) trustworthiness framework and its related criteria (credibility, transferability, dependability, confirmability) were selected because of their naturalistic underpinnings and universal popularity.

Trustworthiness criteria offer a means to act as both a guide and gauge of the research process (Morse, 2018; Tracy, 2010). Specifically, for this study, the trustworthiness criteria served three purposes:

1. As a guide during the development of this study’s proposal.
2. Upon completion of this study, a means for evaluation (Cypress, 2017).

3. To provide a deeper level of transparency during the research process.

Finally, and somewhat ironically, there is no agreement among qualitative researchers on the categorization of each of the trustworthiness criteria. As a result of this, the examples below are not mutually exclusive to the identified criteria (credibility, transferability, dependability, confirmability).

Credibility

Credibility is focused on the plausibility of the research findings. Do these findings provide insights into the participant's constructed experience, and do these findings support and reflect credibility? Can a researcher have faith or confidence in the study's findings or inquiry? Methodological strategies that support credibility include *prolonged engagement* and *persistent observation in the field* are ways to become familiar with the setting and context. These strategies assist with building trust (Korstjens & Moser, 2018) and becoming acquainted with and understanding the data (Neergaard et al., 2009). Examples used in this study include attending DHS and other educational offerings for ALH managers, reviewing DHS regulations, and touring ALHs.

At the inception of the research process, the *practice of reflexivity* assisted with designing the research structure and expanding the PI's level of understanding before the study started. Inherent in the practice of reflexivity is the practice of transparency of thought and sincerity (Tracy, 2010). Reflexivity was also used as an analytical tool (Krefting, 1991) for extrapolating knowledge about oneself and others during the research study (Xerri, 2018). This reflexive process supports introspection and conceptual thought, and it may add strength to research findings and generate knowledge (Polit & Beck, 2010). Reflexivity documentation examples

included *field notes*, *memoing*, and the inward deliberation exercise of acknowledging and making personal sense of feelings about observations (Jootun et al., 2009).

Transferability

Transferability is focused on the applicability of this study's results (Krefting, 1991). Are the findings relevant, and can they be of use? Do the findings fit the context of this area of research? Can the results of this study be transferred to another setting? An example of meeting the transferability criterion includes *keeping a glossary with extensive or dense descriptions* supporting the inquiry's context (Krefting, 1991). Dense descriptions are also known as "*thick descriptions*" which are detailed descriptions that may be presented to readers to substantiate the research findings and may support or relate to other situations that are similar (Creswell, 2013). When applicable, *reviewing work* that has already been published will be helpful (Stalmeijer et al., 2014).

Dependability

Dependability is concerned with whether the analysis processes meet the standards of the study design. Are the results of the study dependable? If needed, could a similar inquiry be conducted, and would this investigation repeat and fortify the conclusions? An *interview guide* was used to provide structure and consistency during participant interviews. An *audit trail* offered a level of research integrity (Sandewski, 1986; Creswell, 2013). The transparency of the steps taken and decisions made during the research process were reflected in the audit trail documents and supported interpretations (Long & Johnson, 2000). Audit trail examples include *raw data*, *decision notes during coding* (Korstjens & Moser, 2018), *field notes*, and all other

relevant information collected and acknowledged during the data collection process (Baillie, 2015; Lincoln & Guba, 1985).

Methodological triangulation is a quality control activity that examines the consistency through different data sources (Tables 11 & 15). A time-honored technique that supports parallelism across sources (Colorafi & Evans, 2016; Flick, 2017), trustworthiness criteria (i.e., dependability & credibility), verification of findings, and a means of mitigating interpretation bias (Fusch et al., 2018).

Confirmability

Confirmability is concerned with any external influences that may skew the results and findings. The aim is to demonstrate thoroughness and insight into how certain decisions are made (Stalmeijer et al., 2014). Confirmability examples used in this study include a *recruitment plan* (Curtin & Fossey, 2007; Creswell, 2013), a *reporting plan* (Colorafi & Evans, 2016), a *description of methods* (Schou, 2012), *clearly defined procedures* (e.g., data saturation), and *the sequence of the data collection plan* (Creswell, 2013), the reporting of *personal assumptions* and *potential bias* (Schou, 2012), and *retaining study data* and making it available (i.e., UA Box Health) (Colorafi & Evans, 2016).

Analysis Plan

The analysis plan describes the method that directed the coding process for each analysis, QCA. The succeeding Chapter V presents findings from data analysis. Data analyses (i.e., coding) was an insightful, personal activity that is discussed below.

A Reflection-in-Action During Analyses

To advance understanding and contribute knowledge related to this research inquiry (Wolf, 2015), this study's "planned task" (Morse, 1989, p. 5) was to answer the research question (Morse, 1995). Only one QCA analysis was intended. If "critical review of coding is an on-going requirement" (Milne & Oberle, 2005, p. 417), some may wonder why it took three recursive analyses of the same data, using the same technique but with a different focus, to answer the research question?

Why did the PI feel compelled to repeat additional QCAs to answer the study's research question? Though it is complicated to describe the gradual awareness that led the PI to the realization that something was unaccounted for, it felt necessary to repeat the process of analysis; as each coding analysis progressed, there continued to be a subtle inner turmoil that something was missing or not quite right or not enough understanding had emerged.

A simplistic answer is, as each analysis was completed, findings were critically reviewed; there was a concern that the findings did not sufficiently explain the phenomena under study, so another analysis was completed ... and then another. Without realization, the PI was using the analytical framework described by Srivastava and Hopwoods (2009) of reexamining and refocusing the researcher's perspective, albeit somewhat clumsily. However, the process of reflexive thought, a central aspect of trustworthiness (Korstjens, 2018), and Peplaus' IRT encouraged, poked, and prodded a deeper self-awareness during the analysis and interpretation processes.

The findings of each analysis (Chapter V – Pre-aims Analysis, Main Analysis, Learning-Interest Analysis) offer a distinct viewpoint. Below is a brief reflective appraisal by the PI during the analyses, including the PIs reasoning and an overview of the advantage of each analysis.

Pre-aims Analysis

The pre-aims analysis is the most organic, has the least suppositions, and is closest to the CCG experience. The initial coding of the data was not predisposed to an a priori framework and focused on fragmenting transcript data by identifying key phrases. The resulting subcategories are the least abstract. When evaluating the post-QCA findings, the data supports impressionistic understanding, offering the reader the greatest latitude for contemplation, interpretation (i.e., creating meaning), and artistic freedom (i.e., meaning units).

During this process, the dynamics of subcategories were appraised using the framework (i.e., Human Factor Interpersonal Relations [HFIR]) that was created for this inquiry (Chapter III). The HFIR framework was also useful during the interview guide development, steering the PI's perspective during information gathering. After subcategory coding was completed, the study's HFIR framework was used as an analytic tool to deconstruct the units of meanings of each subcategory (Table 9). Breaking down the coded units and pairing them with HFIR components offered a fruitful analysis; offering embedded insight within the codes and highlighting the interrelationship of and between subcategory findings. Nevertheless, the applicability of the HFIR framework during hierarchic structuring was challenging and felt "force-fit" (Sandelowski, 1993, p. 216). Using the HFIR components as a hierarchal organizing scheme for presentation, while contextually rich, were hierarchically flat, intertwined, and presented higgledy-piggledy. Because of this, it was not used to structure results (i.e.,

subcategories) (Garvey & Jones, 2021; Sandelowski, 1993). While the pre-aims analysis provided meaning, there was a realization that the “whole” of the findings did not have the clarity or structure necessary to answer the research question succinctly nor did it provide collective meaning.

Main Analysis

The main analysis uses the research aims as an a priori framework to provide a classic deductive presentation of findings (Miles et al., 2014). Organizing the data using an a priori framework (i.e., research aims) added epistemological clarity, order, and essential feature identification of the data. It was also responsive to suggestions by the dissertation advisor. As an organizing framework, the aims focused on second-level QCA and fundamentally displayed the findings’ interrelationships (Sandelowski, 1993). Usually abstract in form and extending throughout the subject matter, subcategories were identified and sorted into categories (Morse & Field, 1995) for collective meaning. However, during the examination of main analysis, the PI also realized a need to know more. Specifically, main analysis lacked the precision to identify specific curriculum content (e.g., didactic information) upon which to develop future interventions.

Learning Interests Analysis

The PI’s future intent is to develop an educational intervention for DCW (Chapter I). The first and second analyses were insightful but did not offer a level of precision to identify curriculum content for developing an educational intervention efficiently. During the third analysis, the PI narrowed the analysis lens when answering the research question in enough detail to draw attention to its practical application (i.e., identify potential education topics). By

“zooming in” the scope of analysis, data were translated at a level of precision for future research ambitions (Sandelowski & Leeman, 2012; Flick, 2018a).

Summing Up the Reflective Prologue

This study sought “to reduce the data in such a way that the essential contents were preserved, but a manageable short text was produced” (Flick et al., 2007, p. 268). Though the research question never changed, data were constructed at different levels of abstraction and precision. The HFIR framework used in pre-aims analysis provides context for depth and comparison possibilities to the findings (i.e., meaning units); the main analysis presents data using a hierarchy structure for collective meaning (i.e., research aims); and the learning interests analysis narrows the finding-lens to identify curriculum criteria for future use. During analyses, introspection and reflection encouraged reexamination and redirected decisions (Srivastava, Hopwood, 2009; Eakin & Gladstone, 2020).

Sandelowski (1993, p. 217) reminds us that theory may enter (and leave) a study at different points in time in the research process, and it appears in different guises. This is what organically happened during this study’s multiple data analysis. During recursive QCA coding, consistency was adhered to, but the findings differed because the PI’s theoretical perspective shifted. During the journey of analyses, the thoughtful process of reflexive iteration, sometimes referred to as a “value-adding analysis” strategy (Eakin & Gladstone, 2020), assisted in refocusing the PI’s perspective and scope (Srivastava & Hopwood, 2009). Unfolding the process of *thinking* (i.e., refocusing perspective, acknowledging ultimate goals, & asking questions) was also helpful (Meleis, 2012).

These analyses offer a more comprehensive examination of data and addressed different knowledge perspectives. The distinct differences between the analyses enhanced the richness of this study's findings and led to a greater understanding. The role of QCA iteration was not viewed as a repetitive task but as a reflexive process (Srivastava & Hopwood, 2009). Collectively, the three analyses provide a pluralistic and versatile perspective of the DCW's learning and technology interests and needs.

Summary of Chapter

Acknowledging that methodological decisions impact a study's planning, implementation, and subsequent findings of the study, the purpose of this chapter was to offer a transparent and accountable discussion of this study's methodological process and coherence as it relates to the selected research design qualitative description. The justification and appropriate fit for why QD was selected was discussed in the research design section. Next, the planning for this study was detailed in sampling, data collection, data analysis, data management, and trustworthiness sections. Ethical considerations were highlighted in the protection of rights of human subjects and the data management plan. Finally, a reflective examination during data analysis relates to the trustworthiness of the findings.

If there were only one truth, you couldn't paint a hundred canvases on the same theme.

- Pablo Picasso, 1966

CHAPTER V: FINDINGS OF INQUIRY (RESULTS)

Participant interviews and resultant findings were guided by the research question: *what are the self-identified learning and technology interests and needs of the direct care worker, working in the small, assisted living home?* The purpose of this chapter is to present the findings using the process discussed in the data analysis plan presented in Chapter IV. The results are organized into three sections. Participant demographic characteristics and work-related experience are descriptively detailed. Next, to add depth and breadth to the findings and with the research question in mind, QCA analyses are presented: pre-aims analysis, main analysis, and learning-interest analysis. Finally, data triangulation, a component of trustworthiness is presented.

Participant Characteristics

The characteristic information presented below offers a contextual glimpse into this study's sample. This overview sets the stage from which this study's findings are generated. Direct care worker is the most frequently used universal description used nationally. However, in the state of Arizona, a ALH DCW is referred to as Certified Caregiver (CCG). Because this can lead to some confusion, the findings presented in Chapter V will acknowledge this distinction and use the term certified caregiver (CCG).

Demographic and Work-Related Characteristics

Purposively selected study participants (n=14) consented to participate, with 13 (93%) of the 14 participants completing a caregiver survey (Appendix H). Due to the COVID-19

pandemic, participants were invited to decide the venue and mode for their interview. Seventy-nine percent (n=11) elected to be interviewed in person at a private location of their choosing (8 at a private place at work; 1 at their home; 1 at the researcher's home; 1 reserved room at a public library), and three (21%) via Zoom. All interviews were recorded and, on average, lasted 69 minutes (range: 43 minutes to 97 minutes). All participants were interviewed in English.

Demographic Characteristics

Table 7 details the demographic characteristics of the study participants. All participants (100%) identified as female. The age range was 24-68, with a mean of 42.5. The sample resides in eight zip codes, and their geographical spread spanned 260 miles from Southern to Northern Arizona. Most participants [n=9; (70%)] identified as living in the city. Fourteen self-identified females, mean age 42.5 years (range: 24 – 68), preferred English as their primary language [n=12; (86%)]. The majority of the sample self-identified as single (n=7), followed by married (n=4), divorced (n=2), and widowed (n=1). Most participants [n=9; (65%)] indicated they had children living at home, and most of whom were under the age of 18 years [n=8; (57%)]. The highest level of school completed for the majority of participants was high school or GED [n=7; (54%)], followed by an associate or technical school graduate [n= 5; (38%)], and 1 (8%) had some post-high school education. When asked about religion, most participants identified with a religion [n=8; (64%)], two (14%) identified as being spiritual, two (14%) had none, and one (7%) preferred not to answer. A majority self-identified as white [n=8; (57%;)], two identified as Spanish, Hispanic or Latino, and four (29%) identified as multiple races.

Table 7*Demographic Characteristics of Participants (N=14) **

| Survey Item | N | % |
|---|----|-----|
| Marital Status | | |
| Single | 7 | 50% |
| Married | 4 | 29% |
| Separated | 0 | 0% |
| Divorced | 2 | 14% |
| Widowed | 1 | 7% |
| I prefer not to say | 0 | 0% |
| Have children living at home | | |
| Yes** | 9 | 64% |
| No | 5 | 36% |
| **Under the age of 18 | 8 | 57% |
| Highest Level of School Completed | | |
| High School or G.E.D. | 7 | 54% |
| Some Post-High School | 1 | 8% |
| Associate/Technical School Graduate | 5* | 38% |
| Religion | | |
| Religious affiliation | 9 | 64% |
| Spirituality | 2 | 14% |
| None | 2 | 14% |
| NA | 1 | 7% |
| Identifies as Spanish, Hispanic, or Latino | | |
| Yes | 6 | 46% |
| None of these | 7 | 54% |
| I prefer not to say | 0* | 0% |
| English first language | | |
| Yes | 11 | 85% |
| No | 2* | 15% |
| Race(s) participant considers they are | | |
| White | 8 | 57% |
| Spanish, Hispanic, Latino | 2 | 14% |
| Multiple races | 4 | 29% |

Note: *One participant did not complete the caregiver survey

Work-Related Characteristics

Table 8 details work-related characteristics of the study participants. The length of time CCG approximated they had worked in AL ranged from 1 year to 25 years (mean 10 years). The hourly wage ranged from \$13.00 to \$20.00 (mean \$15.40-\$16.00). Weekly hours worked ranged from 27 to 80 hours (mean 41-46 hours). Of the 13 participants that completed the survey, the majority of CCG had worked in other long-term care settings (n=11). These settings include

nursing homes (n=8), larger assisted living facilities (n=8), developmental disabled homes (n=6), home health (n=6) and group homes (n=3). The length of time participants had worked as a paid caregiver varied from 1 year (n=3/ 23.1%) to more than 10 years (n=7/54%).

Table 8

*Work-Related Characteristics of Participants (N=13)**

| Survey Item | N | % |
|--|----|-----|
| Experience working in other long-term care settings | | |
| Nursing home | 8 | 62% |
| Larger assisted living facilities | 8 | 62% |
| Developmental disabled homes | 6 | 46% |
| Home health | 6 | 46% |
| Group homes | 3 | 23% |
| Adult day care | * | * |
| Current length of time worked for current employer | | |
| Less than 6 months | 2 | 15% |
| At least 6 months | 2 | 15% |
| 1-2 years | 4 | 31% |
| 3-4 years | 2 | 15% |
| 4-5 years | 0 | 0 |
| More than 5 years | 0 | 0 |
| More than 10 years | 3* | 24% |
| Length of time has worked as a paid caregiver | | |
| At least 6 months | 0 | 0 |
| 1-2 years | 3 | 23% |
| 3-4 years | 0 | 0 |
| 4-5 years | 0 | 0 |
| More than 5 years | 3 | 23% |
| More than 10 years | 7* | 54% |
| Shifts currently working at ALH | | |
| Days | 7 | 53% |
| Evenings | 1 | 8% |
| Nights | 1 | 8% |
| Combination | 4* | 31% |
| Length of shifts | | |
| At least 8 hours | 6 | 46% |
| At least 12 hours | 5 | 38% |
| At least 24 hours | 0 | 0 |
| More than 24 hours | 1 | 8% |
| No Response | 1* | 8% |
| Number of hours worked each week | | |
| Range 27 hours – 80 hours | | |
| Additional jobs | | |
| Yes | 4 | 31% |
| No | 9* | 69% |

Table 8 – Continued

| Survey Item | N | % |
|---|-----|-----|
| Injury at work** | | |
| Yes | 6** | 46% |
| No | 7 | 54% |
| Do not know/Not sure | * | * |
| Unpaid caregiver for family member or friend | | |
| Yes | 4 | 31% |
| No | 9* | 69% |
| Relationship to person for whom care is provided | | |
| Spouse or partner | 0 | 0 |
| Adult child | 1 | 8% |
| Parent | 1 | 8% |
| Family member | 2 | 15% |
| Friend | 0 | 0 |
| Not applicable | 9* | 69% |
| Compared to other people your age, health is generally | | |
| Excellent | 2 | 15% |
| Very Good | 3 | 23% |
| Good | 5 | 39% |
| Fair | 3 | 23% |
| Poor | * | * |

Note: *One participant did not complete the caregiver survey **Participants reporting a work-related injury (n=6), 100% identified a back injury. Other injuries reported include a thumb sprain, pinched nerve, minor cuts, injury related to residents hitting care staff.

Findings

Pre-aims Analysis - Inductive Qualitative Content Analysis

Meaning Condensation

By staying close to participant interview data, Pre-aims Analysis concentrated on *description-focused open-coding and meaning-condensation* (i.e., data reduction) (Adu, 2019). Using qualitative content analysis (QCA) abstraction (Chapter III), “common threads” (Morse & Field, 1995) were extracted from study data of 14 interview transcripts (i.e., statements & narratives); then indicators were inductively summarized into descriptive “naturally occurring” subcategories with supporting definitions (Flick 2018; Lee, 1999) (Appendix L). NVivo from

March 2020 software (QSR International) assisted with QCA and inductive organizing of the interview data.

Inductive Interpretation Using Human Factor Variables

Next, an *inductive interpretation using HF variables* (i.e., user, artifact, task, organization) from the Human Factor Interpersonal Relations Framework guided deconstruction of data chunks from participant interviews. (Refer to Chapter II for a discussion of HF). This analysis provided a means of appraising chunks-of-data, to make sense of, and provided situational understanding of a CCG phenomenon (Boy, 2011, p. 54). The three examples below highlight the analysis process while drawing attention to CCG educational preparation, ALH policies, resident co-morbidities, and equipment use while providing care (Table 9).

Example 1, *vaccination policy*, is an example of a management policy decision during the COVID-19 global pandemic. Not all ALHs mandated their CCGs be vaccinated. Because of this, the vaccinated CCG may have had more resident contact and direct care responsibilities than the unvaccinated CCGs.

Example 2, *initial CCG training*, pertains to the caregiver training the participant received in preparation to be eligible to take the state certification exam. The participant came to the realization of the importance of having hands-on training and that there is both a skill and art to providing direct care. The final example spotlights a resident transfer and equipment use (i.e., bed brakes do not lock and equipment unavailability [i.e., Hoyer lift]).

In the 3rd example, *transfer of resident*, the presenting scenario involves a caregiving task that was accomplished regardless of the equipment malfunction (bed brakes not working), lack of equipment (Hoyer life), and resident size (obese).

Table 9*QCA Findings – Factors that May Impact the CCGs Delivery of Care*

| Focus Area(s) | Analysis Using HF Variables |
|---|--|
| Policy – ALH Vaccination Policy | <p>...and that's another reason why they <u>only have certain caregivers</u>¹ go into the room because <u>if they're not vaccinated</u>², <u>we don't want them (CCG) in there</u>³.</p> <p>P15_28yrs_CCG 1 year Code(s) (Vaccinated CCG have more direct care resident responsibilities)¹ (Unvaccinated ALH CCGs have limited access to residents)² (ALH Covid-19 vaccination policy impacts CCG work assignments)³</p> <p>Situation understanding from above coding: ALH vaccination policy places more direct care responsibilities on vaccinated CCGs.</p> |
| Education – Initial CCG Training | <p>I knew things, but there's a <u>lot I didn't know</u>¹, like to be quite honest, <u>how to change a brief</u>², which ends up being huge. They're like, <u>we're not going to teach how to change a brief</u>³. You're going to do plenty of that. And I'm like, huh. <u>There really is an art</u>³.</p> <p>P12_67yrs_CCG 11 years Code(s) (Lack of CCG confidence/skills related to initial training)¹ (Lack of CCG instruction during training - changing brief)^{2,3} (There is a skill and art to CCG work- personal care-brief)³</p> <p>Situation understanding from above coding: Changing a brief: Though a frequent caregiving task, learning to change a brief is both an art and skill, should be taught during initial caregiving training.</p> |
| Resident Care – Bed Transfer, Equipment and, Resident Comorbidity | <p>and he was very large, <u>very heavy person</u>¹, and the <u>brakes are not working</u>². And we say, well, they need to be working ...and <u>[bed] doesn't stop [rolling]</u>³. So, <u>we were working two people</u>⁴, just one holding onto the bed and the other was pulling the person.</p> <p>P2_58yrs_CCG 14 years Code(s) (Resident characteristic – obese)¹ (Equipment malfunction – bed breaks not working)² (Work injury potential – faulty equipment/heavy resident)³ (Two-person task-transfer to and from bed)⁴</p> <p>Situation understanding from above coding: Safety risk event involving an obese resident and two CCGs when transferring resident with broken bed brakes and no gait belt or Hoyer lift.</p> |

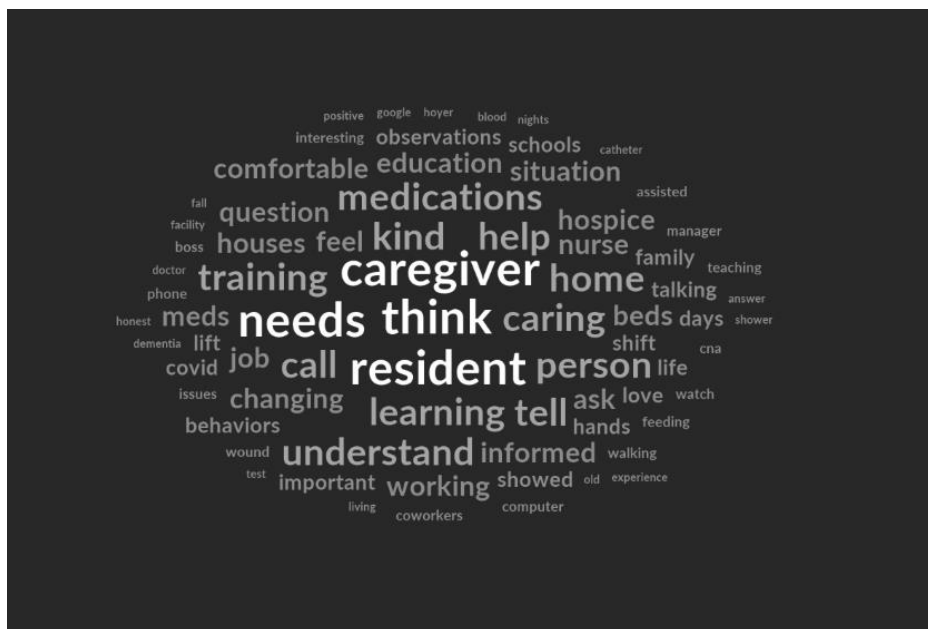
Visual Depiction of Participant Responses

Finally, as a method of QCA, *a visual depiction of interview text frequency* was used to inductively sort and summarize the frequency of words to determine if the study text was in

alignment with the research purpose. NVivo 2020 software was used to perform the visual syntheses of participant interview responses. After common words were removed and the word limit was set to 100, the study participants' keywords were identified. The most prominent words from this analysis were *caregiver*, *needs*, *think*, and *resident* and are highlighted in Figure 9.

Figure 9

Visual Depiction of Interview Text Frequency



Main Analysis – Qualitative Content Analysis Using an a-Priori Framework

The second analysis utilizes a deductive schema to conceptually guide the classification and presentation of findings (Dey, 2005, p. 164; Thorne, 2008, p. 178). This analysis answers the research question using the study's three aims as an a priori framework:

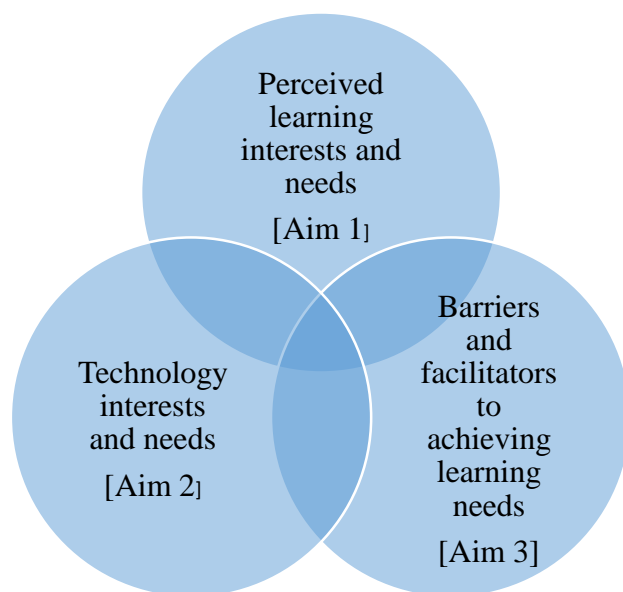
- Aim (1): To explore the perceived learning interests and needs of DCWs in the context of the small ALH;

- Aim (2): To describe the technology interests and needs of the ALH DCW as they relate to learning;
- Aim (3): To identify barriers and facilitators to achieving learning interests and needs.

The three aims also provided the conceptual guidance and structure during the development of the semi-structured interview guide (Appendix I). Figure 10 provides a visual representation (Venn Diagram) to symbolize the overlapping relationships and connections between conceptual categories (Adu, 2019; Wolcott, 1994).

Figure 10

Study Aims Venn Diagram



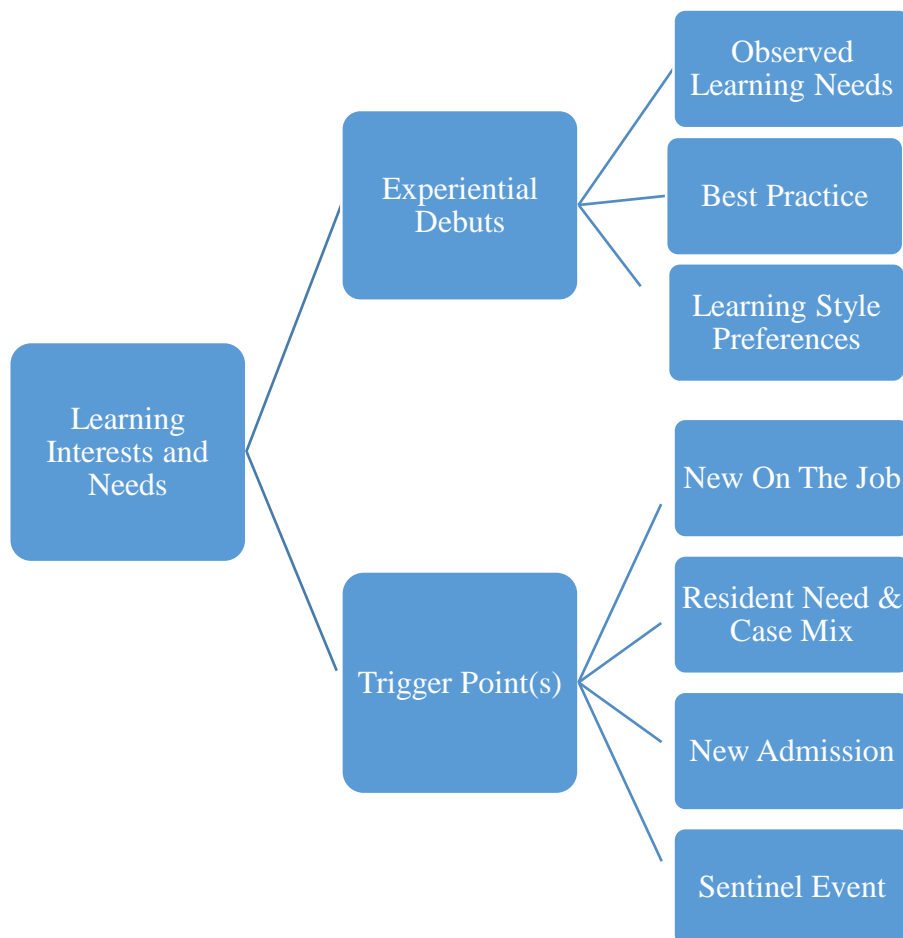
Guided by an a priori framework, common ideas from participants' data were clustered, presented, and defined. Acknowledging connections and relationships between the three aims (i.e., theoretical categories) and their conceptually related categories and subcategories, five

conceptually related categories assisted with linking the subcategories with aims and findings' interpretation.

Aim 1. Learning Interests and Needs

Aim 1 focuses on the CCGs' interests and needs, which are relevant topics related to the CCG's work environment. Two categories emerged: 1) Experiential debuts and 2) Trigger points. They are presented with their supportive seven subcategories that emerged from the data. See Figure 11 to view the learning interests and needs hierarchy that provides an arrangement of supportive subcategories.

Experiential Debuts. *Experiential debuts* is a cognizance by the CCG that they have a learning interest and need during work-related caveats (i.e., resident care or environmental issues [e.g., global pandemic, the context of the ALH, management communication, new technology or equipment]). This work-related realization may stimulate introspective thought resulting in awareness about self or another. Three subcategories align with this category: Observed learning needs, best practices, and learning style preferences.

Figure 11*Aim 1 - Learning Interests and Needs Hierarchy*

Observed Learning Needs. During interviews, participants conveyed examples of when they became aware there was a learning need; the subcategory *observed learning needs* involves the CCG realizing that there is a learning need observed about self or observed in other(s). Often it involves a resident condition (e.g., agitation, high blood sugar, dehydration, dysphagia), a specific caregiving skill (e.g., documentation, medication administration & managing PRN medications, behavior management), or a need in the ALH environment (e.g., improving

communication). In the first two examples below, the CCG comes to realize that they have a learning need:

I'm a diabetic myself. I know how to deal with diabetes, but with a brittle diabetic you need more info ... (P14)

There's still people (residents) I have a hard time. I can think of one in particular that's very difficult. He's disrespectful to women and a little physically abusive. Not a lot, but it's there. And those kind of situations, I feel like I'd really like to know more about how to handle, but I know that a lot of it is customized per every single person you deal with. (P12)

Whereas the following two examples, the CCG realizes their co-workers have a learning need.

Dehydration and issues around medication administration were brought up by several participants:

...A lot of the time people don't realize that they are dehydrated. They think they're drinking enough water. Even our caregivers. They don't realize that they have some form of dehydration. (P13)

People [referring to co-workers] have no idea how much to pull up [in the syringe], they might see it and it's like, oh, I'll just pull up a whole vial or they don't understand the effects of what they're giving can have on a person... I remember specifically one time I watched someone give insulin. It was just a click pen, but they didn't have a needle on it and they were sitting there, the individual trying to put it into someone's stomach. And I don't, I don't laugh. You know, I just... (P4)

Best Practice. This subcategory concerns the acknowledgment by the CCG when they have witnessed or obtained a best-practice level of skill(s) or expertise managing a resident situation or environment. Often the participant examples were individualized care examples of how they met resident needs or how they had developed their expertise during their caregiving practice:

I've learned so many tricks over the years of just if they wet their pull-up, how to put one on without taking their pants off. (P8)

I've learned the less turning, the better, especially with hospice patients. So I've gotten to the point where I can do a bed bath and a bed change and a brief change with about one and a half turns. (P10)

And there's an older gentleman who went through the Holocaust and he has really bad anxiety about it. And so my heart's there for him, but I also have a great affection for him and love to talk him down or distract him from those memories that he has. (P12)

Consistency, not changing things too much. Because I did also realize when you don't have consistency and things are changed, that will affect the resident mentally. They'll start getting anxiety, uncomfortable. But, yeah, consistency is very important. (P15)

Learning Style Preferences. The subcategory relates to how the CCG prefers to learn or master skills and/or information. When asked about their learning preference, the majority of examples shared by participants included a component of hands-on experience.

To be honest, I'm a hands on, I can read, and I can watch, but unless I do it myself, forget it. (P14)

More hands-on and doing. That's how I learn better. Nowadays, how teachers teach, I'm like, "Aargh." (P3)

Additional learning preference examples included engaging with instructors, and visually seeing and using color or music to enhance memory and having the option to experience first-hand the equipment they were using on their residents. One participant acknowledged she was a kinesthetic learner:

So, when I was doing A and P, anatomy and physiology, I really struggled with the cardiac and physiology for some reason ... I'm a kinesthetic learner. So when I do see how people work, it helps a lot... (P15)

They took people by request that got lifted in the Hoyer lifts to be able to feel how really uncomfortable it could be. (P13)

Several participants felt strongly that their caregiving skills need to include a hands-on component, especially when it comes to resident care, new technology, or equipment that is

high-risk. One participant provided several exemplars that advocated for individualizing the resident's care (e.g., transfers) based on their needs:

... if you don't have someone there to show you how a trach goes in and oh, by the way, this trach is a little different. You're going to have to pinch it to clip it in. Or you can't watch tutorial videos because there's things that happen in real life that you can't learn from a book. (P10)

We're all taught the basics of a transfer. They are told, okay, this is how you transfer. This is the only way you transfer. There's no other way to transfer other than that, that is not true. It also depends on your resident or the person that you're taking care of...So I'll give you a perfect example. We've got one resident, she's got the grippy shoes on everything, but no matter what her feet will slide. When you're transferring and you have feet sliding you're just holding the weight, period. So my leg does not go between her leg or on the other side of her legs, my foot goes right in front of her feet so it keeps her feet from sliding. Now would somebody from a book be able to comprehend that? (P10)

Trigger Point(s). The second category, *trigger point(s)*, is related to the particularities in the ALH environment (e.g., employee characteristics, resident characteristics, resident response to care provided by CCG) that may highlight or make apparent areas of learning needs or interests. Through attentiveness to their CCG practice, participants identified subcategories pertaining to a work situation(s) or an event that suggests there is a need for additional learning or support (i.e., trigger point). Some events may have a negative impact on the resident or CCG, hence possessing a potential risk of harm to resident, CCG, or organization.

New on the Job. The trigger point subcategory, *New on the Job*, became apparent when several participants recalled situations that were associated with being a new employee at an ALH:

I didn't even know who was who, or what the [resident room] numbers were, their names; you know. (P15)

What time do I do this? What time do I do that? Because we manage our own days. We're really our own boss. Nobody tells. Everything has to be done, but there's nobody

standing over us going, okay, you know it's time to do this, all right, it's time to do that. You've got to manage your own time. (P12)

Participants shared feelings, including confidence-lacking. These feelings often appear when a CCG begins work at an unfamiliar ALH site or is new to the CCG profession. Additionally, several participants expressed feeling unprepared for the work challenges and needing more training. Several participants did not feel they were prepared to practice after they passed the certification exam:

I just didn't feel confident enough because I didn't know what I was doing. (P15)

You're a certified caregiver, it's a one-week program. I sat in a classroom or, you know, and listened to someone, talk to me online and it just, and I took it, you know, a state certified test, but it had nothing really pertaining to things that I feel you need to know. (P4)

It takes time for new caregivers to get to the job and start working at the same rhythm as the other ones. (P2)

Resident Need and Case Mix. Another Trigger Point subcategory consists of emotional and physical variables that reflect the necessities, complexity, and diversity of the ALH residents' care, occasionally exceeding the CCG scope of practice or ALH accommodations:

I think the last thing I learned recently was with one of our patients. It was taught by two RNs that came when she arrived, and this resident was a very high level of care. I learned a lot of things all at once. I learned how to use a suction for the trach. I learned trach care. I learned how to remove and replace the trach. (P10)

What I didn't like about the situation is she shouldn't have ever come to the house with wounds that were that deep. They were to the bone and they were all over her buttock area. So that... And everyone that saw it went, "Oh, my gosh." But what are you going to do? You're going to try to help. I mean, she had passed within three months of us having her here. But, again, she was another situation that had been hospitalized a long time. (P10)

She was getting very violent and she was about to put a belt around my neck ... And that was last week ago. Very creepy. Like somebody said, "Oh, that's creepy." Yeah. She startled me. I was very scared. And she hit another caregiver with the lamp and pulled the hair. Very, very hard. ... That was my only salvation [phoning the police]. If it was

escalating more, I was going to call the police. What else I was going to do?... and she was very threatening. Very threatening to me. And another opportunity she was behind the doors and waiting for me and she told me, "I'm waiting for you." "What are you doing there?" "I'm for you." Oh my gosh. (P2)

New Admission. This subcategory involves residents deemed appropriate for admission to an ALH by management. The appropriateness of the resident is typically based on a pre-admission assessment prior to the resident's arrival to the ALH; however, when some residents arrive at the ALH, information pertaining to resident care is unavailable (e.g., behavioral history). Often this stifles the care, medications, and treatments provided until information arrives.

If they bring in a new resident and they have no information on the resident, so technically we don't even know anything about the resident. So we have to deal with what we got until we actually get the information. (P11)

Wish I had more information about a resident on behavioral health before I get them. (P7)

They don't understand what a care home needs for our MARS [medicine administration record] book. We need the orders. We need the name of the resident. We need the birthday. We need the name of the doctor, where the doctors at the signature. We need all that. And sometimes we get it, and sometimes we don't, and then it's a fight to actually get it because they don't understand what we need. (P10)

Sentinel Event. The final Trigger Point subcategory is *Sentinel Event* which is defined as an undesired event that may result in a negative outcome (e.g., physical or psychological injury to a patient or CCG) that is not related to the natural course of the resident's illness:

They left the food away from her. When she was reaching for the food, she ended up falling out of her chair because she presented well. And I think that happens a lot where, you know, especially thinking of it now, we have a lot of residents that kind of present themselves well. And so people don't realize they're there for a reason. You know, they give the impression they have a routine down, but they don't, they're demented or, they have Alzheimer's. Anyways, she reached forward for the food and fell over and hit her head on a dresser, which caused her to vomit. And someone came in her room and found

her kind of laying on her back, choking on vomit. Then I came in the room and showed how to roll her over on her side and called 9 1 1 and took care of the situation. (P4)

Sometimes a sentinel event may result from a mistake or negligence on the part of a CCG, but not always:

Knowing when to give, when not to give water and food, or pill, medication, in a non-crushed form, to someone who's already active [dying]. They apparently gave the person medication, and it was the day I was supposed to work too, and then he started to aspirate, while the other one took the swabby... I call it the little sucker and put it down the mouth to try to clear his throat. It pushed it down more, and he aspirated to death. I don't think he was that close when I had left the day before...and then trying to lie about the situation. I just think people need more education on medication, measuring the right morphine, and knowing when to give sips of water at a certain time. When they're active [dying], it's just comfort care. You don't need to shove things in their mouth and feeding them. (P8)

Several participants described how they have intervened with coworkers involving a resident's choking:

I've had caregivers who go up and pat them and... I'm like, "No, this person is really choking." So, I've done the Heimlich maneuver numerous times and saved their lives. And I've had to tell the other caregiver, "Maybe you need a little more education on choking, and whatnot." (P8)

Sometimes a trigger point subcategory may be present when a sentinel event is categorized. In the scenario below, the participant was *new on the job* and made a medication error. It was a traumatic event for the participant:

"I'm okay with losing my job today, but I'm not going to leave until I know this resident's okay." "Well, thank goodness there's no family to call. Nurse practitioner knew him from other places. [self-talk]" "Just relax, relax." I was crying and nervous, embarrassed. The owner came in and said, "Name of DCW" "... hey, I'm not going to fire you." "Thank you for being honest. He's [resident] going to be okay." By the end of the day, it was okay. Unfortunately, I did have to get a write-up. That was the second day. I thought, "I'm not going to go back tomorrow," and my husband says, "You go." (P8)

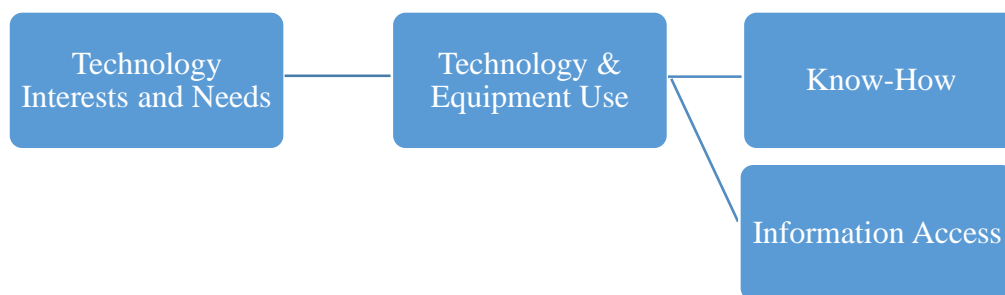
For a visual depiction of the categories, subcategories, and quote exemplars, see Appendix M

Aim 2. Technology Interests and Needs

This aim focuses on the technological use of the CCG in the ALH during work activities and the impacts to CCG learning interests and needs. Equipment is included because, increasingly, equipment has a technology component (e.g., thermometers, blood pressure, & pulse oximeter machines). One category emerged: *Use of Technology and Equipment*, which includes two subcategories. See Figure 12 to view the hierarchy of technology interests and need arranged with the supporting category and two subcategories.

Figure 12

Aim 2 – Hierarchy of Technology Interests and Needs



Technology and Equipment Use. *Technology and Equipment Use* encompasses the technology and equipment (e.g., instruments & devices) used by the CCG to facilitate delivery of care unique to the resident needs (e.g., glucometer, Hoyer lift, insulin syringe) and required by the DHS regulations (e.g., B/P, weight, temperature). Some of the instruments and devices used by the CCG assist with their work. They may include receiving or delivering information electronically (e.g., electronic MARS, walkie-talkies, smart insulin pens, and computers). Two subcategories offer insight into the Technology and Equipment Use category: *Know-How* and *Information Access*.

Know-How. This subcategory relates to the skills developed by the CCG as it pertains to the use of technology and equipment in the ALH. Participants discussed using various technology and equipment during their CCG work activities. Technology and equipment *know-how* are contingent on several factors (e.g., equipment provided by the ALH, ALH staff education policy, CCG confidence, capability, interest of CCG, resident resources, acuity, and need). Examples of usual and customary technology and equipment provided by the ALH include beds, B/P monitors, pulse ox, and a medical record system. Sometimes several versions of the equipment or devices are used at the ALH, but increasingly ALH equipment and devices are electronic:

Some beds are electronic. Some beds are regular. (P11)

Well, it's kind of like we have phones, but they're like the beeping phones to tell us of who's calling us, and then we have walkie talkies. (P11)

I have a glucometer that is also up to date and fancy. (P7)

I had never seen a Sara lift before. So, I thought, when I saw all the heavy people, I was like, oh, the old-fashioned Hoyer was such a hassle to me, it was dangerous, it was scary, and they said, "We have this new thing." (P8)

Oh, yes, the MARS. They brought those in too ... about six years ago. (P8)

Several participants provided examples of *know-how* capabilities and preferences among co-workers and themselves. Sometimes this included identification of the lack of *know-how* of co-workers or themselves when using technology:

If you cannot take a blood pressure and you always have to ask your other coworkers to do it for you, what are you learning? (P14)

Hate the crank ones [Hoyer Lift]. But I'm very proficient with the Hoyer [electronic] and the sit to stand Sara lift ... (P10)

Though technology use is increasingly pervasive in CCG work activities, several participants expressed a lack of technology confidence. In some cases, it appeared the participants' self-perspective de-valued their technology capabilities:

I use iPad, a laptop and a computer desktop. I guess I would call myself technology illiterate. (P7)

I feel like I'm not up to speed with technology in almost every realm. I just, I feel like it's an area that I could definitely do more training. (P12)

Technology and equipment (e.g., electronic wheelchair, electronic bed, Sara Lift, CPAP, smart insulin syringe) are sometimes provided by the resident, family member, or insurance carrier. The CCG *know-how* in these situations is often contingent on how independent the ALH resident is in managing their technology or equipment and the ALH procedures involved with CCG education regarding the new technology or device introduced into the ALH:

I have a little bit of experience with that [CPAP], but mostly our residents that have CPAP do it themselves. (P14)

We have several people who use CPAP machines. And we've been trained in those and the cleanliness. So really a lot of that I didn't get through caregiving. That was all learning upon arrival of needing assistance with it. (P13)

Another aspect that impacts *know-how* is if the resident's technology and equipment are not standard practice for an ALH. For example, one participant identified learning to use a trach suction machine when a resident arrived at the ALH:

I think the last thing I learned recently was with one of our patients. It was taught by two RNs that came when she arrived, and this resident was a very high level of care. I learned a lot of things all at once. I learned how to use a suction for the trach. I learned trach care. I learned how to remove and replace the trach. (P10)

Information Access. Most of the participants shared that they use their technology device, usually their cell phone, to seek out information related to resident care, while several

participants identified the EMR software as a possible resource. Information access examples includes seeking, accessing, and vetting information resources using a computer or cellphone with Wi-Fi to accommodate residents' needs:

There's also something on the iPads that they have. I don't know what it's called. I can't remember [the name of the software]. But you can like put it in [medication], and it'll tell you about it. (P14)

One participant used an app she had download onto her cellphone:

It's called Epocrates... When I don't know a lot of things when it comes to like medications, I use that. (P15)

“Google” was the search strategy for using the internet. Information-seeking inquiries performed by participants primarily concerned their resident medications (e.g., medication purpose, identifier photo of medication), a resident's medical diagnosis, or a medical term they were not familiar with:

Google is highly used. There's been times where I've come in and found pills on the floor and I've used it to identify what pill it is by the code on it so we could figure out. (P13)

I Google any medications or even a diagnosis, or if a person has this or this ... (P12)

Vetting information sites, defined as the process of checking and appraising the suitability of the information located on the internet, was rarely performed. Some participants acknowledged that vetting information was important but did not know what to look for or were unfamiliar with reliable sites.

As long as it's good information, I really... It doesn't bother me who it comes from. (P7)

I always wondered because my aunt does fact checks on everything and is really good at it. And I have no clue how she does it. ... I really don't know. I go based off the most commonly between several sites. I'll go and read one site and then I'll go to the next and read what they have to say and I just kind of ... (P13)

I'll use the internet and find a good medication page to look at because you can get almost anything off the internet. Will it be right? Not always. And if it's a very serious question, the owner will take it to the nurse that she has on staff or hospice nurse or try and get in touch with the doctor. (P10)

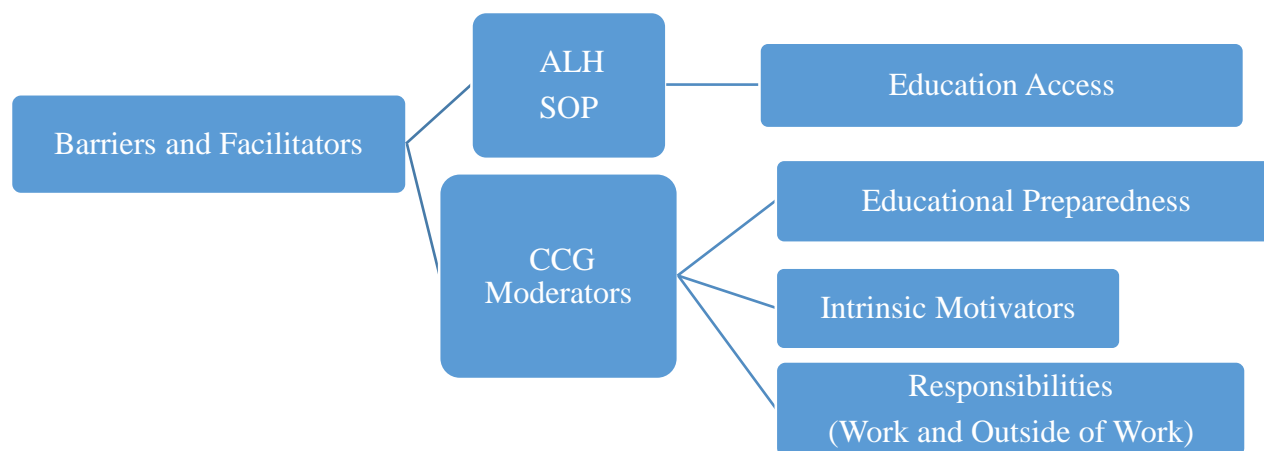
For visual depiction of the categories, subcategories, and quote exemplars, see Appendix M.

Aim 3. Barriers and Facilitators

This aim highlights barriers and facilitators used to achieve learning interests and needs of the CCG. Two categories relate to this aim: 1) Assisted living home standard operating practice and 2) Certified caregiver moderators. See Figure 13 that illustrates a barriers and facilitator hierarchy with supportive subcategories.

Figure 13

Aim 3 – Barriers and Facilitators Hierarchy



Assisted Living Home Standard Operating Practices. The category *assisted living home standard operating practices (ALH SOP)* includes the approaches made available by the ALH owners and management so the CCG is deemed sufficiently prepared to provide care to the ALH resident.

Education Access. One subcategory aligns with the ALH SOP category: *education access* includes training, orientation, and mentoring available to CCGs during their employment at an ALH. Several participants described their support for educational opportunities, such as training that would help meet their residents' care needs.

If you train somebody the right way, then you have less back training you have to go through when you find out they're doing it wrong. (P13)

Mentoring is one avenue to education access. *Mentoring* is a developmental partnership in which a person with relevant knowledge and experience (a mentor) shares knowledge and skills to support others. When participants mentioned mentoring, it was often an informal experience initiated by management or staff to assist a co-worker with a specific task.

I think she (the manager/owner) was getting feedback from other caregivers who were saying where I was lost. So she took that information, put a caregiver to my side to help me with that. And I am forever grateful because I would still be floundering today. (P12)

I actually work with a gentleman [CCG co-worker] he's 72 years old and he has never used a computer in his life. I have been teaching him how to type, I mean, he didn't know how to use a mouse. (P4)

Ongoing support by management was an integral aspect of educational preparedness for some participants. Customary support includes updating staff during meetings and texting up-to-date work-related information. It also may include financial support in pursuing education endeavors and investing in online educational software.

She (owner) sent me to school to get my certificate. (P13)

I do believe that our boss has made us so conscientious and understanding of it (i.e. COVID risk) by so much information. And she has given us incentives for things through the COVID, over prepared, we were wearing the N95s before other homes were wearing the N95s. She just implemented a lot of the stuff before the CDC did. (P14)

Some participants indicated education supports were minimal:

...a lot of time people will be thrown into, oh, you're a certified caregiver, but you've never given meds before you have no clue what you're doing, but we need you to pass meds and they have no idea what they're doing. They have no training, you know, it's because someone's just trying to put a body in there. (P4)

No. If there are somebody? Not so much. No. (Participant 2 response to having someone on staff they could ask questions concerning information or care).

Certified Caregiver Moderators. The second category, *CCG Moderators* includes factors or characteristics inherent to a CCG that may impact or alter the pursuit or participation of their learning interests and needs. Three subcategories are discussed: educational preparedness, intrinsic motivators, and responsibilities outside (of work).

Educational Preparedness. Many participants interviewed had worked in health care, often as a caregiver (i.e., HHAide, CNA), or cared for a family member (i.e., spouse, grandparent) prior to becoming an ALH CCG. Their previous work experience often gave them the necessary qualities and skills to transition to the ALH.

I have been (i.e., worked) in large facilities, in small houses and homes, and working for agencies where they send you to different houses with different people. (P2)

I worked in big facilities; I worked in rehabs. I did in-home health for a few years. I liked it. And then I transferred to working at Green Valley Hospital as admissions. (P7)

While others thought earlier life experiences in other professions was an attribute to their practice as a CCG:

I will say one of the things that helped me the most is my background. I grew up on ranches. I grew up learning how to ride and work cows. Well, by doing that, you become very aware of body functions ... (P10)

Another moderator mentioned several times was the ALH co-worker's language and technology skills. These could impact how a CCG task was assigned, or information was exchanged and communicated.

I see is the lack of education and understanding why things need to be done or the importance. And I think the language barrier comes next. (P4)

Intrinsic Motivators. The second subcategory, *intrinsic motivators*, partly explained why the participant had opted to be an ALH CCG and how they viewed themselves in the profession. Sometimes these motivators impacted the CCG's desire to expand their skill set through a formal or informal educational process. Several spoke about a calling and the joy it brought them to care for others.

The willingness to help people, to feel the satisfaction of doing something important in life. With that purpose working directly with people, feel that satisfaction at soul level. (P2)

...it got into my blood. I mean, I love it. It's very satisfying to pretty much meet people's needs all day long. (P12)

I've always had the love to care... just getting that abundance of love back from them (residents) because you're helping them is just all that I need. (P13)

Several discussed respect for older adults, while others worried about some of their co-worker's negative perceptions or predispositions towards caring for older residents.

I have a deep respect for seniors and what they've contributed and how they grew up. And they're very valuable parts of our community. (P9)

Everybody goes, "Oh, caregiving is so easy. All you do is wipe their butt." No, there's so much more to that. (P10)

There's this mindset where, oh, they're just old, put them in a home and you know, it's fine. They're gonna pass away anyway. So give him morphine, you know, I mean, and not just, it's heartbreaking to me and I know it's not for everyone. (P4)

Sometimes actions support the greater good because there is a commitment to the ALH resident, sometimes over self.

I really hope what comes out of this (research) is that you can, help people understand the importance of education and especially the medications. (P4)

I think some of us were prepared to be locked down with our residents. I was. (P14)

Some participants spoke about their desire to learn, improve their practice and develop their caregiving capacity.

For me, it's education, continuing to learn because things are always changing and not consistent. So I just say go, continue to be in school, continue as a caregiver and learn new things. (P15)

I do very much enjoy learning. I do very much. I like hands-on, and I like people explaining and the... I do enjoy. The more I learn, the more I enjoy it. (P10)

Outside (of Work) Responsibilities. The third CCG moderator may impede participation in educational activities. Demographic data indicated that participants confirmed they worked many hours; some had erratic work schedules and on-call obligations. During interviews, several participants said they were tired, acknowledged they had erratic schedules, and typically had limited sleep.

Sometimes I sleep only three hours a day. (P2)

I will work anywhere from 55 to 75 hours. (P10)

Several participants were in school and had study obligations outside of work. Others were juggling family responsibilities.

I work with a couple of girls that their husbands are caregivers and they go home and switch out the kids, you know, to work at night ... (P4)

I've got two young kids ... I am a single mom, so I've got to do everything. (P10)

Some participants valued their time off to replenish and have respite. At the same time, others had other jobs to assist them in meeting financial obligations.

I know how to clean myself and to connect with nature and the exercise ... (P2)

I do couponing and stuff just to save money and then I resell them and I do Door Dash too. (P3)

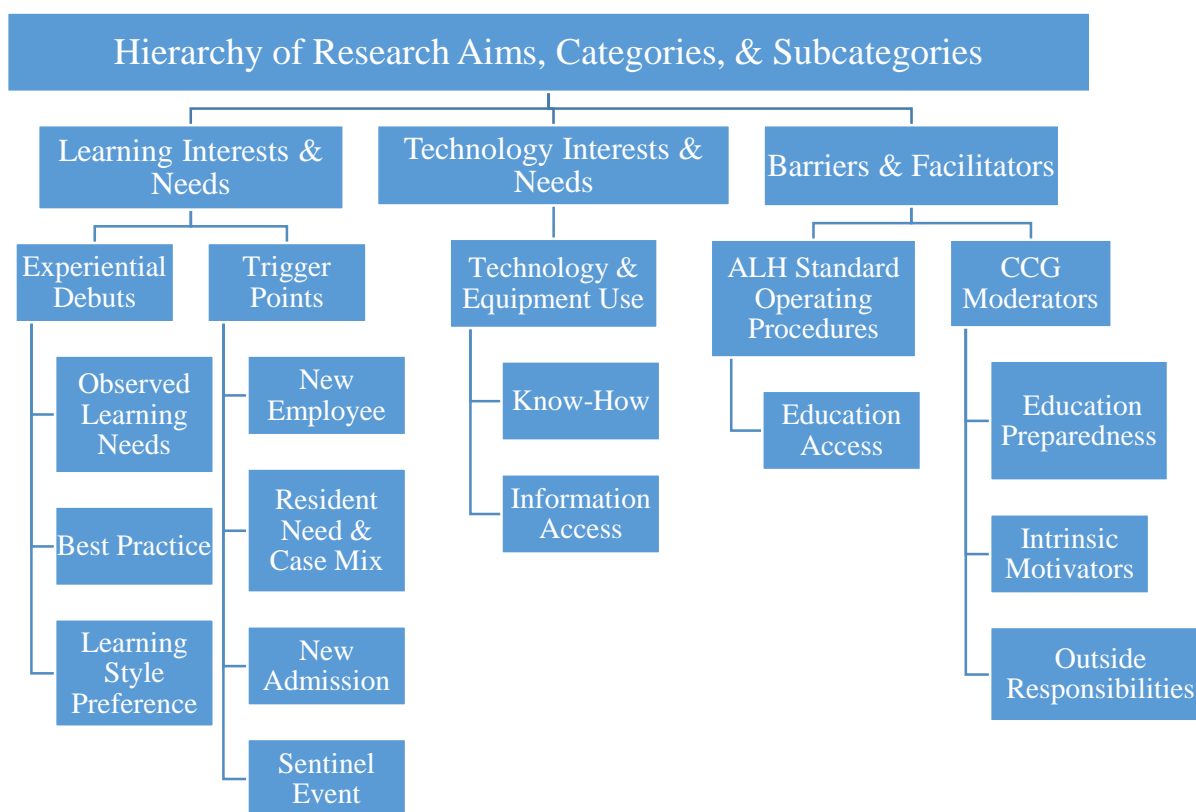
For visual depiction of the categories, subcategories, and quote exemplars, see Appendix M.

Synopsis of Research Aims Hierarchy

Three research aims (i.e., Learning Interests and Needs, Technology Interests and Needs, and Barriers and Facilitators) guided the description of findings. The presentation of the findings included 5 categories and 13 subcategories. Figure 14 presents a graphic in hierarchy form of the research findings presented in the main analysis.

Figure 14

Hierarchy of Research Aims, Categories, and Subcategories



Learning-Interest Analysis

This analysis uses descriptive-focused coding. Though the coding technique was the same as in the earlier two analyses, the emphasis was placed on developing a taxonomy or

scheme of “specific” learning interests and needs during this analysis. This narrowed-focused analysis extracted interview data and then organized data into a taxonomy of CCG learning interests and needs, presented in table form. The utility of this endeavor supports transparency (Adu, 2019, p. 26) and the transferability of this study’s findings to similar ALH environments (Sandelowski & Leeman, 2010, p. 1406) that may have similar learning interests and needs. Topics of interest were organized into eight subject categories and included interrelated knowledge and skills identified from interview data. Topics of interest typically involved an aspect of direct care skills. Examples include personal care, medication administration, behavior management, palliative and end-of-life care, and sentinel event avoidance. The extracted data of learning interests and needs are presented below in Table 10.

Table 10

Topics of Interest and Need

| Topics (Categories) | Interests and Need (Subcategories) | Selected Examples of Relevant Data |
|--------------------------------|---|--|
| Hands-on Skill Revi | Transfers and ambulation -Managing a fall in progress -Operating a Hoyer lift | ...for some reason I thought I could ambulate her by myself. And, yeah, I just tried to do it and it was all bad...(P15) |
| | Equipment -Putting a hospital bed together | I just tried to hold on once I realized, she's either going to fall, I'm going to fall. Something's going to happen |
| | Bed rolls (best practice) | ...pull-up, how to put one on without taking their pants off. (P8) |
| | Changing briefs (best practice) | A quadriplegic... a supra pubic catheter...it was getting clogged up. (P4) |
| | Catheter management (internal/external) -Suprapubic irrigation | ... flush a catheter and how to clean a catheter properly (indwelling). (P7) |
| | Wound care, assessment with staging, documentation | |
| | Colostomy bag management | |
| | Fluid management & hydration | |

Table 10 - Continued

| Topics (Categories) | Interests and Need (Subcategories) | Selected Examples of Relevant Data |
|---------------------------------------|--|--|
| Disease Management | Vital sign review -old and new technologies | <p>... wounds that were that deep...to the bone... all over buttock area...(P9)</p> <p>...a colostomy bag, I had no idea how to do it. A lot of the time people don't realize that they are dehydrated. They think they're drinking enough water. Even our caregivers. (P13)</p> <p>If you cannot take a blood pressure and you always have to ask your other coworkers to do it ... (P14)</p> |
| | Diabetic care (Type I & II) -blood sugar testing - insulin calibration, click pens & syringe administration - monitoring blood sugar over time | <p>...a brittle diabetic you need more info ...(P14)</p> <p>I think it is wild caregivers are allowed to pull up insulin...(P4)</p> <p>...a click pen...didn't have a needle on it...trying to put it into someone's stomach... (P4)</p> |
| | Alzheimer's and related dementias -Management of behavioral and psychological symptoms including threatening behaviors to self or others | <p>...how to deal with diabetics, ...what to do in different situations, ...sugar's too high, sugar is too low. (P12)</p> |
| | Anxiety -managing resident anxiety -provide emotional support strategies and stability | <p>Learning how to defend ourselves. (P6)</p> <p>...able to help them where they're not anxious...</p> <p>...we have a rhythm where I let her pick out her clothes...consistency, not changing things too much. (P15)</p> |
| Cardiac care – CHF, Wt. | <p>... I love to provide comfort... to talk him down and distract him from those (Holocaust) memories...letting her feel like things are taken care of... to put her mid at rest... (P12)</p> <p>I deal with Parkinson's, dementia, diabetes, congestive heart failure ... along with anxiety, depression... (P15)</p> | |
| Communication and Coordination | Communicating resident's medical care needs | <p>...one of my residents has congestive heart failure, which would've been nice to know ... (P15)</p> |
| Communication and Coordination | Environmental operations -shift communication -supervisor communication -communication documentation | <p>When you do change of shift, there is supposed to be communication, at least between the two shifts ... (P13)</p> |

Table 10 – Continued

| Topics (Categories) | Interests and Needs (Subcategories) | Selected Examples of Relevant Data |
|---|--|--|
| | -how to manage the resident with missing information | We have a hierarchy of who we can call... (P13) ...a new resident and ... no information ...we don't even know anything about the resident. (P11) |
| Falls: Managing and Avoidance | Fall avoidance strategies -gait belt transfers | She's either going to fall; I'm going to fall. Something's going to happen. |
| | Managing a fall in progress Managing the aftermath of a fall -skin tears -lifting from off the ground -fall documentation -fall communication -when to phone 911 | training on how to get them to their knees...(P13) falls... 9-1-1 was called, ...there was a skin tear that was so severe that there was so much loss of blood. (P8) |
| Medication Management & Administration | Medication administration -calibration of medications -PRN medication management | There's not enough pharmaceutical education as a caregiver. (P7) ... how not to mix certain medications...(P7) |
| | Medication errors What to do -reporting & resident monitoring -what to expect -managements' response | measuring the right morphine. (P8) (staff) have no clue what the PRNs are for, how do you know when to give it... (P4) ...probably 90% of medications don't get given when they're supposed to be. (P4) |
| | Medication information -searching & vetting accurate information sites | ...Thank you for being honest... He's (the resident) is going to be okay. (P8) |
| | | I'll use the internet and find a good medication page to look at because you can get almost anything off the internet. (P10) |
| Palliative and End of Life Care | Measures to take during end of life care and active dying process -positioning, food, and fluid adjustments -comfort measures -pain management -medication administration -communication & coordination | Severely overlooked but extremely needed is hospice and how to be prepared for that. (P10) ... actively dying and what sign to look for. (P7) <u>...individual comfortable ...</u> , ...positioning, ...comfortable in the bed, ... fluid or food ..., ...chances of aspirating... ...measuring the right morphine..., the right doses, the right times. And then when the time does come and they are deceased, of the right people to call, which is protocol. (P8) |

Table 10 – Continued

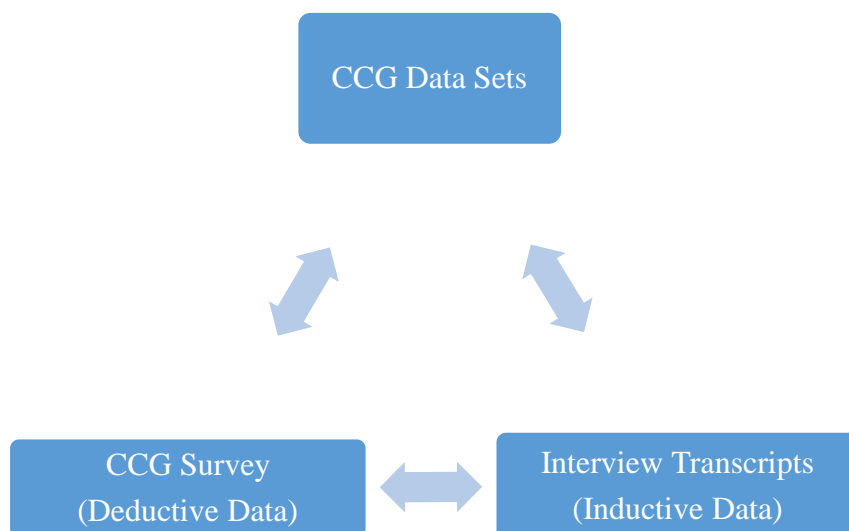
| Topics (Categories) | Interests and Needs (Subcategories) | Selected Examples of Relevant Data |
|-----------------------------------|--|--|
| Sentinel Event Avoidance | Falls Transfers Hoyer Lifts | ...more information, more education about Hoyer lifts as a caregiver. (P7) |
| | Choking | ...put it (swabby) down the (residents) mouth to try to clear (residents) throat. It pushed it (medication) down more, and (resident) aspirated to death. (P8) |
| | Medication Errors | |
| | Sentinel Event Reporting | |
| Caregiver Injury-Avoidance | Safe ergonomic actions -Back injury | Work-Related Characteristics: Work injury (n=6/46%) yes) |
| | Infection Control -Airborne | I ended up with COVID, and we were so short-staffed and I got really sick....it was rough...we lost a lot of residents. (P4) |
| | Workplace Violence - resident | She was getting very violent, and she was about to put a belt around my neck.....she was very threatening...(P2) |

Methodological Triangulation

Triangulation, a methodological strategy (Figure 15) was used to identify the convergence of participant data obtained through two different sources: the analyses derived from interview transcripts and survey questions (Flick, 2018b).

Findings

Table 11 offers five examples of triangulation of inductive and deductive data obtained during this inquiry. Topics of interest that emerged during QCA aligns with the CCG survey findings. Participants learning interests are focused on improving their caregiving knowledge and skills. Table 5 examples include sentinel event avoidance, medication management and administration, falls – managing and avoidance, disease management, and communication and coordination.

Figure 15*Triangulation of Data Sources***Table 11***Triangulation of Deductive and Inductive Data*

| Selected Questions from Caregiver Survey | Extremely Interested | Very Interested | Moderately Interested | Slightly Interested | Not at all Interested | Total (N) | QCA Derived Topics |
|--|-----------------------------|------------------------|------------------------------|----------------------------|------------------------------|------------------|--|
| Learn how to handle scary situations when you are all alone (Choking, Heimlich, Power Outage, CPR) | 61% (n=8) | 23% (n=3) | 8% (n=1) | 8% (n=1) | 0% | n=13 | Sentinel Event Avoidance |
| Learning more about assessing antipsychotic medication side effects | 54% (n=7) | 23% (n=3) | 23% (n=3) | 0% | 0% | n=13 | Medication Management & Administration |
| Avoiding resident fall strategies and steps to take after a traumatic fall | 46% (n=6) | 46% (n=6) | 0% | 0% | 8% (n=1) | n=13 | Falls- Managing and Avoidance |
| Alzheimer's and related dementias | 69% (n=9) | 23% (n=3) | 8% (n=1) | 0% | 0% | n=13 | Disease Management |
| Recognizing and reporting resident abuse and neglect | 61% (n=8) | 15% (n=2) | 15% (n=2) | 0% | 0% | n=13 | Communication and Coordination |

Note: Selected Likert scale questions are located in the Caregiver Survey (Appendix H).

Summary of Chapter

Chapter V contains the results from this qualitative descriptive inquiry of learning and technology interests and needs of ALH CCG. Findings presented include characteristic information of 14 participants, three analyses, and examples of a trustworthiness component, data triangulation of results. Using the QCA descriptive-coding technique, three analyses offers a different perspective: pre-aims analysis provides an inductive analysis, the main analysis utilizes the three interrelated research aims to deductively guide subcategory development, and the third analysis presents a taxonomy of CCG learning-interests. The main analysis included 5 categories and 13 subcategories.

Significant Findings

The significant findings of this study include CCGs have learning interests and needs that are focused on providing direct care to the resident in the ALH, usually have access to technology for accessing health-related information and use multiple kinds of health-related technology to care for ALH residents. Another significant finding is that CCGs work hard, have long hours, with minimal time off to attend educational offerings. Educational offerings should include skills practice and hands-on experience when indicated. Findings also suggest CCGs have a high level of workplace risk of injury (e.g., back injuries, dehydration, bodily harm from residents, mental anguish, and exposure to infection). Next, Chapter VI, the final chapter, will include a discussion of the findings, practice implications, and further research recommendations.

Qualitative work is meant to add insight – to take us somewhere beyond what we already know.

- Sally Thorne, *Nursing Inquiry*, 2020, p. 2

CHAPTER VI: DISCUSSION

The final chapter contains a discussion of the results and synthesizes the findings presented in Chapter V. To accomplish this, Chapter VI is divided into five sections: First, an overview of the study's findings is presented, followed by the relevance of the finding. Next, strengths and limitations are addressed. Then nursing implications for practice and research. Finally, a brief concluding summary.

Overview

The ALH DCW is often viewed as an unskilled, low-skilled entry-level worker (Stone, 2004; Drake, 2020; Osterman, 2018). Previous research has focused on DCW's learning and technology needs in other settings, but rarely has research solely focused on or queried DCW as working in ALH (Gaugler & Hobday, 2016; McCurry et al., 2012). Locating similar studies on the DCW learning and technology interests and needs is limited. Those few existing studies rarely segregate or distinguish between smaller and larger assisted living environments. But context matters!

The purpose of this study was to look at the learning and technology interests and needs from the participants' perspective. This study is one of the first to empirically investigate the ALH DCW, specifically the learning and technology needs and interests from the perspectives of ALH DCW. Using QCA (Bernard et al., 2017), findings from participant interviews indicate that DCWs have an array of learning interests and needs, most often related to their resident's care needs (e.g., medication management, behavior management, end-of-life care, sentinel events).

They also use many kinds of technology devices. Almost half of those interviewed have an interest in continuing with some form of formal education. Barriers to participating in a learning event include the DCW's long and erratic work schedules, poor pay, and off-work responsibilities (e.g., family, caregiving responsibility, and second job).

Collecting Study Data During a Global Pandemic

A portion of this study's data was gathered during a global pandemic. Due to pre-existing conditions as contributing factors, the COVID-19 outbreak was officially declared a pandemic by the World Health Organization (WHO) on March 11, 2020 (Ghebreyesus, 2020). It was highly impactful to older adults (Shahid et al., 2020) and their caregivers. Several participants shared the mental and physical trauma they experienced caring for their residents, sobbing outside resident rooms, working short of staff, and working sick while wearing shower curtains for PPE.

Though data are scant on ALHs, it appears that COVID-19 cruelly impacted both the DCW and their residents of ALHs (Thomas et al., 2021). While eventually, an effective vaccine became available that has eased the situation, there are no reliable data concerning the continuing impact of COVID-19 on these populations. It is well known that the death rates for these two populations were high. However, the actual numbers have yet to be discovered (Thomas et al., 2021).

This dearth of data is due to weaknesses in the reporting requirements of both federal and state agencies that continue to not unambiguously recognize the experiences of smaller assisted living settings (Thomas et al., 2021). With these issues in mind, it is clear that data gathering for this study was completed at a unique and critical time. Currently, another global outbreak is

underway, monkeypox. The US capabilities of communicable disease surveillance, tracing, and risk assessment continues to lag (Maxmen, 2021).

Relevance of Findings

Their Image, Their Reality, and the Future Need for the Certified Caregiver

Due to the lack of appreciation, the low pay, and the minimal training, DCWs are very often characterized as being low-skilled workers. Sadly, this often becomes an inaccurate self-fulfilling image (Drake, 2020). This study illuminates that the ALH DCW works hard, is effective, and is committed to improving resident care needs. The findings of this study support the need for essential and ongoing learning opportunities for ALH DCWs. These learning activities should be tailored to the needs of both the DCW and the residents they care (Stone & Bryant, 2019). As examples, participants in this study identified vital and life-critical learning interests (e.g., insulin administration, wound care, trach care, sentinel events, work-related injuries) and indicated they are interested in engaging in learning events, time permitting, and using many different kinds of technology in their care activities.

Direct care workers, working in assisted living homes are a subset of the largest job sector in the United States (Campbell et al., 2021). It is estimated that more than 3.4 million caregivers that will be needed by 2030. Perversely, as the need for caregivers increases, the number of caregivers is shrinking (Scales & Lepore, 2020). Without a major intervention, this trend will continue, and DCWs will be increasingly hard to find. As of yet, initiatives at the federal level have proven difficult or impossible to enact. In the ensuing years, states, not the federal government, will be the breeding ground for innovation (Super, 2020).

Context Matters – The Assisted Living Home

This inquiry attempts to advance the understanding of a paid caregiver population that has rarely been recognized and generally overlooked in the research literature. While DCWs have been studied in larger assisted living facilities, most reporting entities and researchers do not acknowledge nor segregate data findings of the ALH environment from larger facilities (Drake, 2020). Another reason ALHs are difficult to research is that they are challenging to identify because of differing state and local oversight. Regulations are often challenging to define what constitutes an ALH. The largest percentage of ALHs reside in western states, and most are incorporated as for-profit entities (Sengupta et al., 2022). The ALH is typically sequestered in residential neighborhoods, their residents are primarily private pay, and the few businesses, employee, and resident reporting requirements are convoluted, confusing, meager, and not consistently enforced (GAO, 2018).

The Evolution of the Assisted Living Home Continues

In Arizona, the physical grounds or facility of a ALH is typically a residential home in a city neighborhood that has been adapted to accommodate 8 to 10 resident beds. Other adaptations include front yard redesigns to accommodate increased parking, enclosing garages to increase bed capacity, and widening inside hallways and door wells to accommodate medical equipment access (e.g., medication carts, hospital beds, Hoyer lifts).

The evolution of the ALH environment from a social model to a medical model (Zimmerman et al., 2020) partly explains the increase in caregiving activities and requirement of the ALH DCW. This study provides insight into the care ALH DCWs provide; sometimes, this includes *skilled nursing care* that was once reserved by those with a nursing license (i.e., LPN,

RN). This study's findings support one of the few studies that provide insight into the DCWs providing skilled-level care (Han & Kunik, 2017). The findings from the analyses (Chapter IV) offered a complex and interrelated understanding of factors that impact the ALH DCW learning and technology interests and needs. Earlier findings support the significance of context when comparing larger ALF with ALHs (Zimmerman et al., 2003). Environmental impacts include resident case-mix, care policies, and admission assessment criteria (Zimmerman et al., 2020).

Many of the demographic findings (e.g., work injuries, low pay, unrealistic work expectations) mirror what is reported nationally concerning other DCW environments (e.g., nursing homes, ALF, home health) (Scales, 2021). However, findings from this inquiry suggest that Arizona ALH DCWs provide a unique and expanded scope of practice reflected in their learning interests and needs (Table 10). Training and skill development should reflect their expanded scope of practice (e.g., diabetic management – insulin administration, catheter care, trach care, wound care) and use of technology (e.g., electronic documentation systems). Acknowledging that the ALH DCWs are unique because of their environment, reporting structure, clinical decision expectations, expanded work responsibilities, and because of this, it is imperative to draw directly on ALH DCW experiences to understand the range of challenges they face on the job and incorporate consumers' perspectives where appropriate and other evidence and expertise (Thomas et al., 2020). A recent report released (Campbell, 2021) advocates for strengthening education and training standards and suggest establishing national direct-care "competency" standards focused on skills is needed.

Strengths and Limitations

Strengths

The main strength of this study was acknowledging the worth of DCW in the context of the ALH. It is one of the few studies that has directly interviewed DCWs and one of the first studies to explore their learning and technology interests and needs from their perspective. The study's sample was representative of the population's age range and diversity, except for men. Participants were purposively sampled to gain diverse viewpoints. During data collection, the geographic area was expanded to include city and rural representation because geographic location often can cause some variance in findings, even though participant characteristics may be similar (Creswell, 2003; Patton, 2002). Another strategy to encourage a variety of findings was limiting the number of participants from a single ALH.

Another strength of this study was its' methodological alignment. The study's theoretical framework and complimentary research design supported transparency and reflection by the PI. Peplau's IRT conceptual framework (orientation phase) placed the PI at the heart of the research process along with the participant as knowledge was generated (Field, 1979). The IRT orientation phase was instrumental and spawned interviewing techniques during data collection (Takahashi, 1992), enhancing the interview encounter with participants and providing a series of steps that involved planning, action, fact-finding, and evaluation (i.e., interpersonal & intrapersonal). Although it was time-consuming, the semi-structured interview method lent itself to an interactive data collection method. Systematic activities allowed for interview questions to be modified and revised according to the evaluation of the afore action. Concerning researcher bias. Peplau rejected the objective stance of the disinterested nurse (Field, 1979) . In this case,

the “interested” nurse was the PI, whose vested interest was to generate enough data to answer the research question. The human factors framework (i.e., AUTOS) helped identify and organize concepts that pertain to the DCW in analysis I. However, the PI found it challenging to use as a hierarchical tool during construct development. Shadow data assisted with new information discovery. Examples of shadow data included the PI attending classes related to the subject matter. Examples include attending several DHS trainings, ALH manager education events, and contacting knowledgeable (e.g., informants, experts). Using software developed explicitly for qualitative data analysis (i.e., NVivo) assisted with managing large amounts of qualitative data, flexibility with organizing data, and a level of detail that supports full disclosure of findings. Analysis I was only possible by using qualitative database software. The downside was the time it took to learn the software and the expense of licensure fees. Finally, transferability of findings is limited to similar settings with similar state regulations (e.g., licensed for 8-10 residents, medications administered by DCW, no staffing ratios, initial training requirements).

Limitations

A limitation of this study was the time and effort it took to recruit study participants. The recruitment and interview process was challenging during a global pandemic. Another limitation was none of the participants that self-identified as men were successfully recruited. Male representation may have enriched the study findings and provided a more comprehensive view of stakeholder experiences. Also, this study was primarily limited to recruiting through ALH managers that felt comfortable with the PI and not necessarily representative of the full scope of ALHs. Some ALH managers and ALH owners were reluctant to share the study information with their DCW staff, and some ALH managers went out of their way to limit access to potential

participants. Finally, though it was anticipated (Chapter IV Sampling Frame), DCWs not interested in the subject matter may not have inquired about the study, and therefore were not included in the research findings.

Conclusion

Practice Implications for Nursology

Historically, “professional” nursing has provided significant contributions to bedside care. Often this bedside care was equal to the other healthcare factors delivered by doctors, pharmacists, and therapists. In many instances, bedside nursing care was the determining factor in improving a patient’s health. However, nursing has ceded many care responsibilities over the years to other professions. In other words, the profession has abdicated specialized and novel care areas to other disciplines. Examples include physical and respiratory therapy (Weilacher, n.d.).

Initially, the scope of these practices was performed by nurses well. When they were allowed to become separate professions, nursing diminished their scope of practice by handing these responsibilities to other professions. Peplau referred to this phenomenon as the great giveaway (Peplau, 1965). As a case in point, strong indications are that the long-term care environments – the assisted living home and their direct care workforce are the next great giveaway.

This study’s findings suggest that, increasingly, DCWs provide skilled nursing care in ALHs. Nevertheless, regulatory entities, such as state boards of nursing which should have a significant amount of oversight responsibility, are not enthusiastic about applying this oversight. This seems to be the case in Arizona. The Nursing Care Institution Administrators and Assisted

Living Facility Managers has oversight for protecting the public by regulating the educational standards, testing, and professional conduct of DCWs.

As other disciplines, pharmacists (Coulson & Blaszczyk, 2016) and physicians (Dys et al., 2020) continue to enter the ALH business. They perform activities once considered within the nursing scope (e.g., resident care plan management & direct care education). It makes one wonder will the ALH be another loss for the nursing profession. Will our profession be judged by how we ignore those at the bottom of the caregiving rung? Suppose the nursing profession decides to accept the ALH challenge. In that case, the profession could play essential roles in delivering direct care education in a rapidly expanding healthcare sector, and by supporting ALH residents with a more holistic approach. There is so much work to be done. Perhaps begin with developing a community-based stakeholder group (i.e., ALH managers, DCWs, Home health experts) to facilitate DCW standards of care and job-related performance standards with competency checklists (e.g., glucometer use and insulin administration).

Research Implications for Nursology

The ALH DCW's role and responsibilities are expanding as their residents become more fragile and complex. Once a cottage industry, expansion of the ALHs industry will continue, especially with the increasing probability of nursing home closures (McKnights, 2022). It is not unreasonable to predict that today's nursing home residents will reside in some form of assisted living environment tomorrow. Suppose the nursing profession decides to stay in the long-term care arena. In that case, research should focus on the population health in the context of the ALH, while acknowledging the DCW's expanding complexity of care roles. Areas of research

could include workflow processes such as teamwork and communication procedures and clinical decision-making within the ALH structure.

Other research initiatives should include developing and offer interventions designed specifically to benefit the ALH resident (i.e., function-focused care interventions) and their direct caregiver (i.e., new employee skills checklists, mentoring program). Last but not least, specially designed learning and skill review opportunities and information-sharing programs developed for DCW and the ALH resident under their care.

Summary of Chapter

This qualitative descriptive inquiry addresses a gap in learning and technology interests and needs of the DCWs working in ALH. Overlaying an aspect of a well-established nursing theory (Peplau's IRT Orientation Phase) with a human factor model (Boy's AUTO Framework) sustained methodological oversight and trustworthiness actions during this inquiry, including a self-reflective examination by the PI during data analyses. One research question guided three analyses providing evidence that ALH DCWs have significant learning interests and needs and use an array of technology in the ALH. Successfully fulfilling these learning needs would safeguard residents and DCWs from injury or death. Findings strongly suggest that many DCWs want to pursue and attend learning events. However, they would be hard-pressed because of limited resources and time. Participants often reported working long and often irregular hours, making minimal pay. Study findings indicate a need for foundational work for future nursing intervention and practice research. They also suggest that federal policy and oversight are needed to address pay inequity, workplace and resident injury, and data needs.

APPENDIX A:
LITERATURE REVIEW II SEARCH TERMS AND STRATEGIES

All abstracts were reviewed.

PubMed search MeSH terms used:

((("Education, Distance"[MeSH]) OR "Education, continuing"[MeSH]) OR "Inservice Training"[MeSH])) AND (((("Assisted Living Facilities"[MeSH] OR "assisted living" OR "care home" OR "senior living" OR "retirement home")) OR "Housing for the Elderly"[MeSH])) AND ("Caregivers"[MeSH] OR careworker OR "care worker" OR "health aide" OR "nursing aide")) AND (((("Education, Distance"[MeSH]) OR "Education, Continuing" [MeSH]) OR "Inservice Training"[MeSH]))

PubMed Search: = 9 Results

1. Included (I): Dakin E, Quijano LM, McAlister C.J (2011). Assisted living facility administrator and direct care staff views of resident mental health concerns and staff training needs. *Gerontol Soc Work*. Jan;54(1):53-72. doi: 10.1080/01634372.2010.530534
2. Included (D): Lopez C, White DL, Carder PC.J *Appl Gerontol*. 2014 Feb;33(1):97-120. doi: 10.1177/0733464812463982. Epub 2012 Nov 1.
3. Excluded/Reviewed article from UK: Patel RS, Walls KL, Drugan CS. *Community Dent Health*. 2013 Dec;30(4):200-3.
4. Excluded/Reviewed article: Teri L, Huda P, Gibbons L, Young H, van Leynseele *J.Gerontologist*. 2005 Oct;45(5):686-93. (Study well documented, ALF too big to include in this review but interesting regarding dementia management via behavior intervention & staff training).
5. Excluded/Reviewed abstract: Noelker LS, Ejaz FK, Menne HL, Bagaka's JG. *J Aging Health*. 2009 Feb;21(1):85-101. doi: 10.1177/0898264308328641.
6. Excluded/Reviewed article from UK: Corbett A, Nunez KM, Smeaton E, Testad I, Thomas AJ, Closs SJ, Briggs M, Clifton L, Gjesten MT, Lawrence V. *Int J Geriatr Psychiatry*. 2016 Dec;31(12):1354-1370. doi: 10.1002/gps.4445. Epub 2016 Feb 21. (from UK – study dementia & pain – developing policy for home – qualitative study – another article that reflects the UK is more progressive than the US)
7. Excluded/Reviewed abstract from LTC: Williams J, Kaasalainen S, Hadjistavropoulos T, Scudds R, Thorpe L, Neville S, Tremeer J, Andersen D. *Disabil Rehabil*. 2011;33(5):423-32. doi: 10.3109/09638288.2010.498555. Epub 2010 Jul 1.

8. Excluded/Reviewed abstract reviewed from UK: Petyaeva A, Kajander M, Lawrence V, Clifton L, Thomas AJ, Ballard C, Leroi I, Briggs M, Closs J, Denning T, Nunez KM, Testad I, Romeo R, Johar I, Corbett A. *Int J Geriatr Psychiatry*. 2018 Jan;33(1):221-231. doi: 10.1002/gps.4727. Epub 2017 May 5.
9. Excluded/Reviewed abstract - from UK: Lawrence V, Fossey J, Ballard C, Ferreira N, Murray J. *Int J Geriatr Psychiatry*. 2016 Mar;31(3):284-93. doi: 10.1002/gps.4322. Epub 2015 Jul 20.

Ovid – Advanced Search

1st Search: = 3 identified: 3 Reviewed and 2 Included

Search Terms:

Personal care worker* OR Direct care worker* OR Paid care worker* AND Assisted living home* OR Assisted Living Facilities* OR assisted living* OR care home* OR senior living* OR retirement home* OR Housing for the Elderly* AND Education, Distance* OR Education, Continuing* OR Inservice Training*

1. Included Lopez, White & Carder (2014) (Included – see D)
2. Included: White & Cadiz (2013)(Included – see H) *Journal of Aging & Social Policy*. 25(4):281-300
3. Excluded: Menne, Ejaz, Noelker, Jones (2007) - (*Gerontology & Geriatrics Education*. 28(2):91-108.

2nd Search: = 29 citations identified: 27 Excluded after Abstract Review

Search Terms:

(Assisted living home* or Assisted Living Facilities* or assisted living* or care home* or senior living* or retirement home* or Housing for the Elderly*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]

(Personal care worker* or Direct care worker* or Paid care worker*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]

1. Included (H) - Kelly C; Craft Morgan J; Kemp CL; Deichert J. *Journal of Applied Gerontology*. 733464818757000, 2018 Feb 01.(used in paper but not
2. Included (G)- Gaugler JE; Hobday JV; Robbins JC; Barclay MP. *Gerontology & Geriatric Medicine*. 2, 2016 Jan-Dec.
3. Excluded/Reviewed article: Ball MM; Lepore ML; Perkins MM; Hollingsworth C; Sweatman M. *Journal of Aging Studies*. 23(1):37-47, 2009 Jan. (*ALF bedsize too big*)
4. Excluded: Burgess EO; Barmon C; Moorhead JR; Perkins MM; Bender AA. *Journal of Applied Gerontology*. 37(4):397-418, 2018 Apr.
5. Included (Q): Dobbs D; Kaufman S; Meng H. *Gerontology & Geriatric Medicine*. 4:2333721418765522, 2018 Jan-Dec.

6. Excluded: Hussein S; Ismail M; Manthorpe J. *Health & Social Care in the Community*. 24(5):547-56, 2016 09.
7. Included (O): Resnick B; Galik E; Vigne E; Carew AP. *Health Education & Behavior*. 43(3):296-304, 2016 06.
8. Excluded: Kwong EW; Hung MS; Woo K. *BMC Geriatrics*. 16(1):192, 2016 11 25.
9. Included (P): Galik E; Resnick B; Lerner N; Hammersla M; Gruber-Baldini AL. *Gerontologist*. 55 Suppl 1:S13-26, 2015 Jun
10. Reviewed Article - Beeber AS; Zimmerman S; Reed D; Mitchell CM; Sloane PD; Harris-Wallace B; Perez R; Schumacher JG. *Journal of the American Geriatrics Society*. 62(5):805-11, 2014 May.
11. Included (D): Lopez C; White DL; Carder PC. *Journal of Applied Gerontology*. 33(1):97-120, 2014 Feb.
12. Excluded: McGilton KS; Boscart VM; Brown M; Bowers B. *International Journal of Nursing Studies*. 51(6):917-26, 2014 Jun.
13. Excluded/Reviewed article: Castle NG; Handler SM; Wagner LM. *Research in Gerontological Nursing*. 7(1):25-32, 2014 Jan-Feb.(Small ALH not ID)
14. Included: Resnick B; Galik E; Gruber-Baldini A; Zimmerman S. *Journal of Applied Gerontology*. 32(3):280-301, 2013 Apr. (community too big)
15. Excluded/Reviewed article: White DL; Cadiz DM. *Journal of Aging & Social Policy*. 25(4):281-300, 2013. (Small ALH not ID)
16. Excluded: Castle NG; Wagner LM; Sonon K; Ferguson-Rome JC. *Joint Commission Journal on Quality & Patient Safety*. 38(8):375-82, 2012 Aug.
17. Excluded: Shenk D. *Culture, Medicine & Psychiatry*. 36(3):535-56, 2012 Sep.
18. Excluded/Reviewed article: Resnick B; Galik E; Gruber-Baldini A; Zimmerman S. *Journal of the American Geriatrics Society*. 59(12):2233-40, 2011 Dec.
19. Excluded/Reviewed article: McKenzie GL; Teri L; Salazar MK; Farran CJ; Beck C; Paun O. *AAOHN Journal*. 59(4):173-80, 2011 Apr.
20. Included (J) - Hyer K; Molinari V; Kaplan M; Jones S. *International Psychogeriatrics*. 22(6):864-73, 2010 Sep.
21. Excluded/Reviewed article: Mitty E; Resnick B; Allen J; Bakerjian D; Hertz J; Gardner W; Rapp MP; Reinhard S; Young H; Mezey M. *Nursing Administration Quarterly*. 34(2):162-71, 2010 Apr-Jun.
22. Excluded/Reviewed article: Brannon SD; Kemper P; Barry T. *Health Care Management Review*. 34(3):284-93, 2009 Jul-Sep.
23. Kemp CL; Ball MM; Perkins MM; Hollingsworth C; Lepore MJ. *Gerontologist*. 49(2):224-35, 2009 Apr.
24. Excluded/Reviewed abstract: Ejaz FK; Noelker LS; Menne HL; Bagaka's JG. *Gerontologist*. 48 Spec No 1:60-70, 2008 Jul.
25. Excluded/Reviewed article: Kemper P; Heier B; Barry T; Brannon D; Angelelli J; Vasey J; Anderson-Knott M. *Gerontologist*. 48 Spec No 1:17-25, 2008 Jul.
26. Excluded/Reviewed article: Chou RJ; Robert SA. *Journal of Health & Social Behavior*. 49(2):208-22, 2008 Jun.(findings support DCW work environment)
27. Excluded/Reviewed: Brannon D; Barry T; Kemper P; Schreiner A; Vasey J. *Gerontologist*. 47(6):820-9, 2007 Dec.

28. Excluded/Reviewed article: Menne HL; Ejaz FK; Noelker LS; Jones JA. *Gerontology & Geriatrics Education*. 28(2):91-108, 2007.
29. Excluded: Black HK; Rubinstein RL. *Journals of Gerontology Series B-Psychological Sciences & Social Sciences*. 60(1):S3-S10, 2005 Jan.

3rd Search: = 6 citations identified: Excluded after Abstract Review

Search Terms:

(Personal care worker*OR Direct care worker*OR Paid care worker*).mp.(Assisted living home*OR Assisted Living Facilities*OR assisted living*OR care home*OR senior living*OR retirement home*OR Housing for the Elderly*).mp. Personal care worker*OR Direct care worker*OR Paid care worker*AND Assisted living home*OR Assisted Living Facilities*OR assisted living*OR care home*OR senior living*OR retirement home*OR Housing for the Elderly*AND Education, Distance*OR Education, Continuing*OR Inservice Training*(((exp Education, Distance/) OR exp Education, continuing/) OR exp Inservice Training/)AND (((exp Assisted Living Facilities/ OR assisted living OR care homeOR senior living OR retirement home)) OR exp Housing for the Elderly/) AND (exp Caregivers/ OR careworker OR care worker OR health aide OR nursing aide) AND (((exp Education, Distance/) OR exp Education, Continuing /) OR exp Inservice Training/)

1. Excluded/Reviewed Abstract – UK study: Petyaeva A; Kajander M; Lawrence V; Clifton L; Thomas AJ; Ballard C; Leroi I; Briggs M; Closs J; Dening T; Nunez KM; Testad I; Romeo R; Johar I; Corbett A. (2018). Feasibility of a staff training and support programme to improve pain assessment and management in people with dementia living in care homes. *International Journal of Geriatric Psychiatry*. 33(1):221-231, 2018 Jan.
2. Excluded/Reviewed article from UK: Corbett A; Nunez KM; Smeaton E; Testad I; Thomas AJ; Closs SJ; Briggs M; Clifton L; Gjestsen MT; Lawrence V. (2016). The landscape of pain management in people with dementia living in care homes: a mixed methods study. *International Journal of Geriatric Psychiatry*. 31(12):1354-1370.
3. Excluded/Reviewed abstract - from UK: Lawrence V; Fossey J; Ballard C; Ferreira N; Murray J. (2016). Helping staff to implement psychosocial interventions in care homes: augmenting existing practices and meeting needs for support. *International Journal of Geriatric Psychiatry*. 31(3):284-93.
4. Excluded/Reviewed Abstract – from England: Patel RS; Walls KL; Drugan CS. (2013). Stakeholder involvement in designing an oral care training package for care home staff. *Community Dental Health*. 30(4):200-3.
5. Included: Dakin E; Quijano LM; McAlister C. (2011). Assisted living facility administrator and direct care staff views of resident mental health concerns and staff training needs. *Journal of Gerontological Social Work*. 54(1):53-72.
6. Excluded/Reviewed Abstract – LTC: Williams J; Kaasalainen S; Hadjistavropoulos T; Scudds R; Thorpe L; Neville S; Tremeer J; Andersen D. (2011) A qualitative investigation of injurious falls in long-term care: perspectives of staff members. *Disability & Rehabilitation*. 33(5):423-32.

Additional Examples of Database Searches

| | | | |
|--|-------------------------------|---|---|
| <u>PubMed:</u> **Similar articles (Select 19910884) **Similar articles (Select 21170779) **Related articles (Select 24239014) **Search (assisted living) AND #159 | 107 153 12 11 | <i>Reviewed abstracts and, when indicated, articles.</i> <i>Already had most</i> | <i>Duplicate studies and any studies where DCWs worked in a nursing home or large assisted living facilities and any foreign locations were removed.</i> <i>Six articles kept for article review</i> |
| <u>CINAHAL</u> Care workers & Adult care home <u>CINHAL</u> : Care workers assisted living homes; education Care Workers Assisted living homes; Carehome education ** <u>PsycINFO</u> : care worker, education, inservice, assisted living facilities Careworker and training or inservice and assisted living home <u>Clinicaltrials.gov</u> : assisted living and residential care = 45 current / 96 total hx of residential care. | 31 96* 129 4** 45 | | <i>*Reviewed 96 citations and abstracts. Yield two articles that were selected for review.</i> <i>**The 4 articles identified in PsycINFO were exploded in PubMed. See Above</i> |

APPENDIX B:
THE UNIVERSITY OF ARIZONA INSTITUTIONAL REVIEW BOARD APPROVAL
LETTER



Human Subjects
Protection Program

1618 E. Helen St.
P.O. Box 245137
Tucson, AZ 85724-5137
Tel: (520) 626-6721
<http://hspp.arizona.edu/compliance/home>

Date: April 07, 2021
Principal Investigator: Christina Lee Wyles
Protocol Number: 2103632435
Protocol Title: Exploring the Learning and Technology Needs and Interests of Certified Caregivers Working In Assisted Living Homes

Determination: Approved
Expiration Date: April 05, 2026

Documents Reviewed Concurrently:

Data Collection Tools: *Appendix H CC Survey_3_2021.docx*
Data Collection Tools: *Appendix I Interview Guide and Self Evaluation_3_10.docx*
HSPF Forms/Correspondence: *IRB_Wyles_application_v2019-12_CON_3_15_2021 (1).pdf*
HSPF Forms/Correspondence: *Wyles CC Appendix waiver_v2019-08_March_2021.pdf*
HSPF Forms/Correspondence: *Wyles list_of_research_personnel_v04-2020_0 (1).pdf*
Informed Consent/PHI Forms: *Wyles_ICF - SBS externally-funded consent_form_v2020-10-15.doc*
Informed Consent/PHI Forms: *Wyles_ICF - SBS externally-funded consent_form_v2020-10-15.pdf*
Other: *Wyles Response to Holmes_3_2021.docx*
Participant Material: *Appendix K Information about the study_3_2021.docx*
Participant Material: *Appendix M Thank You for Participating_Updated_3_2021.docx*
Recruitment Material: *Appendix C Script that Introduces CC to Study_Updated_3_2021.docx*
Recruitment Material: *Appendix E CC Recruitment Data Sheet_Updated_3_11_2021.docx*
Recruitment Material: *Appendix F Media Introduction to Study_Updated_3_2021.docx*
Recruitment Material: *CC Recruitment Authorization Template_3_2021.docx*
Recruitment Material: *CC Recruitment Flyer_1_updated3-11-2021.pdf*
Recruitment Material: *CC Recruitment Flyer_2_Updated_3_20201.pdf*
Recruitment Material: *CC Recruitment Flyer_3_updated_3_11_2021.pdf*

Regulatory Determinations/Comments:

- The project is not federally funded or supported and has been deemed to be no more than minimal risk.
- The project listed is required to update the HSPF on the status of the research in 5 years. A reminder notice will be sent 60 days prior to the expiration noted to submit a 'Project Update' form.

This project has been reviewed and approved by an IRB Chair or designee.

- The University of Arizona maintains a Federalwide Assurance with the Office for Human Research Protections (FWA #00004218).
- All research procedures should be conducted according to the approved protocol and the policies and guidance of the IRB.
- The Principal Investigator should notify the IRB immediately of any proposed changes that

affect the protocol and report any unanticipated problems involving risks to participants or others. Please refer to Guidance Investigators Responsibility after IRB Approval, Reporting Local Information and Minimal Risk or Exempt Research.

- All documents referenced in this submission have been reviewed and approved. Documents are filed with the HSPP Office.

APPENDIX C:
INTRODUCTION TO STUDY AND RECRUITMENT FLYERS



Assisted Living Home Caregiver

Please consider participating in a study that is interested in exploring your learning and technology interests.

If you are a certified caregiver and have worked in assisted living homes for more than 6 months, at least 18 years old, and speak English

Please consider contacting us to see if you qualify for this study!

What it involves: Approximately 60 min -1 ½ hours

When: April 2021 – March 2022

Where: Your preference



Participants receive a thank you and \$40.00

To learn more contact Christina Wyles MS, RN, MLIS
cwyles@email.arizona.edu 520-626-2475 or cell: 520-400-4457

An Institutional Review Board responsible for human subjects research at The University of Arizona reviewed this research project and found it to be acceptable, according to applicable state and federal regulations and University policies designed to protect the rights and welfare of participants in research.



Assisted Living Home Certified Caregivers

Please consider participating in a study that is interested in exploring your learning and technology interests.

- **Have you worked in assisted living homes for at least 6 months?**
- **Are you at least 18 years of age?**
- **Speak English?**
- **Are you a Certified Caregiver?**



What it involves: One interview lasting Approx. 60 – 1 ½ hours*

When: Scheduled between April 2021 to March 2022

Where: TBD – your preference

**Participants will receive a thank you and \$40.00*

Want to learn more and see if you qualify ?? Contact Christina Wyles RN

cwyles@email.arizona.edu 520-626-2475 or cell: 520-400-4457

An Institutional Review Board responsible for human subject research at The University of Arizona reviewed this research project and found it to be acceptable, according to applicable state and federal regulations and University policies designed to protect the rights and welfare of participants in research.



Assisted Living Home Caregiver

Please consider participating in a study that is interested in exploring the learning and technology interests of assisted living home caregivers.

- **Are you a Certified Caregiver?**
- **Have you worked in assisted living homes for at least 6 months?**
- **Are you at least 18 years of age?**
- **Speak English?**
- **Be willing to share your opinions?**



What it involves: One interview lasting Approx. 60 – 1 ½ hours*

When: Scheduled between April 2021 to May 2022

Where: TBD – your preference

****Participants will receive a thank you and \$40.00***

Want to learn more and see if you qualify??

Contact Christina Wyles RN

cwyles@email.arizona.edu 520-626-2475

An Institutional Review Board responsible for human subject research at The University of Arizona reviewed this research project and found it to be acceptable, according to applicable state and federal regulations and University policies designed to protect the rights and welfare of participants in research.

APPENDIX D:
STANDARDIZED INTRODUCTORY SCRIPT SCENARIOS

Possible Scenarios

Scenario 1 – Manager of Direct Care Home Approaches of Direct Care Worker

Recruitment Script for Assisted Living Home Manager (e.g., Other persons familiar with the study. Examples include Visiting RNs, Nurse Practitioners, Social Workers) **approach Direct Care Worker (DCW) to ask if they would be interested in knowing more about a study that might interest them? Study flyer may or may not be available at the time.**

Hi _____,

There is a study that might interest you. It involves exploring your learning and technology interests and needs. May I have Christina Wyles, the research nurse, contact you to explain more about the study?

If yes, forward the contact information to Ms. Wyles

If no, do not forward any information to Ms. Wyles

Scenario 2 - Potential DCW participant contacts Christina Wyles, research nurse by phone.

Recruitment Script for Potential Study Participant

Thank you for your interest and for contacting me about the study “**Exploring the Learning and Technology Needs and Interests of Direct Care Workers**”

Can I ask how did you learn about this study?

Great! Let me introduce myself and tell you about the study.

My name is Christina Wyles, and I am a nurse researcher and current PhD student at the College of Nursing at the University of Arizona. This study explores the education and technology interests and needs of direct care workers, working in the assisted living home.

Participation includes answering questions during a one-on-one recorded interview and then taking a short survey. Time requirements range between 60 minutes to 1 ½ hours. This study involves no foreseeable risks or benefits. At the end of the study you will receive \$40.00 to offset the expense of time, mileage and time away from responsibilities.

If you continue to be interested after I answer your questions, I will ask a few myself to confirm your eligibility. Please know your participation is voluntary and your responses are anonymous. Once this study ends the aim is that I will be able to publish the results

but any individual responses are de-identified and presented anonymously. A brief screening will address the study's inclusion and exclusion criteria

Do you think you would be interested?

If not interested, investigator will end the call: "Thank you for your time."

If yes interested: Is this a good time for us to discuss any questions you may have? I also have a few myself to confirm you qualify to be a participant and then we can discuss your scheduling preferences.

Sample Inclusion Criteria Questions

| |
|---|
| Are you currently working in an ALH? |
| Do you hold a current Arizona Certified Caregiver certificate? |
| Are you eighteen years of age or older? |
| Do you feel comfortable being interviewed in English? |
| Do you have at least six months current DCW experience? |
| Are you employed at least 10 hours by one or more ALHs? |
| Are you interested in attending educational events related to your work responsibilities? |

Scenario 3 - Potential DCW participant contacts Christina Wyles, research nurse by email**Email Recruitment Script to Potential Study Participant**

Dear _____,

Thank you for your interest regarding the study. My name is Christina Wyles, I am a PhD student at the College of Nursing at the University of Arizona. The purpose of this study is to explore the learning and technology needs direct care workers, working in assisted living homes.

If you qualify, please know your participation is voluntary and your responses are anonymous. You will be asked to answer questions during a one-on-one interview that is recorded and then take a survey. The total time estimation is approximately 60 minutes to 1 ½ hours. At the end of the interview you will receive \$40.00 to offset the expense of time, mileage and your away from responsibilities.

There are no know benefits or risks of this study. If you are interested, please provide a phone number so I may answer any questions you may have, confirm you qualify to be a participant, and schedule our interview.

Sincerely,
Christina Wyles

Christina Wyles

Christina Wyles RN, MS, MLIS
College of Nursing
The University of Arizona
PO Box 210203
Tucson, Arizona 85721
(520) 626-2475
cwyles@email.arizona.edu

Scenario 4 – Christina Wyles, Nurse Researcher is notified by third person (e.g., manager, RN visiting ALH, etc.) that a potential study participant requests to be contacted by Ms. Wyles to learn more about the study.

Recruitment Script – Potential Study Participant

Greetings _____! My name is Christina Wyles and I am the nurse researcher conducting the study about the learning and technology interests and needs of the DCW.

Your name was forward by _____ as being interested in this study.

Is this a good time to talk?

If no, identify another time to contact potential study participant and end the conversation.

If yes, continue the script.

Were you provided a flyer about the study?

No, let me share about the study. This study is interested in exploring the learning and technology needs and interests of ALH DCW.

Please know your participation is voluntary and your responses are anonymous. Once this study ends the aim is that I will be able to publish the results but any individual responses are de-identified and presented anonymously.

You will only be requested to participate one-time that consists of a one-on-one interview that is recorded and then taking a survey. There are no foreseeable risks or benefits. The total time commitment ranges between 60 minutes to 1 ½ hours. At the end of the study you will receive \$40.00 to offset the expense of time, mileage and time away from responsibilities.

What questions may I answer?

Is this something you would be interested in participating?

No, thank you so much for your time and any consideration.

Yes, great. I just need to confirm a few items to make sure you qualify for this study.

Sample Inclusion Criteria Questions

| |
|---|
| Are you currently working in an ALH? |
| Do you hold a current Arizona Certified Caregiver certificate? |
| Are you eighteen years of age or older? |
| Do you feel comfortable being interviewed in English? |
| Do you have at least six months current DCW experience? |
| Are you employed at least 10 hours a week by one or more ALHs? |
| Are you interested in attending educational events related to your work responsibilities? |

APPENDIX E:
RECRUITMENT DATA SHEET

| | | |
|---|---|---|
| <p>Referral Date</p> <p>Referral From</p> <p>Initial recruit communication <input type="checkbox"/> In person <input type="checkbox"/> Email <input type="checkbox"/> Telephone <input type="checkbox"/> Text</p> <p>Attempts at Contact:</p> | <p>Recruit Contact Info</p> <p>Name</p> <p>Address</p> <p>Email</p> | <p>Date /Time of Recruit Contact</p> <p><input type="checkbox"/> Intro to Study, Purpose, etc. (see script)</p> <p>How did you learn of this study?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> Maybe Later, Call Back <input type="checkbox"/> Declined <input type="checkbox"/> No Show <input type="checkbox"/> Dropped Out Date_____</p> |
| <p>Inclusion Criteria Questions</p> <p>Are you currently working in an ALH?</p> <p>Do you hold a current Arizona Certified Caregiver certificate?</p> <p>Are you eighteen years of age or older?</p> <p>Do you feel comfortable being interviewed in English?</p> <p>Do you have at least six months current DCW experience?</p> <p>Are you employed at least 10 hours by one or more ALHs?</p> <p>Are you interested in attending educational events related to your work responsibilities?</p> | | |
| <p>Preferred Interview Date</p> <p>Time</p> <p>Place</p> <p>Mode</p> | <p>Actual Interview Date</p> | |

APPENDIX F:
RECRUITMENT POSTING PERMISSION

Introduction to Study: Newsletters, Social Media and Professional Organizations

Dear _____,

I am a PhD Student at the College of Nursing at the University of Arizona and requesting your consideration in mentioning this study to your membership. This study explores the learning and technology interests and needs of direct care workers, working in assisted living homes. Attached are three flyers for your consideration.

Participation in this research includes a recorded one-on-one interview and then taking a survey. The estimated total time commitment is between 60 minutes and 1 ½ hours. Participation is voluntary, and responses are anonymous. There are no expected risks or benefits for participating in this study. At the end of the interview, participants will receive \$40.00 as reimbursement for expenses related to time, travel, and time away from responsibilities.

Any consideration would be appreciated. If you have any questions or would like to know more about this study, please contact Christina Wyles @ 626-2475 or by email at: cwyles@email.arizona.edu

Sincerely,

Christina Wyles

Christina Wyles RN, MS, MLIS
College of Nursing
The University of Arizona
PO Box 210203
Tucson, Arizona 85721
(520) 626-2475

APPENDIX G:
SATURATION GRID WITH DIRECTIONS

Category Saturation

| Interview # | 1 | 2 | 3 | 4 | 5 | 6* | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|------------------------------|----|---|---|---|---|----|---|-----------|----------|-----------|-----------|-----------|----------|
| New Categories per interview | 29 | 1 | 0 | 0 | 3 | 10 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| New Categories in run | | | | | | 43 | | 1 | 0 | 1 | 1 | 0 | 0 |
| % Change over base | | | | | | | | 2.33 % | 0.0 % | 2.33 % | 2.33 % | 0.43 % | 0.0 % |

Number of Interviews = 13

Number of Study Participants = 14

*Base Size 6 / Run Length 2 / Standard - Stay Below 5%

To assist with saturation determination a method was used described by [Guest et al., \(2020\)](#).

The procedure follows:

Step 1 is the base size, the initial number of interviews, was established. Interviews were analyzed and parsed into a total number of unique categories. The number of unique categories was the base size and was used as the denominator of the saturation ratio.

Step 2 is run length. The run length was the number of subsequent interviews that was analyzed and parsed into a total number of unique categories not contained in the base-size. The number of these new unique categories was the numerator of the saturation ratio.

Step 3 calculates if the saturation level is less than the previously determined threshold. This means that little or no new valuable information would be produced in subsequent interviews. The process continues by adding new interviews until the saturation level is less than the previously determined threshold. (Suppose the saturation level is too large relative to the pre-determined threshold? In that case, a subsequent interview is analyzed (the run size is constant) for new and unique themes, and a new saturation ratio is calculated.)

Reference

Guest, G., Namey, E., & Chen, M. (2020). A simple method to assess and report thematic saturation in qualitative research. *PLoS One*, 15(5), e0232076-
e0232076.doi:101371/journal.pone.0232076

APPENDIX H:
CAREGIVER SURVEY

**Dear Certified Caregiver,
Thank you for participating in this study.**

Introduction to the survey:

About the survey: It is divided into three sections:

Part 1 focuses on demographic information.

Part 2 is interested in learning more about your practice and experiences as a certified caregiver.

Part 3 is interested in topics you might want to learn more about and the hurdles that might impede your participation.

Remember **your responses are confidential**. If you have questions, ask. If you do not feel comfortable answering a question, then leave it blank.

Part 1 – Demographic Information

What is your home zip code? _____

How would you describe where you live?

_____ in the city

_____ in a rural area

Do you work mainly in the city or a rural area of Arizona?

___ Mostly city

___ Mostly rural

What is your age? _____

What is your gender?

___ Male

___ Female

___ Non-binary / third gender

___ I prefer not to say

What is your marital status?

___ Single

___ Married

___ Separated

___ Divorced

___ Widowed

I prefer not to say

How many children do you have living at home with you?

How many are under the age of 18?

What religion do you identify with most?

What is your hourly wage at your job?

Note: If your hourly wage varies, please provide a range (e.g. \$12.00-\$13.00). If you do not know, give your best guess.

What is the highest level of school you have completed?

- Less than High School
 High School or G.E.D.
 Some Post-High School
 Associate/Technical School Graduate
 Bachelor Degree Graduate
 Other _____
 Doctorate

Are you Spanish, Hispanic, or Latino or none of these?

- Yes
 None of these
 I prefer not to say

Choose one or more races that you consider yourself to be:

- White
 Black or African American
 American Indian or Alaska Native
 Asian
 Native Hawaiian or Pacific Islander
 Spanish, Hispanic, Latino
 I prefer not to say
 I prefer to self-describe as _____

Is English your first language?

- Yes
 No

Please indicate your preferred language when you listen to a TV, or radio news report.

- Spanish
- English
- Filipino/Tagalog
- Other

Part Two – Work Experience - Remember - If you have any questions, do not hesitate to ask.

Do you have experience working in other long-term care settings?

- Nursing homes
- Larger assisted living facilities
- Developmental disabled homes
- Adult day care
- Home health
- Group homes (e.g., developmental disabled)

Approximately how long have you worked for your current employer as a certified caregiver?

- Less than 6 months
- At least 6 months
- 1-2 years
- 3-4 years
- 4-5 years
- More than 5 years
- More than 10 years

The approximate length of time you have worked as a certified caregiver in assisted living homes:

Approximately how long have you worked as a paid caregiver? Include any previous caregiver jobs assisting clients in their homes.

- Less than 6 months
- At least 6 months
- 1-2 years
- 3-4 years
- 4-5 years
- More than 5 years
- More than 10 years

Shifts you currently work as a certified caregiver in an assisted living home:

- Days

- Evenings
 Nights
 Combination

How long are these shifts?

- at least 8 hours
 at least 12 hours
 at least 24 hours
 more than 24 hours

What is the number of hours you work each week as a certified caregiver in the assisted living home environment?

Do you have other jobs in addition to working as a certified caregiver in an assisted living home?

- Yes
 No

Have you ever sustained an injury at work?

- Yes
 No
 Do not know/Not sure

If yes, what kind of injury did you sustain? (back, patient inflicted, etc.)

Compared to other people your age, would you say your health, in general, is:

- Excellent
 Very Good
 Good
 Fair
 Poor

If fair or poor health, please explain

In addition to your work responsibilities, do you consider yourself an unpaid caregiver for a family member or friend?

- Yes
 No

If yes, what is your relationship with the person for whom you provide care?

I am the person's:

- spouse or partner
- adult child
- parent
- family member
- friend
- other: _____

Part 3 – Education and Technology Interests and Hurdles

This last section of the survey is divided into three parts. 1st are questions interested in your technology use, 2nd education topics of interest, and 3rd hurdles that may impede attending an educational event.

1. **Technology Use - Directions:** Five questions are interested in your technology use.

Please select the best answer as it applies to your technology use.

I use technology at work to help me with my work activities.

- Always
- Never
- Sometimes
- Rarely

Examples of technology you use at work:

I use technology to help me understand a disease or illness.

- Always
- Never
- Sometimes
- Rarely

Examples:

I have access to the Internet at (Check all that apply)

- Home
- Assisted living home
- Another place _____
- No, I do not have regular access to the internet.

I would you be interested in attending **live-online education programs** with other care workers from across the state?

- Yes
 No
 Maybe

Yes, I would you like to participate in virtual case conferences to learn more about disease management?

- Yes
 No
 Maybe

Certified Caregiver Topics of Interests

Directions: Below are topics that you may find of interest and want to learn more about. Identify your interests by checking a box that most reflects your interests:

- 1 = Extremely interested in learning more
 2 = Very interested in learning more
 3 = Moderately interested in learning more
 4 = Slightly interested in learning more
 5 = Not at all interested in learning more

Remember, if you have any questions or would like something clarified, please ask.

| TOPIC | Extremely Interested | Very Interested | Moderately Interested | Slightly Interested | Not at all Interested |
|--|----------------------|-----------------|-----------------------|---------------------|-----------------------|
| Self-care and Professional Advancement | | | | | |
| Learn strategies to prevent on-the-job injuries | | | | | |
| Learn strategies for challenging resident behaviors | | | | | |
| Learn ways to deal with your feelings after a traumatic event | | | | | |
| Learn ways to reduce work-stress | | | | | |
| Learn self-care strategies and how to integrate them at work | | | | | |
| Learn safe strength training for everyone (caregivers and residents) | | | | | |
| Learn chair yoga for resident and staff | | | | | |

| | | | | | |
|---|--|--|--|--|--|
| Learn on-the-go massage therapy | | | | | |
| Learn strategies to improve your financial management skills | | | | | |
| Explore career ladder options & how to go about it | | | | | |
| Develop a plan to improve your technology skills | | | | | |
| Skills that Impact Your Practice | | | | | |
| Learn how to handle scary situations when you are all alone: CPR, Choking, Heimlich, Power outage | | | | | |
| Learn ways to assess resident issues (What to measure and look for when you are worried) | | | | | |
| Skincare, skin tears, and pressure ulcer evaluation and avoidance | | | | | |
| Wound care treatment updates | | | | | |
| Oxygen tank management | | | | | |
| Strategies to assist resident sleep | | | | | |
| Reviewing safe transfers and ambulation skills for challenging residents | | | | | |
| Avoiding resident fall strategies and steps to take after a traumatic fall | | | | | |
| Current infection prevention practices | | | | | |
| Reviewing best practice for urinary catheters (flushing, maintaining, and storing equipment) | | | | | |
| Reviewing best practice in the management of bowel care | | | | | |
| Orders and Medication Management | | | | | |
| Strategies to improve your documentation: Transcribing orders and documenting care | | | | | |

| | | | | | |
|---|--|--|--|--|--|
| Reviewing medication calculations and conversions: (example: how many mls = mgs). | | | | | |
| Reviewing medication administration for insulin: (measuring-up two kinds, using an insulin pen, calculating a sliding scale). | | | | | |
| Learning more about <u>depression</u> medications and their side effects | | | | | |
| Learning more about assessing <u>antipsychotic</u> medication side effects | | | | | |
| Disease Management learning | | | | | |
| Cardiovascular disease, strokes, and high blood pressure | | | | | |
| Cancer | | | | | |
| Liver diseases | | | | | |
| Alzheimer's and related dementias | | | | | |
| Diabetes and common complications | | | | | |
| Chronic respiratory diseases | | | | | |
| Multiple chronic illnesses | | | | | |
| Caring for the Dying Resident | | | | | |
| Learning more about palliative care | | | | | |
| Learning when and how to individualize comfort measures during the dying process | | | | | |
| Learning about symptoms related to dying and when to notify the physician and family | | | | | |
| Injury and Emergency Management | | | | | |
| Assessing, managing, and reporting heat exhaustion | | | | | |
| Recognizing and reporting resident abuse and neglect | | | | | |

| | | | | | |
|--|--|--|--|--|--|
| Strategies to protect yourself and residents during a pandemic | | | | | |
| Strategies to protect yourself and residents during a natural disaster | | | | | |
| When and how to use restraints | | | | | |
| Add your own: | | | | | |

Rate Your Opinions Related to Your Learning

Directions: This last group of questions is centered around your impressions related to factors that may impact your learning.

| | Strongly Agree | Agree | Disagree | Strongly Disagree | Prefer not to answer |
|--|----------------|-------|----------|-------------------|----------------------|
| Learning new things is part of my work responsibility. | | | | | |
| Career development is important to me. | | | | | |
| I want to go back to school. | | | | | |
| My workplace offers me opportunities to learn. | | | | | |
| My workplace supports my career development. | | | | | |
| My workplace values educating its employees. | | | | | |
| Education is a good way to advance my career. | | | | | |
| My workplace keeps me informed and updated on what I need to know. | | | | | |
| My salary is satisfactory. | | | | | |
| If I do not know something, I feel comfortable asking for help. | | | | | |
| I am provided adequate education and training on Covid-19. | | | | | |
| I am paid for attending educational events. | | | | | |

Thank you! Your participation is appreciated!

APPENDIX I:
INTERVIEW GUIDE AND SELF-EVALUATION

Interview Protocol, Participant Guide with Post Interview Self-Evaluation

Start time: ____ and End time ____

Interviewer ID ____

Interview date: ____/____/____ DD / MM / YY

Interviewee location: _____

Step 1: Welcome & Introduce self to the participant. (Confirm comfort and privacy)

Step 2: Explain Study Process, Read Consent and if indicated, record participant consent.

Step 3: Introduce the Certified Caregiver Survey (refer to script). Confirm access mode.

Step 4: Read Step 4. **Confirm audio recording is on** (e.g., red light on). Conduct the interview.

Step 5: Thank participant, provide written thank you with contact info, and \$40.00 honorarium.

Step 4:

After Part 1 of the study is completed – Ms. Wyles introduces Part 2 of the study: the interview.

We are now starting the second half of the study, which includes open-ended questions about your information and technology interests and needs as a Certified Caregiver. There is no right or wrong way to answer these questions. Your candid answers assist me in understanding your current information, educational needs and technology interests.

As a certified caregiver you have an important perspective and I am interested in the things you have to say about your work. This is the reason I am recording this portion of the study; it helps me remember our conversation and because it is impossible to capture everything by note taking.

Finally, it is common for conversations to drift into a broader discussion. If this occurs I might try to steer us back to the topic of your learning and technology interests and needs as it pertains to your workplace, the assisted living home.

Icebreaker Questions:

1. Before we get started, do you have any questions for me?
2. Tell me when and how you started as a caregiver?
3. What attracted you to the profession?
4. Tell me about a situation where you felt like an expert.

5. Tell me a little about the residents you currently care for in assisted living homes.
 - 5.2. What kind of health problems do residents' have?
 - 5.3. What percentage of residents have some kind of dementia?
6. Tell me about a situation where you needed to do something (for example a task) work related and you needed more information. How did you handle it? Where did you turn or whom did you ask?
 - 6.2. Tell me about a time when you needed more information to solve a problem.
 - 6.3. Who do you usually go to or ask a question regarding something related to your work?
 - 6.4. Do you feel supported when you have a question?
 - 6.5. What are your vulnerabilities to learning new things? What makes it difficult for you to learn new things? What things get in the way?

Research Question: *What are the self-identified learning and technology needs of the certified caregiver, working in the small, assisted living home?*

Aim 1) To explore the perceived educational needs and interests of CC in the context of the ALH.

1st Interview Question: Describe a work-related educational experience you have had as a CC?

Question 1 Probing Questions:

- 1.1 Tell me about the last time you learned something on the job. It can be anything.
 - 1.1.1 How long ago? Who provided?
 - 1.1.2 What did you like about it?
 - 1.1.3 What didn't you like about it?
 - 1.1.4 What things would you change or improve?

- 1.2 Tell me about other training or educational experiences as a CC.
 - 1.2.1 How long ago? Who Provided?
 - 1.2.2 What did you like about it?
 - 1.2.3 What didn't you like about it?
 - 1.2.4 What things would you change or improve?
- 1.3 Tell me about your last education activity/in-service as a CC (where why, how whom)
 - 1.3.1 What was the purpose?
 - 1.3.2 Where was the event/in-service held?
 - 1.3.3 Who provided/presented the information?
 - 1.3.4 Do you remember about how long the event lasted?
- 1.4 Do you have educational/in-service requirements as a CC?
 - 1.4.1 How frequent do you have to update any requirements related to your certification as a caregiver?
- 1.5 In general, do you participate in continuing education events for CC?
 - 1.5.1 Tell me about them/it.
 - 1.5.2 Who sponsors or provides the information?
 - 1.5.3 Where are they conducted?
- 1.6 When you first started in assisted living – did you feel prepared?
 - 1.6.1 What would have helped you feel more prepared? (e.g., mentoring, more hands on training, freq. check-ins, real time answers to questions, etc.).
 - 1.6.2 Tell me about your initial training and education to become a DCW?
 - 1.6.3 What training did your employer provide? Anything special to the ALH you work in? (e.g., training, preparation, and orientation)
 - 1.6.4 Was the initial training, preparation, and orientation adequate? Tell me why or why not.

1.7 Regarding educational topics/needs that you have participated, which one is the most important to you? What one made the most difference?

1.7.1 Do you feel you received enough infection control education regarding Covid?

1.7.2 How did you cope when Covid first broke out (at work or at home)?

1.7.3 Does it get lonely working as a caregiver? How do you cope with this?

1.7.4 Would you be interested in being part of a learning community?

Summary Questions:

OK, I want your opinion and thoughts as I summarize our conversation (Lincoln & Guba, 1985):

Did I leave anything out; did I get it correct?

Is there anything else you would like to add to your earlier responses?

2nd Interview Question: As a CC, if you were to attend an educational event /in-service of a topic of your choosing, what would you like to learn about?

Question 2 Probing Questions:

2.1 What kinds of work-related information would be helpful?

2.1.1 How do you prefer this information be delivered?

2.2 What learning needs do you have? It can be anything. Something you are curious about or would improve your practice. What are your work-related interests?

2.3 What are your learning needs related to your CC work activities/tasks?

2.3.1 Are there specific topics that would improve your practice? What topics are of interest?

2.3.2 Are there care areas you would like to know more about?

2.4 Based on your work experience, is there a subject or area of information you would like to learn more about?

2.4.1 Any areas that you would like to improve in?

2.4.2 Do you have a preference how the information is presented?

2.4.3 Where do you go to find the answers and Who do you ask?

2.5 In general, when you need to learn something work-related, who do you ask?

2.5.1 Can you provide an example when you wanted to know more about something at work?

2.6 When you have questions related to caring for your residents, how do you get information? (who do you ask?)

2.7 Do you use government resources like PubMed or Medline Plus?

2.7.1 By chance do you have a library card? Ever visit the health sciences library or call them for support or answers to your questions?

2.7.2 Have you ever used poison control to obtain information about medications?

Summary Questions:

OK, I want your opinion and thoughts as I summarize our conversation (Lincoln & Guba, 1985):

Did I leave anything out; did I get it correct?

Is there anything else you would like to add to your earlier responses?

Aim 2) To describe the technology interests and needs of the ALH CC as it relates to learning.

3rd Interview Question: Describe your interactions with technology. What technology do you use at work and at home?

Question 3 Probing Questions:

3.1 What technology do you have access to?

3.1.1. Do you have access to a laptop, smartphone, smart watch, or tablet?

3.1.2. What factors may contribute to or hinder you from engaging with a technology platform?

___ Do not know how to use,

___ I do not have access,

- I have to borrow equipment,
- I am too busy,
- Other

3.1.3. Where do you go to use technology? Do you borrow from family or friends?

3.1.4. Do you ever go to the library to check out items? (e.g., books, tapes, videos, technology equipment)?

3.1.5. Do you have a library card?

3.1.6. Do you ever go to a library to check out or to use technology?

3.2 Tell me what technology devices you use at home?

3.2.1. What technology do you use for pleasure?

3.3 Do you have access to the internet at work?

3.3.1 Do you use the internet at work to search for information related to work? If yes, what sites do you go to?

3.3.2. Are any of them caregiving sites?

3.3.3. Are any of them government sites – like the library of medicine? PubMed?

3.3.3.1. Would you like to know more about library resources?

3.3.4. Do you ever just Google your care or health questions?

3.3.4.1. How you decide which Google sites to trust?

3.3.4.1 Would you go to a site designed just for you, a paid caregiver?

3.4 Do you use technology to learn? If yes, provide examples

3.5 Do you use technology at work to help you in your work activities?

How about

- Electronic Chart
- Glucometer
- CPAP Machine
- Oxygen

- Humidifier
- Hoyer Lift
- Smart TV
- Electronic Medical Record
- Computer
- Smart Phone
- Cable and Satellite TV
- DVD Machine
- Feeding Machines (G tube feedings)
- Trach Machine
- Suction Machine
- Electronic Wheelchair
- Electronic Bed
- IV Machine
- Electronic Temperature
- Electronic B/P Machine
- Electronic Pulse

3.6 Regarding technology needs, which one is the most important?

Summary Questions:

OK, I want your opinion and thoughts as I summarize our conversation (Lincoln & Guba, 1985):

Did I get it correct and/or did I miss anything?

Is there anything else you would like to add to your earlier responses?

Aim3) Identify barriers and facilitators in achieving educational needs and interests?

4th Interview Question: Explain what types of support would you need to attend a work-related continuing educational event specifically designed for CCs?

Question 4 Probing Questions:

4.1 What are the personal factors that can influence your participation with work-related education?

4.2 What factors help and hinder you from engaging with a technology platform? (time of day, distance, travel time, requesting time off, etc.)

4.3 When is the best time to have an educational/in-service event?

4.4 Who pays for your work-related educational/in-service events?

4.5 Do you ever get lonely while at work?

4.5.1 If you attended an online event with other certified caregivers where you could discuss issues, would that interest you?

4.6 Would you be interested in attending an online educational event with other CCs?

4.6.1 Do you have a preference on who delivers the information?

4.5.2. Give me examples of preferred speakers

4.7 Tell me how your workplace supports your educational interests?

4.7.1. Could you get off work to attend a work-related in-service?

4.7.2. Would you get paid for attending an educational event?

4.8 Would you be interested in attending an online educational event with other CCs using technology?

Section Summary:

OK, I want your opinion and thoughts as I summarize our conversation (Lincoln & Guba, 1985):

Is there anything else you would like to add to your earlier responses?

Did I get anything wrong?

Last three questions:

1. Of all things you were asked to consider today, which one is most important to you? (see Krueger, & Casey, 2015) why?
2. Where do you see yourself in 5 years?
3. Are you interested in furthering your formal education? LPN, RN?

Conclusion:

That's it, what questions do you have for me?

Any final thoughts? Is there anything else you would like to share with me?

Step 5: Thank participant and give thank you note.

After Part 2 is completed – Ms. Wyles thanks the participant.

Read:

Thank you again for your time and effort. If you think of anything later that you would like me to know, please feel free to contact me. I have enclosed my contact information for you in the thank you card. If you wish to speak with my supervisor, Dr. Kimberly Shea, I have enclosed her contact information as well. If you have questions about your rights as a participant in this study or if you want to discuss other study-related concerns or complaints with someone who is not directly part of this research study, you may contact the Human Subjects Protection Program Director (at the IRB Office). Their information is also available in the thank you card.

(Hand deliver the thank you in an envelope that includes study information and the enclosed \$40.00).

Self-Evaluation and Post Interview Reflection:

Afterthought Notes & Impressions:

Validation of Questions and Areas for Improvement:

1. Questions to be modified in the IG

2. Questions to be added in the IG

3. Questions to be removed in the IG

IRT – Reflexive*:

1. Did I create a calm and friendly atmosphere?
2. Did my body language avoid exaggerated gestures?
3. After each main question posed, was there a natural conversation where the participant talked most of the time?
4. Was I silent but attentive most of the time?
5. Were my facial expressions communicative that I was listening?
6. Were the main questions in the interview guides posed without being viewed as “leading”?
7. Were the follow-up questions asked in a neutral manner?

8. Was the data gathered considered to be rich as the interviewee provided elaborated answers to the interview questions?

(Malmqvist et al., 2019).

APPENDIX J:

APPROVED CONSENT TO PARTICIPATE IN STUDY



Consent Version: 03/15/2021
Page 1 of 4

University of Arizona Consent to Participate in Research

Study Title: *Exploring the Learning and Technology Needs and Interests of Certified Caregivers Working in Assisted Living Homes*

Principal Investigator: Christina Wyles, RN, MS, MLIS, PhD Candidate

Sponsor: Medical Library Association

Summary of the research

This is a consent form for participation in a research project. It contains important information about this study and what to expect if you decide to participate. Please consider the information carefully. Feel free to ask questions before making your decision whether or not to participate. Finally, your participation in this research study is voluntary.

You have acknowledged being a certified caregiver, are age 18 or older, and currently working in at least one assisted living home. That is why you are being asked to participate in this study. This study focuses on the learning and technology interests and needs from your perspective. A brief survey followed by a recorded interview may take between 60 minutes to 1 ½ hours to complete.

Please know, you may skip any question that you choose not to answer. Finally, there is no direct benefit to you for participating in this study.

Why is this study being done?

The reason Ms. Wyles is interested in this topic is because the demand for caregivers such as certified caregivers is expected to grow considerably, but there is little information available from the perspective of the assisted living home certified caregiver. The information learned from this study may assist in designing future education interventions designed specifically around assisted living home direct care worker.

What will happen if I take part in this study?

If you choose to participate, you will be asked to verbalize your consent that will be recorded. However, you may withdraw from this study at any time even after you sign the consent form, and your decision will not be held against you.

If you agree to participate there are two parts to this study: a survey followed by an interview.

1. First, you will be asked to complete a survey. The survey is divided into three sections: Demographic, Practice, Interests.

HSPF Use Only: Consent Form

Externally Funded Non-Medical 2020-10-12

Approved by Univ. of Arizona IRB (Expires 5-Apr-2026)



Consent Version: 03/15/2021

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2. After the survey you will be asked a set of prepared open-ended questions that guide the interview. The interview will be recorded because it is a better way for the researcher (Ms. Wyles) to capture your thoughts and ideas than taking notes by hand. You may skip any question that you choose not to answer.

Also, it is natural for conversations to sometimes drift into a broader discussion. If this occurs Ms. Wyles might try to steer the conversation back to the topic of learning and technology needs as it pertains to the assisted living home.

How long will I be in the study?

Your participation will take approximately 60 minutes to 1 ½ hours.

How many people will take part in this study?

It is estimated that no more than 30 and no less than 8 participants will take part in this study.

Can I stop being in the study?

You do not need to participate in this study. If you decide to take part in the study, you may leave the study at any time. No matter what decision you make, there will be no penalty to you and you will not lose any of your usual benefits. Your decision will not affect your future relationship with The University of Arizona. If you are a student or employee at the University of Arizona, your decision will not affect your grades or employment status.

What risks or benefits can I expect from being in the study?

While there are no expected risks to you as a result of participating in this study, you will not benefit directly from participating in this study.

Will I be paid for participating in the study or experience any costs?

At the conclusion of the interview, you will be provided a written thank you for participating that includes contact information and an enclosed \$40.00 for the cost of your time away from responsibilities.

For the \$40.00 compensation you receive, Ms. Wyles is required to obtain identifiable information: your name and address. Collecting this information is required for financial compliance purposes and will not be linked to your research data. However, if you do not want the UA Business Office to have this information, you can still participate in this study, but you will not be able to receive the \$40.00 for the cost of your time away from your responsibilities.

Finally, compensation for participation in a research study is considered taxable income for you. If your compensation for this research study in combination of research studies is \$600 or more in a calendar year (January to December), you will receive an IRS Form 1099 to report on your taxes.



Consent Version: **03/15/2021**
Page 3 of 4

Will my study-related information be kept confidential?

Your privacy will be maintained and protected throughout this study. PI Wyles will not share your name. The information you provide, including your thoughts and comments, will not be able to trace back to your name, as it is de-identified. All of your responses and all data collected are anonymous.

Your name will not be used in any report. The information you provide will be de-identified by a study ID code and will not be associated with your name or other personally identifying information and is password protected. Finally, information collected in this study about you will not be used or shared for future research studies.

The information that you provide in the study will be handled confidentially. However, there may be a rare circumstance where this information must be released or shared as required by law. The University of Arizona Institutional Review Board; other federal, state, or international regulatory agencies; or the sponsor of the study, if any, may review the research records for monitoring purposes.

Will my study-related information be used for future research?

Information collected about you will not be used or shared for future research studies.

Who can answer my questions about the study?

For questions, concerns, or complaints about the study you may contact my direct supervisor, Dr. Kimberly Shea at 520-626-6076 or by email kshea@email.arizona.edu.

For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact the Human Subjects Protection Program Director at 520-626-8630 or online at <http://rgw.arizona.edu/compliance/human-subjects-protection-program>.

Verification process of verbal consent

1. You are being asked to participate in the study *Exploring the Learning and Technology Needs and Interests of Certified Caregivers Working in Assisted Living Homes*, but to be clear, you are not giving up any legal rights by agreeing to participate.
2. Have you received a copy of the consent form and has Researcher Wyles read to you the consent?
3. Have you had the opportunity to ask questions and had them answered to your satisfaction?
4. Do you have any questions about this research study before giving your verbal consent?



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5. Do you voluntarily agree to participate in this study?

Printed name of subject

Date of Verbal
Consent

APPENDIX K:
THANK YOU, CONTACT AND STUDY INFORMATION



Study Title: “Exploring the Learning and Technology Needs and Interests of the Certified Caregiver”

Thank you for Participating

Your participation in this study means a lot. Thank you! Enclosed is \$40.00 for your time, mileage and time away from responsibilities.

This study is ongoing, so please refrain from sharing the information we discussed during the study with others who may participate in the future.

If you have any additional thoughts or questions about the study, you may contact me, **Christina Wyles, MS, RN**, at 520-626-2475 or by email cwyles@email.arizona.edu or my supervisor, **Kimberly Shea, PhD, RN** at 520-626-6076 or by email kshea@email.arizona.edu.

You may also contact the University of Arizona Institutional Review Board (IRB) to discuss any study-related concerns or complaints with someone who is not part of the research team at 520-626-8630 or online at <http://rgw.arizona.edu/compliance/human-subjects-protection-program>.

Sincerely,

Christina Wyles RN, MS, MLIS
PHD Candidate

Please Note: This study was funded in part by a grant from the Medical Library Association. The content is solely the responsibility of the authors and does not necessarily represent the official views of the funding source.

APPENDIX L:
SUBCATEGORIES WITH SUPPORTING DEFINITIONS

ANALYSIS I: Inductively Derived Subcategories with Definitions

| Subcategory | Description |
|--|--|
| 1. Negative Perception / Predisposition | Any stigma, prejudice, or bias, whether intentional or not intentional, on the grounds of an individual's age (e.g., resident, older adult) or work status as CCG. |
| 2. Care Barriers | Any factor that may negatively impact or impede the CCG caregiving activities. |
| 3. Camaraderie | Mutual closeness, teamwork and friendship among CCG who spend worktime together or spend time with residents living in ALH... (might involve fun and dance). |
| 4. Attitude - Can Do Person | A characteristic of an individual (CCG) who is positive, optimistic, and capable. This individual does not shy away from a challenge and has a great deal of confidence to get the CCG task completed leadership |
| 5. Care Avoidance, Care Dislike This could be a subcategory to Barriers to Care | Factors that impact care avoidance and/or dislike include skill level, comfort level of performing the procedure/task, and personal preferences concerning the procedure. The care avoidance or care dislike may involve a particular task or intervention that is viewed uncomfortable, repelling or requires more practice/knowledge to complete the activity confidently. |
| 6. Communication and Coordination | An interchange between the CCG and another (e.g., resident, co-worker, family member, ALH Manager, medical personnel [NP, MD, DME representative] that may or may not facilitate the delivery of effective care. |
| 7. CCG Barriers, Personal Impact & Life outside of work | Components that impede professional activities related to CCG profession. These barriers may indirectly negatively impact the care that a ALH resident should properly be given. |
| 8. CCG Work | The responsibilities that a CCG is assigned or assumes, with minimal involvement from others: family, managers, visiting healthcare providers (e.g., hospice nurse, NP, RN, MD) |
| 9. Different Performance Expectations | The dissimilarity of acceptable task completions between different CCG's. This is often related to a CCG's skill set, level of experience, comfort level of performing the task, management support and/or past work history. |
| 10. Education Regulation for CG | The formal requirements, mandates, or educational levels that a CCG must adhere to. These can be either government (i.e., Arizona DHS) or site mandated (i.e., ALH) |
| 11. Educational Interests & Needs | The desire of a CCG to expand their skill set through a formal or informal educational process. This desire could be originated by a |

| Subcategory | Description |
|---|--|
| | personal decision to improve or by the necessities of the workplace. |
| 12. Educational Opportunities at Work | The availability of educational activities provided at the workplace. |
| 13. Entry into CCG Profession | The personal factors that influenced the CCG to enter the profession. |
| 14. Environment | The physical layout and design of ALH and how it impacts resident needs |
| 15. Equipment Used @ ALH | The instruments, appliances, and machinery available in the ALH that is used by the CCG. |
| 16. Expertise When Accommodating Resident Needs | Practical knowledge or skill developed to meet the care needs of the resident. |
| 17. Family Interlinkage | An influence or action between the ALH or CCG and the residents' family |
| 18. Formal Education Aims | The desire, or lack of desire, to acquire more formal school instruction. |
| 19. Getting Information | The on-site general knowledge that a CCG knows: where to go, who to ask, or what technology to access when information is needed. |
| 20. High Standards of Care | The hopeful goal of every CCG is the highest possible standard of care for their clients. |
| 21. Intrinsic Purpose of CCG Role | The explanation of why the CCG is a CCG and how they view themselves in the profession. |
| 22. Just a Pay check | When the purpose of the ACH or CCG is merely financial. |
| 23. Barriers to Providing Care-Language | The situation when the ACH administration, CCG, or client are unable to thoroughly assign task or exchange information due to language differences. |
| 24. Leads by Example | The ability to inspire others and tacitly encourages them to be a part of the team. |
| 25. Learning Style Preferences | How CG prefer to learn or master skills/information |
| 26. Level of Care - Resident Ex | A resident's care necessities (e.g., emotional & physical). |
| 27. Library Card | A permission card that allows use of online services and book check out from a particular library. |
| 28. Mentoring | A developmental partnership in which a person with relevant knowledge and experience (a mentor) shares knowledge and skills in order to support others |

| Subcategory | Description |
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| 29. Needs More Information | A situation when the provided information offered is insufficient and a request is made for more information. |
| 30. New on the Job | An individual just beginning at the ALH site. |
| 31. Plans for the Future | The long-term goals of an individual. They may have aspirations to transition to another role. |
| 32. Professionalism | The competence and skill expected of a professional. Characteristics of professionalism are treating others with respect, keeping your word, being loyal, and exceeding expectations. |
| 33. Regulatory Requirements | All applicable laws, rules, regulations, orders, requirements, guidelines, interpretations, directives, and requests (whether or not having the force of law). |
| 34. Resident and Environmental Hesitancy | A situation that may be viewed as negatively influencing an individual's health care decisions and causes them to delay or accept health care. Often this denial involves a particular task or intervention that is uncomfortable or repelling. |
| 35. Resident Care | Care provided in a live-in ALH home regulated by the Arizona Department of Health Services. |
| 36. Resident Case Mix | Variables that reflect the complexity and diversity of ALH residents. |
| 37. Self-Care | The decision of an individual to take action to preserve or improve one's own health. |
| 38. Self-Cultivation | The development of one's mind or capacities through one's own efforts. |
| 39. Sentinel Event | An unanticipated event that results in death or serious physical or psychological injury to a patient, not related to the natural course of the residents' illness. *Rarely are sentinel events closely monitored or investigated by healthcare regulatory authorities. (cite) |
| 40. Sharing Knowledge | Sharing knowledge is an activity through which knowledge (information, skills, or expertise) is exchanged among people (e.g., CCG exchange, Manager-CCG exchange, CCG-resident exchange, CCG-family exchange). |
| 41. Technology Access and Use | The open availability of access to technology used to receive or deliver care (e.g., glucometer, Hoyer lift, etc.) or health information (e.g., to deliver educational information). |
| 42. Training & Work Experience | Training and in-service work-experience means the formal and/or informal work-related learning activities undertaken by the ALH CCG while employed. |

| Subcategory | Description |
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| 43. Valued by Management | The appreciation of the management of an employee's worth both as an employee and as a person. |
| 44. Vetting Online Information | Appraisal of online information (e.g., health and medication information). |
| 45. Work Environment & Expectations | The expected behaviors and responsibilities of the CCG when working in the ALH setting. |
| 46. Vetting CCG | The process of checking and appraising CCG qualifications to determine suitability of skill or for employment. |
| Subcategories for Consideration During Analysis 2 Using an A Priori Framework | |
| Care Contributors | Care contributors include managers, owners, family members, co-workers that may have a presence or participate in some aspect of the care of the resident (e.g., assists during meals, social interaction). |
| Observed Learning Needs | In the context of the ALH, the CCG comes to a realization during their practice, there is a need for learning for self or another. |
| New Admit Resident | A resident that has been deemed appropriate for admission to an ALH. The appropriateness of the resident is based on a pre-admission assessment prior to the arrival of the resident to the ALH |
| CCG Attributes | Includes factors inherent or characteristic to a CCG. Often it is a special quality, skill, or best practice of a procedure or duty. |
| Environmental Operations | Customary and expected operational activities within the ALH environment. |
| Medications* | A medicine or drug used for medical treatment that is prescribed to the ALH resident and delivered by the CCGFCF. *Frequently brought up during interviews |

APPENDIX M:

AIMS 1, 2, 3, TABLES WITH EXEMPLARS

Three research aims provide structure for the Main Analysis. Findings are organized into three tables, including definitions of 5 categories and 13 subcategories with quote exemplars.

AIM 1. Learning Interests and Needs

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| <p>Category – Experiential Debut is realization during a work-related caveat(s) by the CCG there is a learning interest and /or need (i.e., resident care or environmental issues [e.g., global pandemic, the context of the ALH, management communication, new technology or equipment]).</p> | |
| <p>Subcategory</p> | <p>Observed Learning Needs involves the CCG coming to the realization that there is a learning need observed about self or observed in other(s).</p> |
| <p>Quote Exemplars</p> | <p>About Self: I'm a diabetic myself. I know how to deal with diabetes, but with a brittle diabetic you need more info ... (P14)</p> <p>About Others: A lot of the time people don't realize that they are dehydrated. They think they're drinking enough water. Even our caregivers. They don't realize that they have some form of dehydration. (P13)</p> |
| <p>Subcategory</p> | <p>Learning Preferences includes how the CCG prefers to learn or master skills and incorporate information.</p> |
| <p>Quote Exemplars</p> | <p>Hands-on: It needs to be hands on experience because there's like I said, caregiving, you can't learn from a book. You have to have hands on experience to actually be a good caregiver. You can read about how to be a good caregiver, but until you have that hands on experience, you can just tell me... (P10)</p> <p>...if you don't have someone there to show you how a trach goes in and oh, by the way, this trach is a little different. You're going to have to pinch it to clip it in. Or you can't watch tutorial videos because there's things that happen in real life that you can't learn from a book. (P10)</p> |
| <p>Subcategory</p> | <p>Best Practice concerns the acknowledgment by the CCG, when they have witnessed or obtained a best-practice level of a skill(s) or expertise managing a resident situation or environment.</p> |
| <p>Quote Exemplars</p> | <p>I've learned so many tricks over the years of just if they wet their pull-up, how to put one on without taking their pants off. (P6)</p> <p>And there's an older gentleman who went through the Holocaust and he has really bad anxiety about it. And so my heart's there for him, but I also have a great affection for him and love to talk him down or distract him from those memories that he has. (P15)</p> |
| <p>Category – Trigger Points are related to the particularities in the ALH environment (e.g., employee characteristics, resident characteristics, resident response to care provided by CCG) that may highlight or make apparent areas of learning needs or interests.</p> | |

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| Subcategories | New on the Job is focuses on the CCG impressions and experiences when beginning work at a ALH site. |
| Quote Exemplars | <p>Orientation to Environment: I didn't even know who was who, or what the [resident room] numbers were, their names; you know. (P15)</p> <p>It takes time for new caregivers to get to the job and start working at the same rhythm as the other ones. (P2)</p> <p>Preparation: You're a certified caregiver, it's a one-week program. I sat in a classroom or, you know, and listened to someone, talk to me online and it just, and I took it, you know, a state certified test, but it had nothing really pertaining to things that I feel you need to know. (P4)</p> |
| Subcategories | Resident Acuity/Case Mix consists of variables that reflect the necessities, complexity, and diversity of the ALH residents' care needs. |
| Quote Exemplars | <p>Skilled Care Responsibilities – trach care: I think the last thing I learned recently was with one of our patients. It was taught by two RNs that came when she arrived, and this resident was a very high level of care. I learned a lot of things all at once. I learned how to use a suction for the trach. I learned trach care. I learned how to remove and replace the trach. (P10)</p> <p>Skilled Care Responsibilities–wound care: What I didn't like about the situation is she shouldn't have ever come to the house with wounds that were that deep. They were to the bone and they were all over her buttock area. So that... And everyone that saw it went, "Oh, my gosh." But what are you going to do? You're going to try to help. I mean, she had passed within three months of us having her here. But, again, she was another situation that had been hospitalized a long time. (P9)</p> <p>Behavior Extreme: A couple of weeks ago... she hit another caregiver with the lamp and pulled the hair, very, very hard... (P2)</p> |
| Subcategory | New Admission is defined as when an individual being admitted as a resident of the ALH. |
| Quote Exemplars | <p>Missing Resident Information: If they bring in a new resident and they have no information on the resident, so technically we don't even know anything about the resident. So we have to deal with what we got until we actually get the information. (P11)</p> <p>Wish I had more information about a resident on behavioral health before I get them. (P7)</p> |
| Subcategory | Sentinel Events* is an unanticipated event that results in death or serious injury to a patient. |
| Quote Exemplars | Medication Errors: I'm okay with losing my job today, but I'm not going to leave until I know this resident's okay." Well, thank goodness there's no family to call. Nurse practitioner knew him from other places. [self-talk] |

"Just relax", "relax." I was crying and nervous, embarrassed. The owner came in. He said, "Name of DCW" hey, I'm not going to fire you." He goes, "Thank you for being honest. He's going to be okay." By the end of the day, it was okay. Unfortunately, I did have to get a write-up. That was the second day. I thought, "I'm not going to go back tomorrow," and my husband says, "You go." (P8)

Resident Capacity/Staff Competence: They left the food away from her. When she was reaching for the food, she ended up falling out of her chair because she presented well. And I think that happens a lot where, especially thinking of now we have a lot of residents that kind of present themselves well. And so people don't realize they're there for a reason. They give the impression they have a routine down, but they don't, they're demented or, they have Alzheimer's. Anyways, she reached forward for the food and fell over and hit her head on a dresser, which caused her to, vomit. And someone came in her room and found her kind of laying on her back, choking on vomit. Then I came in the room and showed how to roll her over on her side and, called 9 1 1 and took care of the situation. (P4)

Resident Capacity/Staff Competence: Knowing when to give, when not to give water and food, or pill, medication, in a non-crushed form, to someone who's already active. They apparently gave the person medication, and it was the day I was supposed to work too, and then he started to aspirate, while the other one took the swabby... I call it the little sucker and put it down the mouth to try to clear his throat. It pushed it down more, and he aspirated to death. I don't think he was that close to death when I had left the day before. I gave him a fudge... and then trying to lie about the situation. I just think people need more education on medication, measuring the right morphine, and knowing when to give sips of water at a certain time. When they're active, it's just comfort care. You don't need to shove things in their mouth. And feeding them. (P8)

Resident Capacity/Staff Competence: She was getting very violent, and she was about to put a belt around my neck.... And that was last week ago. Very creepy. Like somebody said, "Oh, that's creepy." Yeah. She startled me. I was very scared. And she hit another caregiver with the lamp and pulled the hair. Very, very hard. ... That was my only salvation. If it was escalating more, I was going to call the police. What else I was going to do?... and she was very threatening. Very threatening to me. And another opportunity she was behind the doors and waiting for me and she told me, "I'm waiting for you." "What are you doing there?" "I'm for you." Oh my gosh. (P2)

Equipment: In the past, there have been, not with me, but accidents with the Hoyers because of the weight and not having the legs open, it can tip over. Not putting the sling on right, a resident could fall out. I have heard of numerous injuries ... (P8)

AIM 2. *Technology Interests and Needs*

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| <p>Category – Technology & Equipment Use encompasses the technology (e.g., MARS, iPad, laptop, computer) and equipment (e.g., instruments, appliances, and machinery) available and used by the CCG to facilitate delivery of care unique to the resident needs and/or required by state regulations.</p> | |
| <p>Subcategory</p> | <p>Know-How relates to the skills developed by the CCG as it pertains to the use of technology and equipment in the ALH.</p> |
| <p>Quote Exemplars</p> | <p>Some beds are electronic. Some beds are regular. (P11)</p> <p>I have a glucometer that is also up to data and fancy. (P7)</p> <p>I had never seen a Sara lift before. So, I thought, when I saw all the heavy people, I was like, oh, the old-fashioned Hoyer was such a hassle to me, it was dangerous, it was scary, and they said, "We have this new thing." (P8)</p> <p>Oh, yes, the MARS. They brought those in too ... about six years ago. (P8)</p> <p>I use iPad, a laptop and a computer desktop. I guess I would call myself technology illiterate. (P7)</p> <p>I feel like I'm not up to speed with technology in almost every realm. I just, I feel like it's an area that I could definitely do more training. (P12)</p> <p>Hate the crank ones [Hoyer Lift]. But I'm very proficient with the Hoyer [electronic] and the sit to stand Sara lift, and I do love training people. (P10)</p> <p>I have a little bit of experience with that [CPAP], but mostly our residents that have CPAP do it themselves. (P14)</p> <p>We have several people who use CPAP machines. And we've been trained in those and the cleanliness. So really a lot of that I didn't get through caregiving (school). That was all learning upon arrival of needing assistance with it. (P13)</p> <p>I think the last thing I learned recently was with one of our patients. It was taught by two RNs that came when she arrived, and this resident was a very high level of care. I learned a lot of things all at once. I learned how to use a suction for the trach. I learned trach care. I learned how to remove and replace the trach. (P10)</p> |
| <p>Subcategory</p> | <p>Information access involves accessing and vetting information resources using a computer or cellphone with Wi-Fi to accommodate residents' needs.</p> |
| <p>Quote Exemplars</p> | <p>It's called Epocrates... When I don't know a lot of things when it comes to like medications, I use that. (P15)</p> <p>I have Googled a medication to see what it's used for ... (P14)</p> |

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| | <p>There's also something on the iPads that they have. I don't know what it's called. I can't remember [the name of the software]. But you can like put it in [medication], and it'll tell you about it. (P15)</p> <p>They help their residents with their technology devices. P 14)</p> <p>I Google any medications or even a diagnosis, or if a person has this or this, what can I do to help kind of thing back. (P12)</p> <p>I always wondered because my aunt does fact checks on everything and is really good at it. And I have no clue how she does it...I really don't know. I go based off the most commonly between several sites. I'll go and read one site and then I'll go to the next and read what they have to say and I just kind of ... (P 13)</p> <p>As long as it's good information, I really... It doesn't bother me who it comes from. (P7)</p> <p>I'll use the internet and find a good medication page to look at because you can get almost anything off the internet. Will it be right? Not always. And if it's a very serious question, the owner will take it to the nurse that she has on staff or hospice nurse or try and get in touch with the doctor. (P10)</p> |
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AIM 3. *Barriers and Facilitators*

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| <p>Category - Assisted Living Standard Operating Practice (SOP) includes the methods that are taken to be considered prepared to provide care to the ALH resident.</p> | |
| <p>Subcategory</p> | <p>Education Access includes training, orientation, and mentoring available to CCG during their employment at ALH.</p> |
| <p>Quote Exemplars</p> | <p>Workplace Orientation - Makes a Difference: If you train somebody the right way, then you have less back training you have to go through when you find out they're doing it wrong. (P13)</p> <p>Workplace Orientation – Medication Administration: ...a lot of time people will be thrown into, oh, you're a certified caregiver, but you've never given meds before you have no clue what you're doing, but we need you to pass meds and they have no idea what they're doing. They have no training, you know, it's because someone's just trying to put a body in there. (P4)</p> <p>Management Valuing Potential – financial/education support: She sent me to school to get my certificate. (P13)</p> <p>Mentoring - Management Initiated: I think she (the manager/owner) was getting feedback from other caregivers who were saying where I was lost. So she took that information, put a caregiver to my side to help me with that. And I am forever grateful because I would still be floundering today. (P12)</p> |

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| | <p>Mentoring – Staff Initiated: I actually work with a gentleman he's 72 years old and he has never used a computer in his life. I have been teaching him how to type, I mean, he didn't know how to use a mouse. (P4)</p> <p>Education – Work Resources: No. If there are somebody? Not so much. No. (Regarding asking questions to and about information or care). (P2)</p> <p>Education - Commitment by Management: I do believe that our boss has made us so conscientious and understanding of it (i.e. COVID risk) by so much information. And she has given us incentives for things through the COVID, over prepared, we were wearing the N95s before other homes were wearing the N95s. She just implemented a lot of the stuff before the CDC did. (P14)</p> |
| <p>Category - CCG Moderators includes factors or characteristics inherent to a CCG that may impact or alter the pursuit or participation in their learning interests and needs.</p> | |
| Subcategory | Educational Preparedness is the required knowledge and skills a CCG needs to provide care in the ALH. |
| Quote Exemplars | <p>Previous Work Experience: I have been (i.e., worked) in large facilities, in small houses and homes, and working for agencies where they send you to different houses with different people. (P2)</p> <p>I worked in big facilities; I worked in rehabs. I did in-home health for a few years. I liked it. And then I transferred to working at Green Valley Hospital as admissions. (P7)</p> <p>Previous Life Experience: I will say one of the things that helped me the most is my background. I grew up on ranches. I grew up learning how to ride and work cows. Well, by doing that, you become very aware of body functions ...(P10)</p> <p>Education and Language: I see is the lack of education and understanding why things need to be done or the importance. And I think the language barrier comes next. (P4)</p> |
| Subcategory | Intrinsic Motivators includes how they view themselves and the reason they are a CCG. |
| Quote Exemplars | <p>Learning Through Self-Reflection: But there were signs and things going on that I should have known to get help and not try to do it by myself. That's happened a couple of times. (P15)</p> <p>Practice Improvement Through Self-Cultivation (i.e. Education): For me, it's education, continuing to learn, because things are always changing and not consistent. So I just say go, continue to be in school, continue as a caregiver and learn new things. (P15)</p> |

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| | <p>Learning Brings Enjoyment: I do very much enjoy learning. I do very much. I like hands-on, and I like people explaining and the... I do enjoy. The more I learn, the more I enjoy it. (P10)</p> <p>Helping Others Brings Fulfillment: The willingness to help people, to feel the satisfaction of doing something important in life. With that purpose working directly with people, feel that satisfaction at soul level. (P2)</p> <p>...it got into my blood. I mean, I love it. It's very satisfying to pretty much meet people's needs all day long. (P12)</p> <p>I've always had the love to care... just getting that abundance of love back from them (residents) because you're helping them is just all that I need. (P13)</p> <p>Respect for Seniors: I have a deep respect for seniors and what they've contributed and how they grew up. And they're very valuable parts of our community. (P9)</p> <p>There's this mindset where, oh, they're just old, put them in a home and you know, it's fine. They're gonna pass away anyway. So give him morphine, you know, I mean, and not just, it's heartbreaking to me and I know it's not for everyone. (P4)</p> <p>Actions Support the Greater Good: I really hope what comes out of this (research) is that you can, help people understand the importance of education and especially the medications. (P4)</p> <p>Committed to Residents Over Self: I think some of us were prepared to be locked down with our residents. I was (P14)</p> |
| Subcategory | Outside of Work includes activities and responsibilities outside of work responsibilities. |
| Quote Exemplars | <p>Family Obligations – Juggling Schedules: I work with a couple of girls that their husbands are caregivers and they go home and switch out the kids, you know, to work at night...(P4)</p> <p>Family Obligations – Single Parent: I've got two young kids... I am a single mom, so I've got to do everything. (P10)</p> <p>Academic Obligations: I'm good. Very tired. (currently in school) (P15)</p> <p>Self-care: I know how to clean myself and to connect with nature and the exercise ...(P2)</p> <p>Financial Obligations: I do couponing and stuff just to save money and then I resell them and I do Door Dash too. (P3)</p> <p>After-Shift Work Hangover – Physical Exhaustion: Note-Observation- During the interview, a participant was nodding off while the PI dealt with a technology issue. (P3)</p> |

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| Sometimes I sleep only three hours a day. (P2) |
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| | <p>I worked in big facilities; I worked in rehabs. I did in-home health for a few years. I liked it. And then I transferred to working at Green Valley Hospital as admissions. (P7)</p> <p>Previous Life Experience: I will say one of the things that helped me the most is my background. I grew up on ranches. I grew up learning how to ride and work cows. Well, by doing that, you become very aware of body functions ... (P10)</p> <p>Education and Language: I see is the lack of education and understanding why things need to be done or the importance. And I think the language barrier comes next. (P4)</p> |
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| | Committed to Residents Over Self: I think some of us were prepared to be locked down with our residents. I was (P14) |
| Subcategory | Outside of Work includes activities and responsibilities outside of work responsibilities. |
| Quote Exemplars | <p>Family Obligations – Juggling Schedules: I work with a couple of girls that their husbands are caregivers and they go home and switch out the kids, you know, to work at night...(P4)</p> <p>Family Obligations – Single Parent: I've got two young kids... I am a single mom, so I've got to do everything. (P10)</p> <p>Academic Obligations: I'm good. Very tired. (currently in school) (P15)</p> <p>Self-care: I know how to clean myself and to connect with nature and the exercise ...(P2)</p> <p>Financial Obligations: I do couponing and stuff just to save money and then I resell them and I do Door Dash too. (P3)</p> <p>After-Shift Work Hangover – Physical Exhaustion:</p> <p>Note-Observation: During the interview, a participant was nodding off while the PI dealt with a technology issue. (P3)</p> <p>Sometimes I sleep only three hours a day. (P2)</p> |

APPENDIX N:
ACRONYMS

Acronyms

| | |
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| AARP | American Association of Retired Persons |
| ACL | Administration for Community Living |
| ADCC | Adult Day Care Centers |
| AHRQ | Agency for Healthcare Research and Quality |
| AE | Adverse Event |
| AUTOS | Artifact User Task Organization Situation |
| AzNCIA | Arizona Board of Nursing Care Institution Administrators and Assisted Living Facility Managers |
| ADL | Activities of Daily Living |
| AL | Assisted Living |
| ALF | Assisted Living Facilities |
| ALH | Assisted Living Home |
| AzDHS | Arizona Department of Health Services |
| CDC | Centers for Disease Control |
| CEAL | Center for Excellence in Assisted Living |
| CCG | Certified Care Giver |
| CINAHL | Cumulative Index to Nursing and Allied Health Literature |
| CITI | Collaborative Institutional Training Initiative |
| CON | College of Nursing |
| COVID-19 | Coronavirus Disease of 2019 |
| DCM | Direct Care Manager |
| DCW | Direct Care Worker |
| DHS | Department of Health Services |
| DSMP | Data and Safety Monitoring Plan |
| EI | Educational Intervention |
| ECPC | Economic Classification Policy Committee |
| FG | Focus Group |
| FFCI-CI | Function Focused Care Intervention for Cognitively Impaired |
| GAO | Government Accountability Office |
| GDPR | General Data Protection Regulation |
| HF | Human Factors |
| HFIR | Human Factors Interpersonal Relations |
| HSPP | Human Subject Protection Program |
| IHI | Institute for Healthcare Improvement |
| IOM | Institute of Medicine |
| IPUMS | No longer treated as an acronym. Provides census and survey data. |
| IRB | Institutional Review Board |
| IT | Information Technology |
| ISO | Information Security Office |
| MeSH | Medical Subject Headings |
| NAICS | North American Industry Classification System |
| NASA | National Aeronautics and Space Administration |

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|--------------|---|
| LHTI | Learning & Healthcare Technology Innovations |
| NCAL | National Center for Assisted Living |
| NAICS | North American Industry Classification System |
| NSLTCP | National Study of Long-Term Care Providers |
| PHI | Paraprofessional Healthcare Institute |
| PI | Primary Investigator |
| Project ECHO | Project Extension for community Healthcare Outcomes |
| QCA | Qualitative Content Analysis |
| QD | Qualitative Description |
| SOC | Standard Occupational Classification |
| STAR-C | STAR-C Community Consultants Program |
| TBA | To Be Announced |
| UA | University of Arizona |
| WBL | Work Based Learning |

REFERENCES

- Adu, P. (2019). *A Step-by-Step Guide to Qualitative Data Coding*. Routledge.
- American Association of Retired Persons. (AARP). (2018). *Long-term care calculator: compare costs, types of service in your area*. <https://www.aarp.org/caregiving/financial-legal/info-2017/long-term-care-calculator.html>
- American Health Care Association. (AHCA). (2022). *AHCA/NCAL highlights growing nursing home closures*. <https://www.ahcancal.org/News-and-Communications/Press-Releases/Pages/AHCANCAL-Highlights-Growing-Nursing-Home-Closures.aspx>
- Audi, R. (2005). *The Cambridge dictionary of philosophy*. Cambridge University
- Baillie, L. (2015). Promoting and evaluating scientific rigour in qualitative research. *Nurs Stand*, 29(46), 36-42. <https://doi.org/10.7748/ns.29.46.36.e8830>
- Barrett, E. A. M. (2017). Again, what is nursing science? *Nurs Sci Q*, 30(2), 129-133. <https://doi.org/10.1177/0894318417693313>
- Bender, M., & Holmes, D. (2019). Reconciling nursing's art and science dualism: Toward a processual logic of nursing. *Nurs Inq*, 26(3). <https://doi.org/10.1111/nin.12293>
- Bender, T. J., Wise, M. E., Utah, O., Moorman, A. C., Sharapov, U., Drobeniuc, J., Khudyakov, Y., Fricchione, M., White-Comstock, M. B., Thompson, N. D., & Patel, P. R. (2012). Outbreak of hepatitis B virus infections associated with assisted monitoring of blood glucose in an assisted living facility-Virginia, 2010. *PLoS One*, 7(12), e50012. <https://doi.org/10.1371/journal.pone.0050012>
- Bernard, H. R. (1994). *Research methods in anthropology. qualitative and quantitative approaches* (2nd ed.). Sage Publications, Inc.
- Bernard, R., Wutich, A., & Ryan, G. (2017). *Analyzing qualitative data. Systematic approaches* (2nd ed.). Sage Publications, Inc.
- Beuving, J., & de Vries, G. (2014). *Doing qualitative research: the craft of naturalistic inquiry*. Amsterdam University Press. <http://ebookcentral.proquest.com/lib/uaz/detail.action?docID=1934288>
- Bloomberg, L. D., & Volpe, M. (2019). *Completing your qualitative dissertation* (4th ed.). Sage Publications, Inc.
- Boerner, K., Gleason, H., & Jopp, D. S. (2017). Burnout after patient death: challenges for direct care workers. *J Pain Symptom Management*, 54(3), 317-325. <https://doi.org/10.1016/j.jpainsymman.2017.06.006>

- Boy, G. (2014). Dealing with the unexpected. In P. Millot (Ed.), *Risk management in life critical systems* (1st ed.). ISTE Ltd & John Wiley & Sons, Inc.
- Boy, G. A. (2011). *The handbook human-machine interaction: a human-centered design approach*. MPH Books Group.
- Boy, G. A. (2013). *Orchestrating human-centered design*. Springer.
- Boy, G. A. (2017). Human-centered design of complex systems: an experience-based approach. *Design Science*, 3.
- Boy, G. A., & Grote, G. (2011). The authority issue in organizational automation. In F. Boy (Ed.), *The handbook human-machine interaction: a human-centered design approach* (pp. 131-147). Ashgate Publishing.
- Boy, G. A., & Riedel, N. (2009). Participatory human-centered design: user involvement and design cross-fertilization. In M. Kurosu, *Human centered design* Berlin, Heidelberg.
- Bradshaw, C., Atkinson, S., & Doody, O. (2017). Employing a qualitative description approach in health care research. *Glob Qual Nurs Res*, 4, 2333393617742282. <https://doi.org/10.1177/2333393617742282>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Brewer, B. B., & Watson, J. (2018). Evaluation of authentic human caring professional practices. In W. Rosa, S. Horton-Deutsch, & J. Watson (Eds.), *A handbook for caring science: expanding the paradigm* (pp. 317-326). Springer.
- Brown, K. M., Lindenberger, J. H., & Bryant, C. A. (2008). Using pretesting to ensure your messages and materials are on strategy. *Health Promot Pract*, 9(2), 116-122. <https://doi.org/10.1177/1524839908315134>
- Bryman, A. (1992). Quantitative and qualitative research: further reflections on their integration. In J. Brannen (Ed.), *Mixing methods: qualitative and quantitative research* (pp. 57-78). Ashgate Publishing Company.
- Byrne, D. (2015). Response to Fugard and Potts: supporting thinking on sample sizes for thematic analyses: a quantitative tool. *Int J. Soc Res Methodol*, 18(6), 689-691. <https://doi.org/10.1080/13645579.2015.1005455>
- Caffrey, C., Harris-Kojetin, L., Rome, V., & Sengupta, M. (2014). Characteristics of residents living in residential care communities, by community bed size: United States, 2012. *NCHS Data Brief*, (171), 1-8.

- Caffrey, C., & Sengupta, M. (2018). Variation in residential care community resident characteristics, by size of community: United States, 2016. *NCHS Data Brief*, 299, 1-8. <https://pubmed.ncbi.nlm.nih.gov/29442991/>
- Caffrey, C., Sengupta, M., Park-Lee, E., Moss, A., Rosenoff, E., & Harris-Kojetin, L. (2012). Residents living in residential care facilities: United States, 2010. *NCHS Data Brief*, 91, 1-8. <https://pubmed.ncbi.nlm.nih.gov/22617169/>
- Callaway, B. (2002). *Hildegard Peplau. Psychiatric nurse of the century*. Springer Publishing Company.
- Campbell, S. (2017). *Racial and gender disparities within the direct care workforce: five key findings* (Policy Research, Issue. PHI.) <https://phinational.org/resource/racial-gender-disparities-within-direct-care-workforce-five-key-findings/>
- Campbell, S. (2018). *Workplace injuries and the direct care workforce* (Policy Research, Reports & MultiMedia, Issue.) <https://phinational.org/resource/workplace-injuries-direct-care-workforce/>
- Campbell, S., Drake, A., Espinoza, R., & Scales, K. (2021). Caring for the future: the power and potential of America's direct care workforce. In *Data collection and quality*. Bronx, NY: PHI.
- Carder, P., O'Keeffe, J., & O'Keeffe, C. (2015). *Compendium of residential care and assisted living regulations and policy* (Contract #HHSP23320100021WI).
- Carlsen, B., & Glenton, C. (2011). What about N? A methodological study of sample-size reporting in focus group studies. *BMC Med Res Methodol*, 11(26), 26. <https://doi.org/10.1186/1471-2288-11-26>
- Carp, P. (2020). *AHRQ establishes national nursing home COVID action network*. <https://www.ahrq.gov/news/newsroom/press-releases/covid-action-network.html>
- Carper, B. A. (1978). Fundamental patterns of knowing in nursing. *Adv Nurs Sci*, 1(1), 13-24.
- Castle, N. G., Handler, S. M., & Wagner, L. M. (2014). Potential prescription drug misuse in assisted living. *Res Gerontol Nurs*, 7(1), 25-32. <https://doi.org/10.3928/19404921-20130910-01>
- Castle, N. G., Wagner, L. M., Sonon, K., & Ferguson-Rome, J. C. (2012). Measuring administrators' and direct care workers' perceptions of the safety culture in assisted living facilities. *Jt Comm J Qual Patient Saf*, 38(8), 375-382.

- Center for Disease Control and Prevention. (CDC). (2018). *National study of long-term care providers*. U.S. Department of Health & Human Services. https://www.cdc.gov/nchs/nsltcp/nsltcp_questionnaires.htm
- Center for Excellence in Assisted Living. (CEAL). (2015). *The future of assisted living in the era of healthcare reform*. Summary report. 2014 Invitational Symposium, Issue, p. 5. <https://theceal.org/research-reports-tools/>
- Chenail, R. (2011a). How to conduct clinical qualitative research on the patient's experience. *The Qualitative Report*, 16(4), 1173-1190. <http://www.nova.edu/ssss/QR/QR16-4/chenail.pdf>
- Chenail, R. (2011b). Interviewing the investigator: strategies for addressing instrumentation and researcher bias concerns in qualitative research. *The Qualitative Report*, 16(1), 255-262. <https://nsuworks.nova.edu/tqr/vol16/iss1/16>
- Chinn, P., & Kramer, M. (2015). *Knowledge development in nursing. Theory and process*. (9th ed.). Elsevier.
- Cho, J. Y., & Lee, E.-H. (2014). Reducing confusion about grounded theory and qualitative content analysis: similarities and differences. *The Qualitative Report*, 19(32), 1.
- Cloutier, J. D., Duncan, C., & Bailey, P. H. (2007). Locating Carper's aesthetic pattern of knowing within contemporary nursing evidence, praxis and theory. *Int J Nurs Educ Scholarsh*, 4(1).
- Cody, W. (2006). *Philosophical and theoretical perspectives for advanced nursing practice* (4th ed.). Jones and Bartlett Publishers.
- Colorafi, K. J., & Evans, B. (2016). Qualitative descriptive methods in health science research. *Herd*, 9(4), 16-25. <https://doi.org/10.1177/1937586715614171>
- Comley, A. L. (1994). A comparative analysis of Orem's self-care model and Peplau's interpersonal theory. *J Adv Nurs*, 20(4), 755-760. <https://doi.org/10.1046/j.1365-2648.1994.20040755.x>
- Coulson, E., & Blaszczyk, A. T. (2016). Assisted living facilities: the next frontier for consultant pharmacists. *Consult Pharm*, 31(2), 107-111. <https://doi.org/10.4140/TCP.n.2016.107>
- Crabtree, B. F., & Miller, W. L. (1991). A qualitative approach to primary care research: the long interview. *Fam Med*, 23(2), 145-151.
- Creswell, J. W. (2003). *Research design. Qualitative, quantitative and mixed methods approaches* (2nd ed.). Sage Publications Inc.

- Creswell, J. W. (2013). *Qualitative inquiry & research design. Choosing among five approaches* (3rd ed.). Sage Publications
- Creswell, J. W., Klassen, A. C., Plano Clark, V., & Smith, K. (2011). *Best practices for mixed methods research in the health sciences*. Bethesda, MD: National Institutes of Health.
- Crotty, M. (1998). *The foundations of social research. Meaning and perspective in the research process* (2nd ed.). Sage Publications, Inc.
- Curry, L. A., Nembhard, I. M., & Bradley, E. H. (2009). Qualitative and mixed methods provide unique contributions to outcomes research. *Circulation*, *119*(10), 1442-1452. <https://doi.org/10.1161/CIRCULATIONAHA.107.742775>
- Cypress, B. S. (2017). Rigor or reliability and validity in qualitative research: perspectives, strategies, reconceptualization, and recommendations. *Dimens Crit Care Nurs*, *36*(4), 253-263. <https://doi.org/10.1097/dcc.0000000000000253>
- De Boer, B., Caljouw, M., Landeweer, E., Perry, M., Stoop, A., Groen, W., Schols, J., & Verbeek, H. (2022). The need to consider relocations within long-term care. *J Am Med Dir Assoc*, *23*(2), 318-320. <https://doi.org/10.1016/j.jamda.2021.11.021>
- DeGroot, H. A. (2012). Scientific inquiry in nursing: a model for a new age. In P. G. R. N. B. C. Shearer (Ed.), *Perspectives on nursing theory* (6th ed., pp. 185-206). Wolters Kluwer Health | Lippincott, Williams & Wilkins.
- Dowling, R. (2000). Power, subjectivity and ethics in qualitative research. In H. Iain (Ed.), *Qualitative research methods in human geography* (1 ed., Vol. 1, pp. 23-36). Oxford University Press.
- Doyle, L. W., McCabe, C., Keogh, B., Brady, A. M., & McCann, M. (2020). An overview of the qualitative descriptive design within nursing research. *Journal of Research in Nursing*, *25*(5), 443-455. <https://doi.org/10.1177/1744987119880234>
- Drake, A. (2020). *Direct care work is real work. Elevating the role of the direct care worker*. Bronx, NY: PHI. <https://phinational.org/resource/direct-care-work-is-real-work-elevating-the-role-of-the-direct-care-worker/>
- Dupler, A. E., & Crogan, N. L. (2004). Comparing needed training with topics of interest among assisted-living providers. *J Nurses Staff Dev*, *20*(1), 38-41. [doi: 10.1097/00124645-200401000-00007](https://doi.org/10.1097/00124645-200401000-00007)
- Dys, S., Smith, L., Tunalilar, O., & Carder, P. (2020). Revisiting the role of physicians in assisted living and residential care settings. *Gerontology and Geriatric Medicine*, *6*, 233372142097984. <https://doi.org/10.1177/2333721420979840>

- Eakin, J. M., & Gladstone, B. (2020). "Value-adding" analysis: doing more with qualitative data. *International Journal of Qualitative Methods*, 19, 160940692094933. <https://doi.org/10.1177/1609406920949333>
- Economic Classification Policy Committee. (ECPC). (2017). *Initiative to create a product classification system, phase I: exploratory effort to classify service products*. <https://www.whitehouse.gov/wp-content/uploads/2017/11/Economic-Classification-Policy-Committee-April16-1999.pdf>
- Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis: a focus on trustworthiness. *Sage Open*, 4(1), 2158244014522633.
- Emden, C., & Sandelowski, M. (1998). The good, the bad and the relative, part one: conceptions of goodness in qualitative research. *Int J Nurs Pract*, 4(4), 206-212.
- Erlingsson, C., & Brysiewicz, P. (2017). A hands-on guide to doing content analysis. *African Journal of Emergency Medicine*, 7(3), 93-99. <https://doi.org/https://doi.org/10.1016/j.afjem.2017.08.001>
- Espinoza, R. (2017). *Federal policy priorities: strengthening the direct care workforce*. (Data Collection & Quality, Issue. PHI.) <https://phinational.org/resource/federal-policy-priorities-strengthening-the-direct-care-workforce/>
- Espinoza, R. (2020). States are moving to prioritize the direct care workforce and its immigrant workers. *Aging Today*, 41(2), 8. <https://online.flippingbook.com/view/1041556/8/>
- Falk-Rafael, A. (2018). *Why not nursing?* <https://Nursology.net/2018/10/16/why-Nursology/>
- Family Caregiver Alliance. (FCA). (2017). *A population at risk*. <https://www.caregiver.org/caregiver-health>
- Fawcett, J. (2018). Developing the knowledge for human caring. In W. Rosa, S. Horton-Deutsch, & J. Watson (Eds.), *A handbook for caring science: expanding the paradigm*, (pp. 103-116). Springer Publishing Company.
- Fawcett, J. (2019). Nursing revisited and revived. *J Adv Nurs*, 75(5), 919-920. doi: 10.1111/jan.13925
- Fawcett, J., Aronowitz, T., AbuFannouneh, A., Usta, M. A., Fraley, H. E., Howlett, M. S., Mtengezo, J. T., Muchira, J. M., Nava, A., Thapa, S., & Zhang, Y. (2015). Thoughts about the name of our discipline. *Nurs Sci Q*, 28(4), 330-333. <https://doi.org/10.1177/0894318415599224>

- Ferrer, A., Formiga, F., Sanz, H., Almeda, J., & Padros, G. (2017). Multimorbidity as specific disease combinations, an important predictor factor for mortality in octogenarians: the Octabaix study. *Clin Interv Aging, 12*, 223-231. <https://doi.org/10.2147/cia.S123173>
- Field, W. E. (1979). *The psychotherapy of Hildegard E. Peplau*. PSF Productions.
- Flick, U. (2017). Mantras and myths: the disenchantment of mixed-methods research and revisiting triangulation as a perspective. *Qualitative Inquiry, 23*(1), 46-57.
- Flick, U. (2018a). *An introduction to qualitative research*. Sage Publications, Inc.
- Flick, U. (2018b). Triangulation. In K. Norman & Y. Lincoln (Eds.), *The Sage handbook of qualitative research* (5th ed., pp. 444-461). Sage Publications, Inc.
- Flick, U., Kardoff, E., & Steinke, I. (2007). *A companion to qualitative research*. Sage Publications, Inc.
- Forchuk, C., Beaton, S., Crawford, L., Ide, L., Voorberg, N., & Bethune, J. (1989). Incorporating Peplau's theory and case management. *J Psychosoc Nurs Ment Health Serv, 27*(2), 35-38.
- Forchuk, C. (1993). *Hildegard E. Peplau: interpersonal nursing theory*. Sage Publications, Ltd.
- Ford, J. S., & Profetto-McGrath, J. (1994). A model for critical thinking within the context of curriculum as praxis. *Journal of Nursing Education, 33*(8), 341-344.
- Freedman, V. A., & Spillman, B. C. (2014). The residential continuum from home to nursing home: size, characteristics and unmet needs of older adults. *J Gerontol B Psychol Sci Soc Sci, 69 Suppl 1*, S42-50. <https://doi.org/10.1093/geronb/gbu120>
- Friedman, T. L. (2007). *The world is flat. A brief history of the twenty-first century 3.0*. Picador
- Friedman, T. L. (2016). *Thank you for being late. An optimist's guide to thriving in the age of accelerations*. Farrar, Straus, and Giroux.
- Fusch, P. I., Fusch, G., & Ness, L. R. (2018). Denzin's paradigm shift: revisiting triangulation in qualitative research. *Journal of Social Change, 10*(1), 19-32. <https://doi.org/10.5590/JOSC.2018.10.1.02>
- Fusch, P. I., & Ness, L. R. (2015). Are we there yet? Data saturation in qualitative research. *The Qualitative Report, 20*(9), 1408-1416. <http://nsuworks.nova.edu/tqr/vol20/iss9/3>
- Galik, E., Resnick, B., Lerner, N., Hammersla, M., & Gruber-Baldini, A. L. (2015). Function focused care for assisted living residents with dementia. *Gerontologist, 55 Suppl 1*, S13-26. <https://doi.org/10.1093/geront/gnu173>

- Garvey, C., Jones, R. (2021). Is there a place for theoretical frameworks in qualitative research? *International Journal of Qualitative Methods*, 20. <https://dx.doi.org/10.1177/1609406920987959>
- Gaugler, J. E., Hobday, J. V., Robbins, J. C., & Barclay, M. P. (2016a). Direct care worker training to respond to the behavior of individuals with dementia: the CARES(R) dementia-related behavior online program. *Gerontol Geriatr Med*, 2. <https://doi.org/10.1177/2333721415626888>
- Gendron, T. L., Pryor, J. M., & Welleford, E. A. (2017). Lessons learned from a program evaluation of a statewide continuing education program for staff members working in assisted living and adult day care centers in Virginia. *J Appl Gerontol*, 36(5), 610-628. <https://doi.org/10.1177/0733464816633124>
- Ghebreyesus, T. A. (2020). *WHO director-general's opening remarks at the media briefing on COVID-19*. In: World Health Organization.
- Gitlin, L. N., Marx, K., Stanley, I. H., & Hodgson, N. (2015). Translating evidence-based Dementia caregiving interventions into practice: state-of-the-science and next steps. *Gerontologist*, 55(2), 210-226. <https://doi.org/10.1093/geront/gnu123>
- Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today*, 24(2), 105-112.
- Greene, A., Wiener, J., Khatutsky, G., Johnson, R., O'Keeffe, J. (2013). *Medicaid in residential care* (#HHSP23320095651WC). <https://aspe.hhs.gov/execsum/medicaid-residential-care-executive-summary>
- Greenhalgh, T., & Taylor, R. (1997). Papers that go beyond numbers (qualitative research). *BMJ (Clinical research ed)*, 315(7110), 740-743. <https://doi.org/10.1136/bmj.315.7110.740>
- Guba, E. G., & Lincoln, S. (1994). Competing paradigms in qualitative research. In N. Denzin & Y. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105-117). Sage Publications, Inc.
- Guba, E. G., & Lincoln, Y. S. (1981). *Effective evaluation. Improving the usefulness of evaluation results through responsive and naturalistic approaches*. Jossey-Bass Publishers
- Guba, E. G., & Lincoln, Y. S. (1982). Epistemological and methodological bases of naturalistic inquiry. *ECTJ*, 30(4), 233-252.
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, 18(1), 59-82.

- Gurman, T., Rubin, S., Roesss, A. (2012). Effectiveness of mhealth behavior change communication interventions in developing countries: a systematic review of the literature. *Journal of Health Communication: International Perspectives*, 17, 82-104. <https://doi.org/10.1080/10810730.2011.649160>
- Hagen, S. (2013). *Rising demand for long-term services and support for elderly people*. <https://www.cbo.gov/sites/default/files/113th-congress-2013-2014/reports/44363-ltc.pdf>
- Han, A., & Kunik, M. E. (2017). Feasibility of training and delivering compassionate touch in long-term care. *Clin Gerontol*, 1-9. <https://doi.org/10.1080/07317115.2017.1381212>
- Han, K., Trinkoff, A. M., Storr, C. L., Lerner, N., & Yang, B. K. (2017). Variation across U.S. assisted living facilities: admissions, resident care needs, and staffing. *Journal of Nursing Scholarship*, 49(1), 24-32. <https://doi.org/10.1111/jnu.12262>
- Harris-Kojetin, L., Sengupta, M., Park-Lee E. et al. (2016). *Long-term care providers and services users in the United States: data from the National Study of Long-Term Care Providers, 2013–2014*. Vital Adn Health Statistics, Issue. https://www.cdc.gov/nchs/data/series/sr_03/sr03_038.pdf
- Hawes, C., Phillips, C. D., Holan, S., Sherman, M., & Hutchison, L. L. (2005). Assisted living in rural America: results from a national survey. *J Rural Health*, 21(2), 131-139.
- Hennink, M. M., Kaiser, B. N., & Marconi, V. C. (2016). Code saturation versus meaning saturation: how many interviews are enough? *Qualitative Health Research*, 27(4), 591-608. <https://doi.org/10.1177/1049732316665344>
- Hennink, M. M., Kaiser, B. N., & Weber, M. B. (2019). What influences saturation? Estimating sample sizes in focus group research. *Qualitative Health Research*, 29(10), 1483-1496. <https://doi.org/10.1177/1049732318821692>
- Hewko, S. J., Cooper, S. L., Huynh, H., Spiwek, T. L., Carleton, H. L., Reid, S., & Cummings, G. G. (2015). Invisible no more: a scoping review of the health care aide workforce literature. *BMC Nurs*, 14, 38. <https://doi.org/10.1186/s12912-015-0090-x>
- Holloway, I., & Galvin, K. (2016). *Qualitative research in nursing and healthcare* (4th ed.). John Wiley & Sons, Inc. <http://ebookcentral.proquest.com/lib/uaz/detail.action?docID=4622920>
- Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qual Health Res*, 15(9), 1277-1288. <https://doi.org/10.1177/1049732305276687>
- Huston, P., & Rowan, M. (1998). Qualitative studies. Their role in medical research. *Can Fam Physician*, 44, 2453-2458.

- Hyer, K., Molinari, V., Kaplan, M., & Jones, S. (2010). Credentialing dementia training: the Florida experience. *Int Psychogeriatr*, 22(6), 864-873.
<https://doi.org/10.1017/s1041610210000426>
- Institute of Medicine (IOM) & Committee on the Future Health Care Workforce for Older Americans. (2008). *Retooling for an aging America: building the health care workforce*. Washington, DC: National Academies Press (US).
<https://pubmed.ncbi.nlm.nih.gov/25009893/>
- Joint Center for Housing Studies of Harvard University. (University). (2014). *Housing America's older adults - meeting the needs of an aging population*.
http://www.jchs.harvard.edu/sites/jchs.harvard.edu/files/jchs-housing_americas_older_adults_2014.pdf
- Jootun, D., McGhee, G., & Marland, G. R. (2009). Reflexivity: promoting rigour in qualitative research. *Nurs Stand*, 23(23), 42-46. <https://doi.org/10.7748/ns2009.02.23.23.42.c6800>
- Kahlke, R. M. (2014). Generic qualitative approaches: pitfalls and benefits of methodological mixology. *International Journal of Qualitative Methods*, 13(1), 37-52.
- Karon, S., Wiener, J., Greene, A., Khatutsky, G., Johnson, R. (2014). *What factors affect residential care facility charges?* ASPE: Office of the Assistant Secretary for Planning and Evaluation. U.S. Department of Health and Human Services.
<https://aspe.hhs.gov/reports/what-factors-affect-residential-care-facility-charges-1>
- Kaskie, B. P., Nattinger, M., & Potter, A. (2015). Policies to protect persons with dementia in assisted living: deja vu all over again? *Gerontologist*, 55(2), 199-209.
<https://doi.org/10.1093/geront/gnu179>
- Keele, R. (2010). Quantitative versus qualitative research, or both. In *Nursing research and evidence-based practice* (pp. 35-52). Jones-Bartlett Learning.
- Kelly, C., Craft Morgan, J., Kemp, C. L., & Deichert, J. (2018). A profile of the assisted living direct care workforce in the United States. *J Appl Gerontol*, 733464818757000.
<https://doi.org/10.1177/0733464818757000>
- Kelly, K. (2016). *The inevitable. Understanding the 12 technological forces that will shape our future*. Viking.
- Kemp, C., Luo, S., & Ball, M. (2012). "Meds are a real tricky area": examining medication management and regulation in assisted living. *Journal of Applied Gerontology*, 31(1), 126-149. doi:10.1177/0733464810381986

- Khatutsky G. O. C., Wiener, J. M., Greene, A. M., Johnson, R., Jessup, E. A., Vreeland, E., Sengupta, M., Caffrey, C., & Harris-Kojetin, L. (2016). *Residential care communities and their residents in 2010: a national portrait* (DHHS Publication No. 2016-1041). Long-Term Care Statistics Branch, Issue. U.S. Department of Health and Human Services. https://www.cdc.gov/nchs/data/nsrcf/nsrcf_chartbook.pdf
- Kleinheksel, A. J., Rockich-Winston, N., Tawfik, H., & Wyatt, T. (2020). Demystifying content analysis. *American Journal of Pharmaceutical Education*, 84(1), 127-137.
- Korstjens, I., & Moser, A. (2018). Series: practical guidance to qualitative research. Part 4: trustworthiness and publishing. *Eur J Gen Pract*, 24(1), 120-124. <https://doi.org/10.1080/13814788.2017.1375092>
- Kossover, R. A., Chi, C. J., Wise, M. E., Tran, A. H., Chande, N. D., & Perz, J. F. (2014). Infection prevention and control standards in assisted living facilities: are residents' needs being met? *J Am Med Dir Assoc*, 15(1), 47-53. <https://doi.org/10.1016/j.jamda.2013.09.011>
- Krefting, L. (1991). Rigor in qualitative research: the assessment of trustworthiness. *The American Journal of Occupational Therapy*, 45(3), 214-222.
- Kyngäs, H. (2019). Qualitative Research and Content Analysis. In H. Kyngäs, K. Mikkonen, & M. Kääriäinen (Eds.), *The application of content analysis in nursing science research* (pp. 3-11). Cham: Springer International Publishing AG. <https://doi.org/10.1007/978-3-030-30199-6>
- Lambert, V., & Lambert, C. (2012). Qualitative descriptive research: an acceptable design. *Pacific Rim International Journal of Nursing Research*, 16(4), 255-256.
- Leroi, I., Samus, Q. M., Rosenblatt, A., Onyike, C. U., Brandt, J., Baker, A. S., Rabins, P., & Lyketsos, C. (2007a). A comparison of small and large assisted living facilities for the diagnosis and care of dementia: the Maryland assisted living study. *Int J Geriatr Psychiatry*, 22(3), 224-232. <https://doi.org/10.1002/gps.1665>
- Lincoln, S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage Publications, Inc.
- Lincoln, Y. S., Lynham, S. A., & Guba, E. G. (2018). Paradigmatic controversies, contradictions and emerging confluences. In D. Guba (Ed.), *The Sage handbook of qualitative research* (5th ed., pp. 105-150). Sage Publications, Inc.
- Lobo, M. L. (2005). Descriptive research is the bench science of nursing. *West J Nurs Res*, 27(1), 5-6. <https://doi.org/10.1177/0193945904271298>

- Long, T., & Johnson, M. (2000). Rigour, reliability and validity in qualitative research. *Clinical Effectiveness in Nursing*, 4(1), 30-37.
<https://doi.org/https://doi.org/10.1054/cein.2000.0106>
- Lum, H. D., Mody, L., Levy, C. R., & Ginde, A. A. (2014). Pandemic influenza plans in residential care facilities. *J Am Geriatr Soc*, 62(7), 1310-1316.
<https://doi.org/10.1111/jgs.12879>
- Maas, M. L., & Buckwalter, K. C. (2006). Providing quality care in assisted living facilities: recommendations for enhanced staffing and staff training. *J Gerontol Nurs*, 32(11), 14-22.
- Mack, N., Woodsong, C., MacQueen, K., Guest, G., & Namey, E. (2011). *Qualitative research methods: a data collector's field guide*. Family Health International. www.fhi.org
- Malmqvist, J., Hellberg, K., Möllås, G., Rose, R., & Shevlin, M. (2019). Conducting the pilot study: a neglected part of the research process? Methodological findings supporting the importance of piloting in qualitative research studies. *International Journal of Qualitative Methods*, 18, 1-11. <https://doi.org/10.1177/1609406919878341>
- Marak, C. (2018, 2018). *Assisted living costs. Review the average costs of assisted living by state*. SeniorCare.com. <https://www.assistedlivingfacilities.org/resources/assisted-living-costs/>
- Martin, M. L., Forchuk, C., Santopinto, M., & Butcher, H. K. (1992). Alternative approaches to nursing practice: application of Peplau, Rogers, and Parse. *Nurs Sci Q*, 5(2), 80-85.
<https://doi.org/10.1177/089431849200500208>
- Mason, M. (2010). Sample size and saturation in PhD studies using qualitative interviews. In *Forum: Qualitative Social Research*, 11(3).
- Maxmen, A. (2021). Why US coronavirus tracking can't keep up with variants. *Nature*, 592(7854), 336-337. <https://doi.org/10.1038/d41586-021-00908-0>.
- Maxwell, J. (1992). Understanding and validity in qualitative research. *Harvard Educational Review*, 62(3), 279-301. <https://doi.org/10.17763/haer.62.3.8323320856251826>
- Mayring, P. (2000). Qualitative content analysis: a companion to qualitative research. *Forum Qualitative Sozialforschung /Forum: Qualitative Social Research*, 1(2), 159-176.
<http://www.qualitative-research.net/fqs/>
- Mayring, P. (2014). *Qualitative content analysis - theoretical foundation, basic procedures and software solution*. www.beltz.de. <http://nbn-resolving.de/urn:nbn:de:0168-ssoar-395173>

- McCurry, S. M., LaFazia, D. M., Pike, K. C., Logsdon, R. G., & Teri, L. (2012). Development and evaluation of a sleep education program for older adults with dementia living in adult family homes. *Am J Geriatr Psychiatry*, 20(6), 494-504. <https://doi.org/10.1097/JGP.0b013e318248ae79>
- McCurry, S. M., Logsdon, R. G., Mead, J., Pike, K. C., LaFazia, D. M., Stevens, L., & Teri, L. (2017). Adopting evidence-based caregiver training programs in the real world: outcomes and lessons learned from the STAR-C Oregon translation study. *J Appl Gerontol*, 36(5), 519-536. <https://doi.org/10.1177/0733464815581483>
- McKnights. (2022). *More than 400 nursing home closures projected for 2022: report*. HayMarket Media, Inc. <https://www.mcknights.com/news/more-than-400-nursing-home-closures-projected-for-2022-report/>
- McLellan-Lemal, E., Macqueen, K., & L. Neidig, J. (2003). Beyond the qualitative interview: data preparation and transcription. *Field Methods*, 15, 63. <https://doi.org/10.1177/1525822X02239573>
- McNabney, M. K., Onyike, C., Johnston, D., Mayer, L., Lyketsos, C., Brandt, J., Rosenblatt, A., & Samus, Q. (2014). The impact of complex chronic diseases on care utilization among assisted living residents. *Geriatr Nurs*, 35(1), 26-30. <https://doi.org/10.1016/j.gerinurse.2013.09.003>
- McNabney, M. K., Samus, Q. M., Lyketsos, C. G., Brandt, J., Onyike, C. U., Baker, A., & Rosenblatt, A. (2008). The spectrum of medical illness and medication use among residents of assisted living facilities in central Maryland. *J Am Med Dir Assoc*, 9(8), 558-564. <https://doi.org/10.1016/j.jamda.2008.03.003>
- McPhail, S. (2016). Multimorbidity in chronic disease: impact on health care resources and costs. *Risk Management and Healthcare Policy*, 5(9), 143-156. <https://doi.org/10.2147/RMHP.S97248>
- Mei, Y. Y., Marquard, J., Jacelon, C., & DeFeo, A. L. (2013). Designing and evaluating an electronic patient falls reporting system: perspectives for the implementation of health information technology in long-term residential care facilities. *Int J Med Inform*, 82(11), e294-306. <https://doi.org/10.1016/j.ijmedinf.2011.03.008>
- Meleis, A. I. (2012). *Theoretical nursing. Development & progress*. Lippincott, Williams, & Wilkins.
- Merriam, S. B., & Tisdell, E. J. (2016). Qualitative data analysis. In *Qualitative research. A guide to design and implementation* (4th ed., pp. 195-236). Jossey-Bass. <http://ebookcentral.proquest.com/lib/uaz/detail.action?docID=2089475>

- Merriam, S. B., & Tisdell, E. J. (2016a). Being a careful observer. In *Qualitative research. A guide to design and implementation*. (4th ed., pp. 137-161). Jossey-Bass.
- Merriam, S. B., & Tisdell, E. J. (2016b). What is qualitative research. In *Qualitative research. A guide to design and implementation* (4th ed., pp. 3-21). Jossey-Bass.
- Merrill, E. B. (2015). Guest editorial. Integrating technology into nursing education [Article]. *ABNF Journal*, 26(4), 72-73.
<http://ezproxy.library.arizona.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=asn&AN=110537041&site=ehost-live>
- Miller, B. (1986). *Family research methods* (Vol. 4). Sage Publications Inc.
- Mitchell, J. M., & Kemp, B. J. (2000). Quality of life in assisted living homes: a multidimensional analysis. *J Gerontol B Psychol Sci Soc Sci*, 55(2), P117-127.
- Mitty, E., Resnick, B., Allen, J., Bakerjian, D., Hertz, J., Gardner, W., Rapp, M. P., Reinhard, S., Young, H., & Mezey, M. (2010). Nursing delegation and medication administration in assisted living. *Nurs Adm Q*, 34(2), 162-171.
<https://doi.org/10.1097/NAQ.0b013e3181d9183f>
- Moffat, M. (1996). Three quarters of a century of healing the generations. *Physical Therapy*, 76(11), 1242.
- Mollica, R. (2009). *State Medicaid reimbursement policies and practices in assisted living*.
<https://www.theceal.org/information/assisted-living-resource-center/clearinghouse/item/777-state-medicaid-reimbursement-policies-and-practices-in-assisted-living>
- Morgan, L. A., Rubinstein, R. L., Frankowski, A. C., Perez, R., Roth, E. G., Peeples, A. D., Nemecek, M., Eckert, J. K., & Goldman, S. (2014). The facade of stability in assisted living. *J Gerontol B Psychol Sci Soc Sci*, 69(3), 431-441.
<https://doi.org/10.1093/geronb/gbu019>
- Morse, J., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *International Journal of Qualitative Methods*, 1(2), 13-22. <https://doi.org/10.1177/160940690200100202>
- Morse, J. M. (1995). The significance of saturation. *Qualitative Health Research*, 5(2), 147-149.
<https://doi.org/10.1177/104973239500500201>
- Morse, J. M. (2015). Critical analysis of strategies for determining rigor in qualitative inquiry. *Qualitative Health Research*, 25(9), 1212-1222.
<https://doi.org/10.1177/1049732315588501>

- Morse, J. M. (2018). Reframing rigor in qualitative inquiry. In N. Denzin & Y. Lincoln (Eds.), *The Sage handbook of qualitative research* (5th ed., pp. 796-817). Sage Publications Inc.
- Morse, J. M., Dimitroff, L. J., Harper, R., Koontz, A., Kumra, S., Matthew-Maich, N., Mihas, P., & Murphey, C. (2011). Considering the qualitative-quantitative language divide. *Qualitative Health Research, 21*(9), 1302-1303.
<https://doi.org/10.1177/1049732310392386>
- Morse, J., & Field, P. (1995). *Nursing research. The applications of qualitative approaches*. Stanely Thornes.
- Morse, W. C., Lowery, D. R., & Steury, T. (2014). Exploring saturation of themes and spatial locations in qualitative public participation geographic information systems research. *Society and Natural Resources, 27*(5), 557-571.
<https://doi.org/10.1080/08941920.2014.888791>
- Mortazhejri, S., Patey, A. M., Stacey, D., Bhatia, R. S., Abdulla, A., & Grimshaw, J. M. (2020). Understanding determinants of patients' decisions to attend their family physician and to take antibiotics for upper respiratory tract infections: a qualitative descriptive study. *BMC Fam Pract, 21*(1). <https://doi.org/10.1186/s12875-020-01196-9>
- Moser, A., & Korstjens, I. (2018). Series: practical guidance to qualitative research. Part 3: sampling, data collection and analysis. *Eur J Gen Pract, 24*(1), 9-18.
<https://doi.org/10.1080/13814788.2017.1375091>
- Munhall. (1993). 'Unknowing': toward another pattern of knowing in nursing. *Nurs Outlook, 41*(3), 125-128.
- Munhall, P. (2012). *Nursing research: a qualitative perspective* (5th ed.). Jones & Bartlett.
- Murphy, E., Dingwall, R., Greatbatch, D., Parker, S., & Watson, P. (1998). Qualitative research methods in health technology assessment: a review of the literature. *Health Technology Assessment 2*(16), 1-274. <https://doi.org/10.3310/hta2160>
- National Center for Assisted Living. (NCAL). (2017). *Assisted living state regulatory review*. <https://www.ahcancal.org/ncal/advocacy/regs/Pages/AssistedLivingRegulations.aspx>
- National Center for Assisted Living. (NCAL). (2019). *Assisted living state regulatory review*. American Health Care Association. <https://www.ahcancal.org/Assisted-Living/Policy/Pages/state-regulations.aspx>
- Nattinger, M. C., & Kaskie, B. (2017). Determinants of the rigor of state protection policies for persons with dementia in assisted living. *J Aging Soc Policy, 29*(2), 123-142.
<https://doi.org/10.1080/08959420.2016.1236324>

- Navickas, R., Petric, V. K., Feigl, A. B., & Seychell, M. (2016). Multimorbidity: what do we know? What should we do? *J Comorb*, 6(1), 4-11. <https://doi.org/10.15256/joc.2016.6.72>
- Neergaard, M. A., Olesen, F., Andersen, R. S., & Sondergaard, J. (2009). Qualitative description - the poor cousin of health research? *BMC Med Res Methodol*, 9, 52. <https://doi.org/10.1186/1471-2288-9-52>
- Nelson, J. (2017). Using conceptual depth criteria: addressing the challenge of reaching saturation in qualitative research. *Qualitative Research*, 17(5), 554-570. <https://doi.org/10.1177/1468794116679873>
- Nelson, R. (2002). *Major theories supporting health care informatics*. Mosby.
- Newman, I., & Benz, C. (1998). *Qualitative-quantitative research methodology. Exploring the interactive vintinum*. Southern Illinois University Press.
- North American Industry Classification System. (NAICS). (n.d.). *Introduction to NAICS*. <https://www.census.gov/naics/>
- NVivo. (2020). *QSR International Pty Ltd*. In <https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home>
- O'Toole, A. W., & Welt, S. R. (1989). *Hildegard E Peplau, selected works: interpersonal theory in nursing*. Springer.
- O'Reilly, M., & Parker, N. (2013). 'Unsatisfactory saturation': a critical exploration of the notion of saturated sample sizes in qualitative research. *Qualitative Research*, 13(2), 190-197.
- Osterman, P. (2018). Improving long-term care by finally respecting home-care aides. *Hastings Center Report* 48, September, no. 5:S67-S70. <https://doi: 10.1002/hast.917>
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Adm Policy Ment Health*, 42(5), 533-544. <https://doi.org/10.1007/s10488-013-0528-y>
- Paraprofessional Healthcare Institute. (PHI). (2020). *Policy research report. Direct care workers in the United States*. (Key facts - PHI.) <https://phinational.org/resource/direct-care-workers-in-the-united-states-key-facts/>
- Park-Lee, E., Caffrey, C., Sengupta, M., Moss, A., Rosenoff, E., & Harris-Kojetin, L. (2011). *Residential care facilities: a key sector in the spectrum of long-term care providers in the United States*. (NCHS data brief, no. 78).

- Paterson, J. G. (1971). From a philosophy of clinical nursing to a method of nursology. *Nurs Res*, 20(2), 143-146. <https://doi.org/10.1097/00006199-197103000-00009>
- Patton, M. Q. (1980). *Qualitative evaluation methods*. Sage Publications.
- Patton, M. Q. (2002). Two decades of developments in qualitative inquiry. A personal, experiential perspective. *Qualitative Social Work*, 1(3), 261-283.
- Patton, M. Q. (2015). *Qualitative research & evaluation methods. Integrating theory and practice* (4th ed.). Sage Publications, Inc. .
- Peplau, H. (1952). *Interpersonal relations in nursing*. G. P. Putnam's Sons.
- Peplau, H. (1965). The heart of nursing: interpersonal relations. *The Canadian Nurse*, 61, 273-275.
- Peplau, H. (1988). The art and science of nursing: similarities, differences, and relations. *Nurs Sci Q*, 8-15.
- Peplau, H. (1994a). Interpersonal relationships in psychiatric nursing. In A. W. O'Toole & S. R. Welt (Eds.), *Hildegard E. Peplau, selected works. Interpersonal theory in nursing* (pp. 5-20). The Macmillan Press LTD.
- Peplau, H. (1994b). Quality of life: an interpersonal perspective. *Nurs Sci Q*, 7(1), 10-15.
- Peplau, H. E. (1987). Interpersonal constructs for nursing practice. *Nurse Educ Today*, 7(5), 201-208.
- Pettman, E. (2007). A history of manipulative therapy. *Journal of Manual & Manipulative Therapy*, 15(3), 165-174.
- Phillips, C., Hawes, C., & Rose, M. (2000). *Differences among services in high privacy or high service assisted living facilities* (#HHS-100-94-0024 & #HHS-100-98-0013). U.S. Department of Health and Human Services.
- Phillips, L. J., Leary, E., Blankenship, J., & Zimmerman, S. (2019). Physical function, relocation, and mortality outcomes in residential care and assisted living residents. *J Aging Health*, 31(6), 903-924. <https://doi.org/10.1177/0898264317740047>
- Phillips, L. R., Guo, G., & Kim, H. (2013). Elder mistreatment in U.S. residential care facilities: the scope of the problem. *J Elder Abuse Negl*, 25(1), 19-39. <https://doi.org/10.1080/08946566.2012.712851>
- Phillips, L. R., & Ziminski, C. (2012). The public health nursing role in elder neglect in assisted living facilities. *Public Health Nurs*, 29(6), 499-509. <https://doi.org/10.1111/j.1525-1446.2012.01029.x>

- Polit, D., & Beck, C. (2010). Generalization in quantitative and qualitative research: myths and strategies. *Int J Nurs Stud*, 47, 1451-1458.
- Polit, D., & Beck, C. (2012). *Nursing research: generating and assessing evidence for nursing practice* (9th ed.). Wolters Kulwer.
- Powers, B. A., & Knapp, T. R. (2011). *Dictionary of nursing theory and research* (4th ed.). Springer Publishing Company, LLC.
- Reed, P. (2011). The spiral path of nursing knowledge. In P. Reed & N. Shearer (Eds.), *Nursing knowledge and theory innovation. Advancing the science of practice*. Springer Publishing Company.
- Reed, P. (2018). Philosophical issues and nursing science. *Nurs Sci Q*, 31(1), 31-35.
<https://doi.org/10.1177/0894318417741101>
- Reed, P. G. (1995). A treatise on nursing knowledge development for the 21st century: beyond postmodernism. *ANS Adv Nurs Sci*, 17(3), 70-84.
- Reed, P. G. (1997). Nursing: the ontology of the discipline. *Nurs Sci Q*, 10(2), 76-79.
<https://doi.org/10.1177/089431849701000207>
- Reed, P. G. (2018). Entanglement and the relevance of method in qualitative research. *Nurs Sci Q*, 31(3), 243-244. <https://doi.org/10.1177/0894318418774927>
- Reed, P. G. (2019). Intermodernism: a philosophical perspective for development of scientific nursing theory. *Advances in Nursing Science*. 42(1), 17-27.
<https://doi.10.1097/ANS.0000000000000249>
- Reed, P. G. (2020). Moving on: from metaparadigm to midparadigm for knowledge development. *Nurs Sci Q*, 33(1), 38-40. <https://doi.org/10.1177/0894318419881796>
- Reed, P. G., & Rawnsley, M. M. (2000). Scholarly dialogue. *Nurs Sci Q*, 13(2), 129-136.
<https://doi.org/10.1177/08943180022107564>
- Reed, P. G. (2019b). A philosophy of nursing science and practice: intermodernism. In Reed, P. G., & Shearer, N. C. (Eds). *Nursing knowledge and theory innovation: advancing the science of practice* (2nd ed.). (pp. 21-46). Springer Publishing Company, LLC.
- Reed, P. G., & Shearer, N. B. (2011). *Nursing knowledge and theory innovation: advancing the science of practice*. Springer Publishing Company, LLC..
- Reid Searl, K., McAllister, M., Dwyer, T., Krebs, K. L., Anderson, C., Quinney, L., & McLellan, S. (2014). Little people, big lessons: an innovative strategy to develop interpersonal skills in undergraduate nursing students. *Nurse Educ Today*, 34(9), 1201-1206.
<https://doi.org/10.1016/j.nedt.2014.04.004>

- Resnick, B., Galik, E., Vigne, E., & Carew, A. P. (2016). Dissemination and implementation of function focused care for assisted living. *Health Educ Behav*, 43(3), 296-304. <https://doi.org/10.1177/1090198115599984>
- Ritchie, J., Lewis, J., Nicholls, C., & Ormston, R. (2003). The foundations of qualitative research In *Qualitative research practice. A guide for social science students and researchers*. Sage Publications, Inc.
- Rolfe, G. (1993). Closing the theory—practice gap: a model of nursing praxis. *J Clin Nurs*, 2(3), 173-177.
- Rolfe, G. (2006a). Nursing praxis and the science of the unique. *Nurs Sci Q*, 19(1), 39-43. <https://doi.org/10.1177/0894318405284128>
- Rolfe, G. (2006b). Validity, trustworthiness and rigour: quality and the idea of qualitative research. *J Adv Nurs*, 53(3), 304-310. <https://doi.org/10.1111/j.1365-2648.2006.03727.x>
- Roper, N. (1976). A model for nursing and nursing. *J Adv Nurs*, 1(3), 219-227. <https://doi.org/10.1111/j.1365-2648.1976.tb00958.x>
- Roy, C. (2019). Nursing knowledge in the 21st century: domain-derived and basic science practice-shaped. *ANS Adv Nurs Sci*, 42(1), 28-42. <https://doi.org/10.1097/ANS.0000000000000240>
- Rubin, H. J., & Rubin, I. S. (2005). Structuring the interview. In *Qualitative interviewing: the art of hearing data* (2nd ed., pp. 129-151). Sage Publications, Inc. <https://doi.org/10.4135/9781452226651>
- Rubio, D. M., Robinson, G. F., Gilliam, V. A., Primack, B. A., Switzer, G. E., Seltzer, D. L., & Kapoor, W. N. (2014). Characterization of investigators' approach to translational research: a qualitative study. *Clin Transl Sci*, 7(6), 441-446. <https://doi.org/10.1111/cts.12196>
- Ruggles, S., Flood, S., Goeken, R., Grover, J., Meyer, E., Pacas J., & Sobek, M. (2019). *IPUMS USA: version 9.0 [dataset]* <https://doi.org/https://doi.org/10.18128/D010.V9.0>
- Samus, Q. M., Black, B. S., Bovenkamp, D., Buckley, M., Callahan, C., Davis, K., Gitlin, L. N., Hodgson, N., Johnston, D., Kales, H. C., Karel, M., Kenney, J. J., Ling, S. M., Panchal, M., Reuland, M., Willink, A., & Lyketsos, C. G. (2018). Home is where the future is: the BrightFocus Foundation consensus panel on dementia care. *Alzheimers Dement*, 14(1), 104-114. <https://doi.org/10.1016/j.jalz.2017.10.006>
- Sandelowski, M. (1986). The problem of rigor in qualitative research. *ANS Adv Nurs Sci*, 8(3), 27-37.

- Sandelowski, M. (1993). Theory unmasked: the uses and guises of theory in qualitative research. *Res Nurse Health*, 16(3), 213-8.
- Sandelowski, M. (1995). Sample size in qualitative research. *Res Nurs Health*, 18(2), 179-183.
- Sandelowski, M. (2000). Whatever happened to qualitative description? *Res Nurs Health*, 23(4), 334-340.
- Sandelowski, M., & Barroso, J. (2002). Finding the findings in qualitative studies. *Journal of Nursing Scholarship*, 34(3), 213-219. <https://doi.org/10.1111/j.1547-5069.2002.00213.x>
- Sandelowski, M., Docherty, S., & Emden, C. (1997). Focus on qualitative methods. Qualitative metasynthesis: issues and techniques. *Res Nurs Health*, 20(4), 365-371.
- Sandelowski, M., & Leeman, J. (2012). Writing usable qualitative health research findings. *Qual Health Res*, 22(10), 1404-1413. <https://doi.org/10.1177/1049732312450368>
- Scales, K. (2018). *Growing a strong direct care work force. a recruitment and retention guide for employers* <https://phinational.org/resource/growing-strong-direct-care-workforce-recruitment-retention-guide-employers/>
- Scales, K. (2020). *Caring for the future: the power and potential of America's direct care workforce*. (Report, PHI) <http://www.phinational.org/caringforthefuture/>
- Scales, K., & Lepore, M. J. (2020). Always essential: valuing direct care workers in long-term care. *Public Policy Aging Rep*, praa022. <https://doi.org/10.1093/ppar/praa022>
- Schmid, H. (1981). Qualitative research and occupational therapy. *The American Journal of Occupational Therapy*, 35(2), 105-106. <https://doi.org/doi.org/10.5014/ajot.35.2.105>
- Schreier, M. (2013). Qualitative content analysis. In U. Flick (Ed.), *The Sage handbook of qualitative data analysis* (pp. 170-183). Sage Publications Ltd. <https://doi.org/https://dx.doi.org/10.4135/9781446282243>
- Schultz, P., & Meleis, A. (2004). Nursing epistemology: traditions, insights, questions. In P. Reed & N. Shearer (Eds.), *Perspectives on nursing theory* (4th ed., pp. 229-237). Lippincott, Williams, & Wilkins.
- Sengupta, M., Lendon, J. P., Caffrey, C., Melekin, A., & Singh, P. (2022). Post-acute and long-term care providers and services users in the United States, 2017-2018. *Vital Health Stat* 3(47), 1-93.
- Shah, H. (2017a). *Understaffed and overworked: poor working conditions and quality of care in residential care facilities for the elderly* [Report] (Faculty Scholarship, Issue. L. D. Commons. <https://digitalcommons.law.ggu.edu/pubs/788>

- Shahid, Z., Kalayanamitra, R., McClafferty, B., Kepko, D., Ramgobin, D., Patel, R., Aggarwal, C. S., Vunnam, R., Sahu, N., Bhatt, D., Jones, K., Golamari, R., & Jain, R. (2020). COVID-19 and older adults: what we know. *J Am Geriatr Soc*, 68(5), 926-929. <https://doi.org/10.1111/jgs.16472>
- Sharpp, T. J., & Young, H. M. (2016). Experiences of frequent visits to the emergency department by residents with dementia in assisted living. *Geriatr Nurs*, 37(1), 30-35. <https://doi.org/10.1016/j.gerinurse.2015.09.001>
- Shippee, T., Akosionu, O., Brasure, M., & Beebe, T. (2019). *Literature review and environmental scan: identifying quality measures in assisted living. A report to the Minnesota Department of Human Services*. University of Minnesota, School of Public Health, Division of Health Policy and Management. https://mn.gov/dhs/assets/UMN-assisted-living-quality-report_tcm1053-393870.pdf
- Silva, M. C. (1977). Philosophy, science, theory: interrelationships and implications for nursing research. *Journal of Nursing Scholarship*, 9(3), 59-63. (1977)
- Silva, M. C., Sorrell, J. M., & Sorrell, C. D. (1995). From Carper's patterns of knowing to ways of being: an ontological philosophical shift in nursing. *Advances in Nursing Science*, 18(1), 1-13.
- Simpson, H. (1991). *Peplau's model in action*. The Macmillan Press Ltd.
- Smith, S. M., Wallace, E., O'Dowd, T., & Fortin, M. (2016). Interventions for improving outcomes in patients with multimorbidity in primary care and community settings. *Cochrane Database Syst Rev*, 3, Cd006560. <https://doi.org/10.1002/14651858.CD006560.pub3>
- Spetz, J., Trupin, L., Bates, T., & Coffman, J. M. (2015). Future demand for long-term care workers will be influenced by demographic and utilization changes. *Health Affairs (Millwood)*, 34(6), 936-945. <https://doi.org/10.1377/hlthaff.2015.0005>
- Srivastava, P., & Hopwood, N. (2009). A practical iterative framework for qualitative data analysis. *International Journal of Qualitative Methods*, 8(1), 76-84. <https://doi.org/10.1177/160940690900800107>
- Stalmeijer, R. E., McNaughton, N., & Van Mook, W. N. (2014). Using focus groups in medical education research: AMEE Guide No. 91. *Med Teach*, 36(11), 923-939. <https://doi.org/10.3109/0142159x.2014.917165>
- Steup, M. (2001). Epistemic duty, evidence, and internality. In M. Steup (Ed.), *Knowledge, truth, and duty: essays on epistemic justification, responsibility, and virtue*. Oxford University Press.

- Stone, R., & Bryant, N. (2019). The future of the home care workforce: training and supporting aides as members of home-based care teams. *Journal of the American Geriatrics Society*, 67(52), S444-S448. <https://doi.org/10.1111/jgs.15846>
- Stone, R., & Harahan, M. F. (2010). Improving the long-term care workforce serving older adults. *Health Aff (Millwood)*, 29(1), 109-115. <https://doi.org/10.1377/hlthaff.2009.0554>
- Stone, R. I. (2004). The direct care worker: the third rail of home care policy. *Annu Rev Public Health*, 25, 521-537. <https://doi.org/10.1146/annurev.publhealth.25.102802.124343>
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research. Grounded theory procedures and techniques*. Sage Publications, Inc.
- Super, N. (2020). Three trends shaping the politics of aging in America. *Public Policy & Aging Report*.
- Surmiak, A. (2018). Confidentiality in qualitative research involving vulnerable participants: researchers' perspectives. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, 19(3). <https://doi.org/10.17169/fqs-19.3.3099>
- Suter, W. N. (2011). Qualitative data, analysis, and design. In W. N. Suter (Ed.), *Introduction to educational research: a critical thinking approach* (2nd ed., pp. 342-386). Sage Publications, Inc. <https://doi.org/https://dx.doi.org/10.4135/9781483384443.n12>
- Swanson-Aprill, L., Luz, C., Travis, A., Hunt, J., & Wamsley, S. (2019). *Policy brief: direct care workforce shortage*. Michigan: Michigan Department of Health & Human Services. <http://www.advancingstates.org/hcbs/article/michigan-policy-brief-direct-care-workforce-shortage>
- Takahashi, T. (1992). Perspectives on nursing knowledge. *Nurs Sci Q*, 5(2), 86-91. <https://doi.org/10.1177/089431849200500209>
- Thomas, K.S., Zhang, W., Cornell, P.Y., Smith, L., Kaskie, B., Carder, P. (2020). State variability in the prevalence and healthcare utilization of assisted living residents with dementia. *Journal of the American Geriatrics Society*, 68(7), 1504-1511. <https://doi.org/10.1111/jgs.16410>
- Thomas, K. S., Zhang, W., Dosa, D. M., Carder, P., Sloane, P., & Zimmerman, S. (2021). Estimation of excess mortality rates among US assisted living residents during the COVID-19 pandemic. *JAMA Network Open*, 4(6), e2113411. <https://doi.org/10.1001/jamanetworkopen.2021.13411>
- Thorne, S. (2020). Beyond theming: making qualitative studies matter. *Nursing Inquiry*, 27(1), p. 2 <https://dx.doi.org/10.1111/nin.12343>

- Thorne, S. (2016). *Interpretive description*. Routledge, Taylor & Francis Group.
<https://doi.org/10.4324/9781315426259>
- Thorne, S. (2020). Rethinking Carper's personal knowing for 21st century nursing. *Nursing Philosophy*, 21(4), 1-7. <https://doi.org/10.1111/nup.12307>
- Tobin, G. A., & Begley, C. M. (2004). Methodological rigour within a qualitative framework. *J Adv Nurs*, 48(4), 388-396. <https://doi.org/10.1111/j.1365-2648.2004.03207.x>
- Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care*, 19(6), 349-357. <https://doi.org/10.1093/intqhc/mzm042>
- Tracy, S. J. (2010). Qualitative quality: eight “big-tent” criteria for excellent qualitative research. *Qualitative Inquiry*, 16(10), 837-851.
- Tuckett, A. G. (2004). Qualitative research sampling: the very real complexities. *Nurse Res*, 12(1), 47-61. <https://doi.org/10.7748/nr2004.07.12.1.47.c5930>
- US Government Accountability Office. (GAO). (2014). *Fair labor standards act: extending protections to home care workers*. Washington, DC.
<https://www.gao.gov/products/GAO-15-12>
- US Government Accountability Office. (GAO). (2018). *Medicaid assisted living services. Improved federal oversight of beneficiary health and welfare is needed*. Washington, DC.
- Vaismoradi, M., Turunen, H., & Bondas, T. (2013). Content analysis and thematic analysis: implications for conducting a qualitative descriptive study. *Nurs Health Sci*, 15(3), 398-405. <https://doi.org/10.1111/nhs.12048>
- Van Manen, M. (1990). *Researching lived experience. Human science for an action sensitive pedagogy*. The Althouse Press, The University of Western Ontario.
- van Rijnsoever, F. J. (2017). (I can't get no) saturation: simulation and guidelines for sample sizes in qualitative research. *PLoS One*, 12(7), e0181689.
<https://doi.org/10.1371/journal.pone.0181689>
- Varcoe, C. (1997). The revolution never ends: challenges of praxis for nursing education In S. Thorne & V. Hayes (Eds.), *Nursing praxis. Knowledge and action* (pp. 180-200). Sage Publications, Inc.
- Vespa, J., Armstrong, D., & Medina, L. (2018). *Demographic turning points for the United States: population projections for 2020 to 2060*. (P25-1144). Wahington, DC

- Walker, B. L., & Harrington, S. S. (2013). The effects of restorative care training on caregiver job satisfaction. *J Nurses Prof Dev*, 29(2), 73-78. <https://doi.org/10.1097/NND.0b013e318286c2e0>
- Weilacher, R. R. (n.d., 2020). *AARC - 50 years of service*. American Association for Respiratory Care. <https://www.aarc.org/aarc/timeline-history/>
- Weller, S. C., Vickers, B., Bernard, H. R., Blackburn, A. M., Borgatti, S., Gravlee, C. C., & Johnson, J. C. (2018). Open-ended interview questions and saturation. *PLoS One*, 13(6), e0198606. <https://doi.org/10.1371/journal.pone.0198606>
- Wellin, C. (2018). Paid caregiving for older adults with serious or chronic illness: ethnographic perspectives, evidence, and implications for training. In C. Wellin (Ed.), *Critical gerontology comes of age. Advances in research and theory for a new century* (1st ed., pp. 112-133). Taylor & Francis.
- White, J. (1995). Patterns of knowing: review, critique, and update. *ANS Adv Nurs Sci*, 17(4), 73-86.
- Willis, D. G., Sullivan-Bolyai, S., Knafl, K., & Cohen, M. Z. (2016). Distinguishing features and similarities between descriptive phenomenological and qualitative description research. *West J Nurs Res*, 38(9), 1185-1204. <https://doi.org/10.1177/0193945916645499>
- Wilson, K. B. (2007). Historical evolution of assisted living in the United States, 1979 to the present. *Gerontologist*, 47 Spec No 3, 8-22.
- Wolcott, H. F. (1994). *Transforming qualitative data. Descriptions, analysis, and interpretation*. Sage Publications, Inc.
- Woods, D. L., Guo, G., Kim, H., & Phillips, L. R. (2010). We've got trouble: medications in assisted living. *J Gerontol Nurs*, 36(4), 30-39. <https://doi.org/10.3928/00989134-20100302-02>
- Woolley, C. M. (2009). Meeting the mixed methods challenge of integration in a sociological study of structure and agency. *Journal of Mixed Methods Research*, 3(1), 7-25.
- Xerri, D. (2018). Two methodological challenges for teacher-researchers: reflexivity and trustworthiness. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 91(1), 37-41. <https://doi.org/10.1080/00098655.2017.1371549>
- Zimmerman, S., Gruber-Baldini, A. L., Sloane, P. D., Eckert, J. K., Hebel, J. R., Morgan, L. A., Stearns, S. C., Wildfire, J., Magaziner, J., Chen, C., & Konrad, T. R. (2003). Assisted living and nursing homes: apples and oranges? *Gerontologist*, 43 Spec No 2, 107-117.

- Zimmerman, S., Sloane, P. D., Eckert, J. K., Gruber-Baldini, A. L., Morgan, L. A., Hebel, J. R., Magaziner, J., Stearns, S. C., & Chen, C. K. (2005). How good is assisted living? Findings and implications from an outcomes study. *J Gerontol B Psychol Sci Soc Sci*, *60*(4), S195-204.
- Zimmerman, S., Sloane, P. D., Katz, P. R., Kunze, M., O'Neil, K., & Resnick, B. (2020). The need to include assisted living in responding to the COVID-19 pandemic. *J Am Med Dir Assoc*, *21*(5), 572-575.