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Staff Development of Direct Care Workers in Pennsylvania: The Relationship between Organizational Structure and Culture and Best-Practices in Training

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STAFF DEVELOPMENT OF DIRECT CARE WORKERS IN PENNSYLVANIA:
THE RELATIONSHIP BETWEEN ORGANIZATIONAL STRUCTURE AND
CULTURE AND BEST-PRACTICES IN TRAINING

A Dissertation

Submitted to the School of Graduate Studies and Research

in partial fulfillment of the

Requirements of the Degree

Doctor of Philosophy

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Title: Staff Development of Direct Care Workers in Pennsylvania: The Relationship between Organizational Structure and Culture and Best-Practices in Training

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Using the conceptual model of social structure and personality framework (House, 1981) as a theoretical guide, this cross sectional mixed-method design examined how organizational structure and culture relate to practices for training direct care workers in 328 aging and disability network service provider organizations in Pennsylvania.

To answer the research questions, a Best-Practices in Training Index measured the extent of best-practices in provider organizations. The study used a variety of quantitative and qualitative analytical tools that include demographic analysis, exploratory analysis on the univariate level, and multivariate regression analysis. I analyzed the content of open-ended responses to two survey questions. In order to promote greater depth, I triangulated the findings from the qualitative analysis with results from quantitative analyses.

The results indicate that the structural predictors of best-practices in training include evaluation practices, network-type, payer-mix, the organization's size, and intensity of care needs. The cultural predictors for best-practices in training include: the direct care workers' input into care decisions and direct care worker integration in the organization. The results support no interaction between structural and cultural variables in relation to best-practices in training.

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CHAPTER I

INTRODUCTION

Statement of the Problem

An alarming gap exists between the supply of and the demand for Direct Care Workers (DCWs) who support aging individuals in the United States. A recent survey of organizations in the United States reports approximately 110,000 DCW vacancies (American Health Care Association (AHCA), 2008). Critical to care quality, DCWs form the core of the long-term care workforce, providing 80 to 90 percent of all daily interpersonal communication with aging individuals in long-term care arrangements (Harris-Kojetin, Lipson, Fielding, Kiefer, & Stone, 2004; Rose, David, Jones, 2003). While the DCW shortage presents a challenge for care quality for all older adults, aging individuals with developmental disabilities are particularly vulnerable.

The current mismatch between supply of and demand for DCWs results from the convergence of several disparate demographic trends. Adding to the demand, we find increasing numbers of aging individuals (Haywood & Zhang, 2001) and a longer lifespan for persons with developmental disabilities (Davidson, Heller, Janicki & Hyer, 2004). Simultaneously, there is a diminishing supply of DCWs. Due to decreased fertility in recent decades (Settersten, 2005), the population of women aged 25 to 54 years, who comprise the majority of DCWs, will decline by 2030 (U.S. Department of Health Human Services (DHHS), 2004). In addition, high rates of turnover among DCWs, averaging 66% industry-wide, (AHCA, 2008; Institute for Future of Aging Services (IFAS), 2007), contribute to a lack of supply of DCWs. Given the structural and cultural issues DCWs face in their jobs, such as physical and emotionally draining workloads (Maas, Specht, Buckwalter, Gittler, & Bechen, 2008), and lack of respect (Bowers,

Esmond, & Jacobson, 2003), the high rate of turnover among these workers (AHCA, 2008; DHHS, 2004) is not surprising.

The growing need for, yet shrinking pool of, DCWs create a “care gap” with inadequate workforce levels to meet the labor needs of service provider organizations in the aging and developmental disability care systems (DHHS, 2004). Addressing this issue requires a better understanding of how to recruit and retain a workforce of qualified DCWs (Harris-Kojetin, et al., 2004). Research suggests staff development as a crucial pathway toward enhancing retention of DCWs and the quality of care they provide (Castle, Engberg, Anderson, Men, 2007; IFAS & the Paraprofessional Healthcare Institute (PHI), 2005; Parsons, Simmons, Penn, & Furlough, 2003). Yet, we know very little about how, within service provider organizations, structural and cultural factors relate to DCW staff development practices. Thus, the purpose of this study is to examine, at the organizational level, the relationships between structural and cultural variables and DCW training practices.

The quality of DCW training relates to the quality of care they provide to those they serve (Morgan & Konrad, 2008; Zimmerman et al., 2005), who are among the most vulnerable in society (Cohen-Mansfield, Marx, Regier, Dakheel-Ali, 2009; Davidson, et al., 2004). Likewise, training practices contribute to the stability and growth of the direct care workforce (IFAS & PHI, 2005), an imperative social concern (AHCA, 2008; Stone & Wiener, 2001). What are the structural and cultural characteristics of the service provider organizations that provide quality DCW training that adheres to evidence-based best-practices? What are the challenges and needs of service provider organizations when it comes to training DCWs?

The role of training of DCWs at the organizational level is relatively unexplored. Some research on DCWs working in the developmental disability and frail older adult contexts correlates structural components, such as workload levels, with job (dis)satisfaction and DCWs' intention to leave the job (Ejaz, Noelker, Menne, & Bagaka, 2008; Hatton, et al., 2001). Empirical evidence also suggests that cultural components, such as social support within the workplace, are positively related with DCW job satisfaction and their commitment to the organization (Hatton, et al., 2001; Pillemer et al., 2003). At the individual level, research shows that staff development is positively related to job satisfaction among DCWs (Ejaz, et al., 2008; Hatton et al., 2001). As a result of the state regulations that govern them, service provider organizations (SPOs) have responsibility for staff development (Pennsylvania Department of Health, 2009; Pennsylvania Department of Public Welfare, 2009). However, regulations vary from state to state (Mabry & Kemeny, in press). The literature does not address how the varying structural and cultural characteristics of service provider organizations, such as their size, population, funding sources, and the value and place of DCWs within them, relate to training practices for these core care providers.

Significance of the Study

To inform public policy discussions about workforce development issues on national and state levels, governmental leaders need a better understanding of how structural and cultural factors of service provider organizations (SPOs) relate to the training needs, challenges, and practices of DCWs. Policymakers need to differentiate between necessary support systems for DCWs based upon structural characteristics such as geographical location, type of organization, and size of facility (Felce, Jones, Lowe, &

Perry, 2003; Zimmerman et al., 2005). In some locations, within long-term care provider organizations, no empirical research exists on the efficacy of initiatives promising culture change and evaluation of current training requirements (Pennsylvania Department on Aging, 2007). To assist in decision-making for appropriate change, Pennsylvania policymakers would benefit from better information about best-practices in training and their relationship to differences in organizations.

Within Pennsylvania, depending on the type of service or setting, the current regulations for training of direct care/service workers vary considerably. For example, sheltered workshop/vocational facilities workers, and community/group home staff must complete 24 hours of non-specified training annually. (Pennsylvania Dept. of Public Welfare, 2007). Pennsylvania regulations require personal care workers, nurse aides, and home health aides to have 12 hours of annual training that may include some selection of safety and emergency response, activities of daily living, restraint education, abuse prevention, infection control, residents' rights and confidentiality, psychosocial needs, "cultural competence," and oral hygiene (Pennsylvania Dept. of Health, 2007). As revealed by a recent qualitative analysis of curriculum materials used in Pennsylvania organizations, the method and mode of delivery also varies considerably throughout the state (Mabry & Kemeny, in press).

Thus, workers in different programs and settings receive different amounts and types of training. However, they serve individuals in many of the same populations (individuals who are older and have a developmental disability). Empirically documenting relevant relationships between training practices and organizational level variables, such as structure and culture, might permit policymakers and governing

agencies to better address the needs of different types of provider organizations. Rather than continuing a one-size-fits-all strategy for training initiatives, identifying key needs of service provider organization in different care networks (e.g. aging versus developmental disabilities) might reveal common needs and opportunities for shared approaches to DCW training. On the state level in Pennsylvania, efforts have focused on “building bridges” between the aging and developmental disability care provider networks. An empirical analysis of training practices among providers in both networks may shed light on future ventures for this partnership.

Understanding how organizational structural and cultural characteristics may shape DCW training practices, needs, and challenges would benefit leaders of service provider organizations (SPO) as well. This research will help place training in the context of structural variables, such as workload or services offered, so that administrators can make better decisions about content, methods, or delivery of training based upon context. In order to better inform organizational policies or supervisor training, leaders of SPOs may benefit from a better comprehension of the relationship between cultural variables such as the DCWs role in organizational decision-making to inform organizational policies or supervisor training. In tough economic times, making wise decisions about the use of limited organizational resources becomes even more important. The literature does not offer guidance to organizations about how DCW training practices may vary with structural and cultural components. Being informed about these relationships may influence resource allocation on an organizational level for practices, such as on-the-job training for DCWs, supervisor training, or culture change initiatives, that support best-practices in training.

Contexts of the Study

Physical Contexts

On the organizational level, the context for this study concerns aging and developmental disability service provider organizations that support aging individuals and/or individuals aging with a disability in Pennsylvania. At the current time, most settings serve either the frail older population or individuals aging with a disability. For frail older individuals without a lifelong disability, the primary settings are: 1) adult day care; 2) assisted living; 3) home care; and 4) nursing homes. For individuals aging with a developmental disability, the primary contexts include: 1) day training programs; 2) intermediate care facilities; 3) personal care homes; 4) residential care (group homes); and 5) sheltered workshop/vocational rehabilitation. In assisted living, adult day care, personal care homes, and nursing homes, anecdotal reports of crossover exist between the two populations of aging individuals, but no known documentation exists to describe the phenomena empirically.

Theoretical Contexts

The relationship of organizational components, structural and cultural variables, and DCW training practices involve different levels of social influence. One way of conceptually organizing the many levels of influences affecting DCWs in their work is to apply the “social structure and personality” (SSP) framework (House, 1981). This perspective accounts for the influence of social structure and culture, as components of social systems, as well as people’s proximate, everyday experiences, and the psychological processes through which they influence individuals (McLeod and Lively, 2003). Elaborated in more detail in Chapter 2, structural level factors derived from the

SSP framework involve the service provider organization's material resources that shape DCWs' work conditions and interpersonal relations. Cultural influences include patterns of beliefs or values, communicated through socialization in the organization (Felce, Lowe, & Jones, 2002; McLeod & Lively, 2003), and reflected in administrators' perceptions of the value of DCWs. As proximal level influences, DCW training practices and processes become a social experience through which the organizational structure and culture influence DCW outcomes. The purpose of this study is to examine the relationships between organizational structure, culture, and DCW training practices in aging and developmental disability service provider organizations.

The SSP paradigm encompasses macro-, meso-, and micro-level processes that impinge on individuals. Moreover, the framework conceptually accommodates specific theories and models. Consequently, it will serve as the organizing device for conceptually linking the various levels of social influence on DCW training in Chapter 2, as well as for organizing the theoretical explanations for those linkages that will come from organizational culture theory, medicalization, conflict theory, interactionism, and adult learning theory. The exploration of each specific theory addresses critical connections in the relationships between organizational structure, culture, and DCW training practices.

Definition of Terms

Organizational Structural Components

For the purpose of this study, structural variables pertaining to service provider organizations include the current material resources of work conditions such as: 1) evaluation procedures; 2) organization type; 3) size (number of staff); 4) funding sources;

and 5) intensity of care provided. An adequate amount of research explores the relationship of structural variables with job satisfaction and other individual level variables. However, little research exists on the relationship between structural variables and training practices as a proximal variable. Training content, method, and/or delivery may vary by structural variable such as setting, organizational size, or funding sources.

Organizational Cultural Components

The SSP framework's distinction between structure and culture provides opportunity for better understanding of the variations in training practices. Cultural influences include beliefs and values that shape patterns of behavior. For the purpose of this study, organizational culture concerns: 1) DCWs input into client/resident care decision-making; 2) DCW's role in organizational decision-making; and 3) DCWs integration in the organization. According to SSP, cultural components influence the psychosocial environment and interactions between individuals and groups. In turn, these interactions affect outcomes, such as behaviors, attitudes, and feelings (McLeod & Lively, 2003). Research explores the relationship of cultural variables to job satisfaction or other individual level variables. However, a paucity of research exists on the relationship of cultural variables and training practices as a proximal variable. Training content, method, and/or delivery may vary by cultural variables such as the DCW's role in organizational decision-making and the administration's perception of DCW integration.

Training Practices (Dependent Variable)

In the SSP framework, training practices fall into the category of proximal conditions, contexts in which macro-conditions derive tangible and symbolic reality for individuals through social experiences (McLeod & Lively, 2003). Training practices

define the particular social experience by content, method, and delivery of the staff development intervention. Current training practices at aging and developmental disability service provider organizations are comprised of specific dimensions that correspond to evidenced-based best-practices in training: 1) content; 2) frequency; 3) duration; and 4) methods.

Research Paradigm

Mertens (2007) suggests that research paradigms determine theory use, goals of research, and frame of questions. Rather than arguing for relationships that hold across all situations, the purpose of this study is to describe patterns and relationships with their application to public policy or organizational policy regarding DCWs who support aging individuals in various provider organizations. This study fits a pragmatic paradigm that uses both qualitative and quantitative methods in a complementary fashion. Quantitative analysis will identify relationships between training practices and structural and cultural characteristics of the service provider organization in which they occur. Qualitative analysis will provide insight on what service provider organization administrators perceive as needs in training DCWs and the challenges organizations face in providing DCW training.

Conclusion

The widening gap between the demand for DCWs and the supply of DCWs suggests an imperative to better understand the relationship of structural, cultural, and training practice variables in the context of aging and disability services provider organizations. Existing research reveals relationships between structural, cultural, and training practice components and individual-level outcomes for DCWs. However,

literature does not address the relationship between structural and cultural variables and organizational training practices. By using the SSP framework, in this study, I searched for relationships between organizational structures, such as material resources, organizational culture, such as value given DCWs, and proximal conditions within the organization, such DCW training. The goal of the proposed study is to achieve an empirical understanding of these linkages.

CHAPTER II

REVIEW OF THE LITERATURE

Background and Rationale for Research

Introduction

Using the social structure and personality framework as an overarching device, I support the extenuating need for research on the “care gap” by exploring the demographics of : 1)the aging population, 2) family caregivers, 3) supply, and 4) turnover of Direct Care Workers (DCW). In order to establish a basis for statistical variable development in Chapter 3, the remainder of the literature review concerns conceptual variable development. Second, I summarize the current empirical knowledge concerning best-practices in training, structural, and cultural variables. Third, I also explore the theoretical literature providing support for an inquiry into the inter-relationships of best-practices, structure, and culture. The literature review ultimately leads to hypotheses development from the research questions.

Social Structure and Personality Framework

Based on a review of the theoretical literature on processes in organizations, the social structure and personality (SSP) framework (McLeod & Lively, 2003) serves as a device for conceptually organizing the various social factors and processes relevant to the major research questions for this study. As seen in Figure 1, social structure and personality framework considers the components of structure and culture, proximal variables, such as training practices, and individual level outcomes.

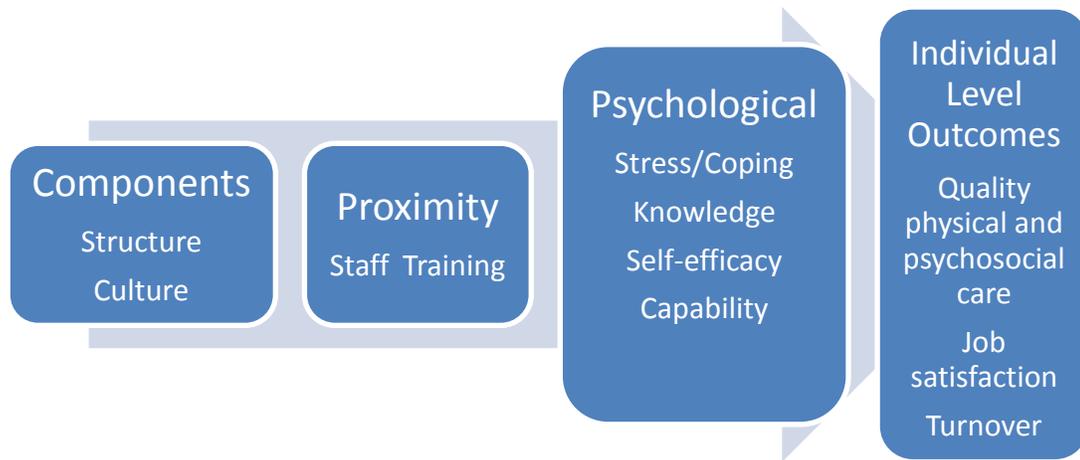


Figure 1 Conceptual framework for social structure and personality shows the levels from macro components to individual level outcomes (House, 1981).

In this study, training practices, the dependent variable, serves as a social experience through which organizational structure and culture impact individual-level outcomes. Using the SSP, I explore each level of influence on the micro-, meso-, and macro-levels. First, I review the demographic trends, which contribute to individual level concerns such as job satisfaction and turnover. Second, I summarize current research on training practices, components (structure and culture), and individual level outcomes. In the aging literature, theorists have expounded the need to investigate the meso-level phenomenon (George, 2006; Ryff, Marshall, & Clark, 1999). However, the literature does not address the relationship between the macro-structural and cultural components and meso-level proximity phenomenon, such as training practices. The avenue of mid-level research provides an opportunity to understand the actual linking mechanisms, such as role allocation and socialization, in the organizations that mediate the effects of the macro level on the individual (McLeod & Lively, 2003).

Demographic Trends Support Relevancy of Meso-Level Research

A review of the literature concerning direct care worker (DCW) demographics and the resulting organizational consequences provides impetus for an investigation of the relationship between best-practices in Direct Care Worker (DCW) training and structural/ cultural variables in service provider organizations (SPO) that offer care for individuals aging with a developmental disability. In addition to highlighting the practical relevancy of this research, a comprehension of the root causes of the “care gap,” the widening difference between the supply of DCWs and the positions available, sheds light on the unique situations faced by service provider organizations. Moreover, the demographic trends provide background for a more thorough knowledge of the changing needs for DCW training and structural/cultural variables in these service provider organizations (SPO).

In order to set the stage for an understanding of the root causes of the “care gap,” I describe the three antecedents to the increased demand of qualified DCWs and the decline in supply of DCWs. First, the aging of the population, in general, contributes to this increased demand (Haywood & Zhang, 2001). Second, individuals who are aging with a developmental disability, in particular, are living longer and have higher care needs (Davidson, Heller, Janicki, & Hyer, 2004). Third, the decline in available familial informal caregiving situations contributes to the demand (Settersten, 2005). Fourth, both the lack of available workers for physically and emotionally demanding work and the lack of organizational commitment in current workers contribute to the decline in supply.

Demographics of the aging population in general. Due to a decline in recent fertility, an increase in average life span since 1950, and an elevation in fertility in the 20

years after World War II, the median age of both the United States and the world population is increasing (The Centers for Disease Control (CDC), 2003). In the United States, projections suggest the proportion of the population over age 65 will increase from 12.4% in 2000 to 19.6% in 2030. Moreover, the CDC (2003) projects the numbers of older old individuals, those over age 80, to increase from 9.3 million in 2000 to 19.5 million in 2030. Accompanying the increase in longevity, epidemiologic trends suggest a shift from the leading cause of death from acute illness and infectious disease to chronic and degenerative diseases (CDC, 2003; Hayward & Zhang, 2001). In 2003, 80% of people over 65 had at least one chronic condition while 50% had two (CDC, 2003). In the future, the demand for long-term care in the aging continuum will depend heavily on the old-age disability rates (Johnson, Toohey, & Wiener, 2007). Using the most conservative calculations, the number of frail older people with new disabilities will grow by 50% by 2040 (Johnson, Toohey, & Wiener, 2007). Therefore, the demand for paid care services and DCWs will grow as aging individuals need support.

Demographics of individuals aging with developmental disability. In the last 30 years, the trend toward deinstitutionalization and improved medical care has contributed to the longevity of individuals aging with a developmental disability (Doka & Lavin, 2003). Currently, more than half a million adults with DD are 60 and older (Doka & Lavin, 2003; Heller, 2004). By 2030, that number is projected to triple (Heller, 2004). Moreover, in this population, the likelihood for additional co-morbidities and functional limitations often accelerate the aging process (Krahn, Putnam, Drum, & Powers, 2006; McCarron, Gill, McCallion, & Begley, 2005; Mosqueda, 2004). Studies have also pointed to the increased incidence of dementia and behavioral concerns in those aging

with intellectual DD (Davidson, Janicki, et al., 2003). For example, by age 50, a majority of people with Down syndrome already have the neurological plaques and tangles associated with Alzheimer's disease (McCarron & McCallion, 2005). Even individuals aging with an intellectual disability who do not have Down syndrome, are two to three times more likely to develop dementia (Strydom, Hassiotis, King & Livingston, 2009). Davidson, Heller, Janicki, & Hyer (2004) suggest the need for research and effective training models to support this emerging and complex population. The trend of longevity of those aging with and without a disability coupled with more complex needs for both physical and psychosocial care point to the pressing demand for a large number of well-trained DCWs.

Demographics of family caregivers. The majority of older people primarily live alone or with a spouse (Haber, 2006). At the same time, secondary to rising divorce rates, mobility, declining family size, and workforce participation, women in the United States have less availability to provide care (Johnson, Toohey, & Wiener, 2007). The projected growth in the ratio of older to younger people will create a deficit of adult family or friends to provide informal care to older individuals (Centers for Disease Control (CDC), 2003).

For families who support individuals with developmental disabilities, a crisis precipitated by a lack of family support can occur earlier in the life span. Aging parents need support for their adult child with a disability at an earlier age (Heller, 2004; Krause & Adkins, 2004). Currently, 60% of individuals with developmental disability live with family, but 25% of these caregivers are over 60 themselves (Heller, 2004). As family caregivers age, physical requirements of care, psychological demands of watching the

person's decline, and the need for future planning contribute to stress (McColl, 2004; Post, 2002). The need for services at the state and local level accentuates these trends. For example, in Pennsylvania, approximately 20,000 people with developmental disabilities wait on a list for residential placement, and 14,000 of those have critical or emergency need for placement (Arc of PA, 2009; Pennsylvania Waiting List Campaign, 2009). Once placed, in the absence of family, physical care alone does not meet the complex needs of each individual. The requirement of quality psychosocial support grows more intense (Henderson & Vesperi, 1995). The current demographic trend points to a need for an increased number of well-trained direct care workers, a "substitute family member" (Institute on Medicine, 2008) who competently supports individuals who are aging.

Diminishing supply of direct care workers. As the demand for DCWs grows to meet the increasing support needs of the aging of the population, two factors contribute to the diminishing supply of DCWs. First, related to decreases in fertility, the group of women aged 25 to 54 years, who most often work as DCWs, is on the decline (Settersten, 2006). In 2004, the U.S. Department of Health and Human Services (DHHS) projected a need for an additional 1.2 million DCWs by 2010 to cover new demands for care from the aging of the population and to compensate for the number of DCWs who leave the occupation. However, the female population of Americans aged 25 to 54, the prime pool for DCWs, is expected to decrease from 1.74 for each person over age 65 to 0.92 by 2030 (DHHS, 2004). Figure 2 depicts the gap in availability. According to projections, the demand for DCWs will grow by 35 percent from 2004 to 2014, but the labor pool, especially women aged 25-54, will increase by less than two percent (Dawson, 2007; DHHS, 2004; Polisher Research Institute, 2001).

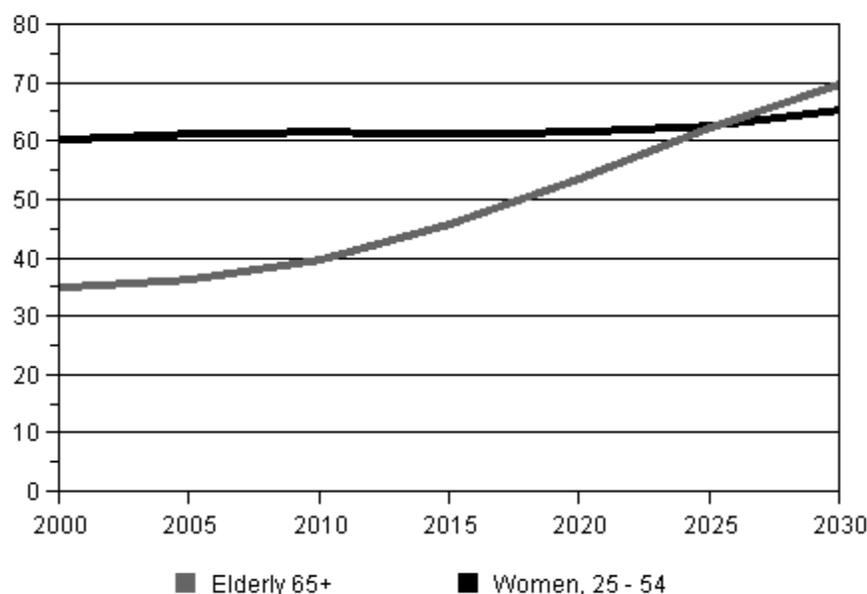


Figure 2 The projection for the number of individuals over 65 to grow beyond women, age 25 to 54. (USDHHS, 2004) Adapted from U.S. Census Bureau, National Population Projections, Summary Files, “Total Population by Age, Sex, Race, and Hispanic Origin.”

Reducing turnover among direct care workers. In addition to the decrease in numbers of people who will accept a physically-demanding job, high rates of annual turnover, ranging from 70 to 100% in nursing homes and 40 to 60% in home care, contribute to the lack of supply of qualified DCWs (Institute for Future of Aging Services (IFAS), 2007). Structural issues within service provider organizations, such as low wages and heavy workload levels (Wiener, Squillace, Anderson, & Khatustsky, 2009), and organizational cultures that typically de-value DCWs’ input in decision-making, contribute to vacancies and turnover (Dawson, 2007; Kane, Lum, Cutler, Degenholtz, & Tu, 2007; DHHS, 2004). Even with rising unemployment rates, other jobs may seem like better alternatives to a stressful, poorly paying jobs (Bowers, Esmond, & Jacobson, 2003). The demographic and labor trends pose a major societal problem. In short, a public health care gap exists in which the supply of DCWs does not meet the demand for care.

The “care gap” as a research opportunity. This “care gap” suggests a need for research studies that explain service provider organizational processes that influence the direct care workforce. In both the developmental disability and frail older adult contexts, researchers find an association between structural and cultural components and DCWs intention to leave their job. For example, many publications exist on the micro-level relationship between the stress and coping frameworks and DCW’s intent to turnover. Other micro-level research establishes the relationship between training practices with quality care outcomes. However, in the specific context of care provision for individuals aging with a developmental disability, a paucity of research exists on an organizational level with the relationship of structural and cultural variables and best-practices in training.

Best-Practices in Training Direct Care Workers

In order to summarize the relationships between training, structural and cultural variables, I review the literature on best-practices in training DCWs. First, I explain the method for determining a best-practice in training. Second, I consider the research on training practices as predictors of individual-level staff outcomes. Third, I explore the evidence that best-practices have widespread acceptance and use. Finally, I discuss the context of training practices in the literature.

Determining Best-Practices in Training

In order to define what constitutes best-practices, I conducted an extensive literature review in the adult learning theory that informs the process of determining “best practice” training. In this process, I defined “best-practices” as a staff development activity that produces positive outcomes in one situation that can be used in another to

improve effectiveness or efficiency (Keehley, Medlin, MacBride, & Longmire, 1997). Criteria usually include a recognized positive outcome and success over time. Located in Appendix B, a “best-practices in DCW training matrix” captures the best practice evidence-based intervention for each training component. Even within the peer-reviewed literature, when judging by criteria, variation exists in quality of best-practices. Therefore, I evaluate the best practice on the research design and applicability to the organizational level. Knowledge of the research design assists the reader to interpret the level of evidence in the findings and conclusions (Cook & Campbell, 1979). I catalogued these studies by assigning them an evidence “grade.” In order to establish this grading system, I combined several methods that did not totally eliminate descriptive or in-process grant-sponsored research (Buettner & Fitzsimmons, 2003; Dubois, Holloway, Valentine, & Cooper, 2002).

Grading system for evidence. The grading system I developed for assessing the evidence presented in the studies reviewed begins at the highest evidence level and ends at the lowest evidence level. First, *Level A* involves study designs that separate the staff development process from other factors. In other words, all participants have the same exposure to the same organizational conditions except some participants do not receive the staff development intervention. Second, *Level B* concerns studies that do not isolate the staff development process from other aspects of the organization. In other words, these studies compare organizations with the staff development process to organizations without the process. In these studies, no regression analysis allows control of multiple variables, so any positive or negative outcomes may reflect a multitude of other factors in the organizational climate. Third, *Level C* describes studies that evaluate outcomes of

staff development programs without any comparison group or control, such as pre-experimental studies. Many reports from institutes on the internet and even some peer-reviewed journals, consist of evaluations of staff development initiatives without any form of comparison. Less rigorous studies completed with direct care workers in long-term care environments may still shed light on situation-specific characteristics of best practice. However, while these reports suggest positive outcomes for staff and residents/clients, I use caution in drawing evidence-based conclusions or making generalizations. Within the first three levels, diversity in quality can be further distinguished by other study design features, such as sample size, representativeness, and validity and reliability of measures. *Level D* categorizes descriptive studies that merely report aspects of a staff development programs. In some cases, although no research evidence exists about effectiveness, successful initiatives recognized by the federal government and national foundations also bear consideration. For instance, The Robert Wood Johnson Foundation launched a four year 15.5 million demonstration project entitled “Better Jobs Better Care.” Grantees post their best-practices on a website available to the public. However, no clear evaluation information exists for some practices.

Fourth, using a totally different set of criteria to evaluate effectiveness, at *Level Q*, qualitative studies constitute a separate category all together. Critical components that suggest validity in qualitative studies include: 1) intensive involvement; 2) rich data with sufficient detail; 3) member checks; 4) responding to discrepant evidence or negative cases; and 5) triangulation (Maxwell, 2005).

Best-practice training content. Research describes the job duties of direct care workers (DCW) as complex and requiring specialized knowledge, skills, and attitudes (Hewitt & Larson, 2007; Maas, Specht, Buckwalter, Gittler, & Bechen, 2008). Based upon an extensive review of the DCW training literature, a long list of core content areas for DCW competency in care provision and work relations emerges that includes: 1) person-centered care (Boettcher, Kemeny, DeShon, & Stevens, 2004; Hollinger-Smith & Ortigara, 2004; Zimmerman et al., 2005); 2) communication (Burgio, Allen-Burge et al., 2001; Pietro, 2002); 3) values-training in choice making (Forbat, 2006); 4) gerontological knowledge, such as dementia and delirium (Braun et al., 2005; Mass et al., 2008; 5) health promotion (Davidson et al., 2004); 6) end of life care (Waldron, Hasson, Kernohan, Whittaker, & McClaughlin, 2008); 7) cultural competence (Parker, & Geron, 2007); 8) mental health needs (Tsiantis et al., 2004; 9) resident or client behaviors (Burgio, Stevens, Burgio, Roth, Paul, & Gerstle, 2002; McKenzie, Paxton, Patrick, Matheson, & Murray, 2000; McKenzie, Sharp, Paxton, & Murray, 2002 ;White, Holland, Marsland & Oakes 2003); 10) team building and leadership (Hegeman, Hoskinson, Munro, Maiden, & Pillimer, 2007; Hollinger-Smith & Ortigara,2004; Morgan & Konrad, 2008; Yeatts & Seward, 2000); and 11) conflict resolution/stress management (Coogle, Parham, Jablonski, & Rachel, 2007; Haraway, & Haraway, 2005; Ostwald, Hepburn, Caron, Burns, & Mantell, 1999).

Best-practice training content. A reasonable amount of research exists describing the outcomes of individual training programs that improve DCWs' knowledge, attitudes, and quality care giving behaviors in both the contexts of developmental disability and aging service provider organizations. Listed in Table 1,

more specifics about DCW training interventions targeting various areas of content include the following “best-practices” to improve knowledge, attitude, and/or DCW behaviors in various content areas. Table 1 also shows the categorization based upon research design and the context of each study.

Table 1
Best-Practices in Training by Content Area

Content Area	Authors	Ranking	Context
Behavior Supporting individuals with challenging behaviors	1. Burgio, Stevens, Burgio, Roth, Paul, & Gerstle (2002). 2. McKenzie, Paxton, Patrick, Matheson, & Murray (2000); McKenzie, Sharp, Paxton, & Murray (2002).	Category A Category A	Aging Network DD/MR Network
Communication	1. Burgio, Allen-Burge, Roth, Bourgeois, Dijkstra, Gerstle, Jackson, and Bankester (2001).	Category B	Aging Network
Dementia	1. Noelker & Ejaz (2001)	Category Q	Aging Network
Mental Health	1. Tsiantis, Diareme, Dimitrakaki, Kolaitis, Christogiorgos, Weber, Salvador-Carulla, Hillary, & Costello (2004).	Category C	MR/DD Network
Peer Mentoring	1. Hegeman, Hoskinson, Munro, Maiden, and Pillimer (2007).	Category B	Aging Network
Person-Centered Care	1. Boettcher, Kemeny, DeShon, & Stevens, (2004).	Category C	Aging Network
Problem-solving	1. Coogle, Parham, Jablonski, & Rachel (2007).	Category C	Aging Network
Touch	1. Dobson, Carey, Conyers, Upadhyaya, & Raghavan (2004).	Category Q	MR/DD Network

Best-practice training methods. More attention in the best practice literature goes to content. However, a smaller body of literature delves into the best methods for training DCWs. Categorized and labeled in Table 2, research identifies interactive methods of training, such as role play, and interactive discussions as effective (Allen-Burge, Stevens, & Burgio, 1999; Burgio, Stevens, et al., 2002; Fulmer, Gibbs, & Keyes

1998; Hegeman et al., 2007; Kemeny et al., 2006). Menne et al. (2007) use data collected in interviews to document DCWs' preference for interactive training. Other researchers provide evidence of the importance of on-the-job training, motivational systems, and support after classroom sessions (Burgio et al., 2002; Gieselman, Stark, Farruggia, 2000; Morgan et al., 2007; Morgan & Konrad, 2008).

Table 2
Best-Practices in Training by Method

Method	Authors	Ranking	Context
Role playing with immediate feedback, On-the-job training Motivational systems	Burgio, Stevens, Burgio, Roth, Paul, & Gerstle, (2002).	Category A	Aging Network
Role plays On the job training Interactive discussion Homework practice	Kemeny, Boettcher, DeShon, & Stevens, (2006).	Category C	Aging Network
Interactive Techniques, Boosters	Hegeman, Hoskinson, Munro, Maiden, and Pillimer (2007).	Category B	Aging Network
Situated Learning Learn through practice, correction by masters, reflection, and self-instruction	Gieselman, Stark, & Farruggia (2000).	Category Q	Aging Network
Staff motivational system	Burgio, Allen-Burge, Roth, Bourgeois, Dijkstra, Gerstle, Jackson, & Bankester (2001). Burgio, Stevens, Burgio, Roth, Paul, & Gerstle (2002).	Category B A	Aging Network
Training Relevance More hands-on training Adult learning principles	Noelker, & Ejaz (2001).	Category Q	Aging Network

Best-practice training frequency and duration. Scant research exists on the best-practices training frequency and duration. One study suggests that longitudinal training is most effective (Freeman et al., 2005). Moreover, Noelker and Ejaz (2001)

conducted in-depth interviews with DCWs and found that DCWs prefer shorter, more frequent sessions. Based on the current levels of staff shortages and turnover rates, it makes sense that shorter more frequent sessions make scheduling easier for administration.

No evidence of best-practices in use. Despite the research that supports the effectiveness of best-practices in staff development to impact DCW outcomes, little evidence exists for widespread use of best-practices in service provider organizations. Statewide efforts show promise. However, no widely disseminated evidence-based staff development practices exist. Even among the Better Jobs Better Care national program organizations, sponsored by The Robert Wood Johnson Foundation to improve direct care workplace issues, Stott et al. (2007) found limited use of DCW training, career advancement, and mentoring programs. DCWs themselves have identified a need for more training in approaches to need-driven behaviors, conflict in the organization, and dementia care (Menne et al., 2007; Noelker, & Ejaz, 2001). Despite the development of evidence-based best-practices and DCWs' recognition that improved knowledge is needed, in-service education is often not based on most current recommendations from research (Maas et al., 2008).

Aylward, Stolee, Keat, & Van Johncox (2003) reviewed 48 research studies from 1985 to 2001 that evaluated DCW training programs in nursing homes. The literature review found “no evidence of ... sustained application of educational initiatives” (Aylward et al., p. 269). Recently, a study from the Center for Rural Pennsylvania (Mabry & Kemeny, in press) found that in Pennsylvania training practices utilized in various organizations serving persons with developmental disabilities and/or the elderly

do not include most aspects of best-practices in training content or methods. It is unknown whether current training practices in Pennsylvania vary based on organizational structural or cultural variables or how representative they may be of practices in other states.

Context of research on training practices. In the literature that exists, researchers typically explore training practices in relationship to DCWs' perceptions or behavioral outcomes in either aging service provider organizations **or** developmental disability service provider organizations, even though these organizations may serve populations that overlap in their care needs. With the exception of one study from the Center for Rural Pennsylvania (Mabry & Kemeny, in press), no known empirical research includes both types of provider groups. Furthermore, no known research examines the relationship between variations in structural and cultural characteristics of service provider organizations in aging and developmental disability service provider organizations and the DCW training practices that occur within them.

Summary. Despite the lack of information on the relationship between structural and cultural components of service provider organizations and DCW training practices, current research adequately addresses the relationship of training practices to outcomes for staff, such as knowledge, skills, or job satisfaction. Moreover, the literature abundantly explains the relationship of structure and culture aspects in relations to DCW outcomes such as retention or job satisfaction. Therefore, I will begin with a summary of what is known about training practices, structural, and cultural aspects and DCW individual level outcomes. First, I examine training and job satisfaction outcomes.

Second, I describe training practices and DCW outcome research. Third, I examine the empirical findings on organizational structure /culture and DCW outcomes.

Best-Practices in Training and Individual-Level Outcomes

DCW individual-level issues. Little can be done to change the demographic trends of the aging of the baby boomers and increase the amount of available younger adult women who usually contribute to the DCW workforce. However, research shows that certain interventions improve retention of DCWs who are already employed (Anderson, Corazzini, & McDaniel, 2004; Strouse, Carroll-Hernandez, Sherman, Sheldon, 2003). Burnout, job dissatisfaction, and job strain contribute to increased DCW turnover (Ejaz, Noelker, Menne, & Bagaka, 2008; Hatton, et al., 2001; McCarron & McCallion, 2005; Parsons et al., 2003; Skirrow & Hatton, 2007). Based upon the complex and changing needs of individuals who are aging with a disability (Cohen-Mansfield, Marx, Regier, Dakheel-Ali, 2009; Davidson, Heller, Janicki & Hyer, 2004), it is logical to assume that the stress and strain for DCWs and the resulting potential for job dissatisfaction may multiply. Ejaz, Noelker, Menne, & Bagaka (2008) report some of the most powerful job-related predictors for job dissatisfaction concern a lack of control over scheduling, wages, negative social interactions, and lack of appropriate training.

Training, job satisfaction, retention and effectiveness. Adult training is the independent variable in many organizational studies on individual-level outcomes, such as job satisfaction, retention, and effectiveness. Using the stress and coping framework, researchers found, at the individual level, a positive relationship between training interventions and job satisfaction or retention among DCWs who support older people both with and without developmental disabilities (Ejaz, et al., 2008; Hollinger-Smith, &

Ortigara, 2004; Lin, et al., 2009; Zimmerman, et al., 2005). One study suggests that additional training had a stronger effect on retention than recruitment (Noel, Pearce, & Metcalf, 2000). Both qualitative and quantitative nursing home studies suggest DCWs' perception of quality training opportunities correlates with effectiveness in a person-centered approach toward the residents they serve (Castle, Engberg, Anderson, & Men, 2007; Leon, Maraienen, & Marcotte, 2001; Zimmerman et al., 2005).

Training practices literature. Literature in the field of adult learning offers a background for considering best-practices in DCW training. Many studies define training in a unidimensional manner rather than exploring a range of factors in the training process (Stott et al., 2007). Other researchers break training practices down into three broad categories: content, methods of training, and modes of delivery (Braun, Cheang, & Shigeta, 2005; Burgio, Stevens, et al., 2001; Kemeny, Boettcher, DeShon, & Stevens, 2006; Pietro, 2002). A differentiation between aspects of best-training practices in this study will provide an opportunity to better evaluate relationships between training and other variables in a work environment.

Organizational Structure, Culture, and Individual Staff Outcomes

Research does establish the importance of structural variables, including workload and cultural variables such as supervisor support to influence intent to turnover. In order to better isolate the impact on DCWs, two studies used a quasi-experimental design with a non-equivalent comparison group that did not receive the work situation improvement (Innstrand, Espnes, & Mykletun, 2004; Mansell, Beadle-Brown, Whelton, Beckett, Hutchinson, 2008). However, related to design issues, no known studies establish a causal relationship between structural variables and individual-level outcomes. The

setting and design of research investigating the relationship between macro-components and DCW outcomes varies considerably. Therefore, no pattern of replication or repeated-use of the same variables exists.

Structural variables. A variety of studies concerning structural variables investigate the relationship of the structural variable and individual-level staff outcomes. I explore the research on evaluation, staff ratio levels, facility-type, facility size, sector-type, and payer-mix. These studies shed light upon the relationships between macro-components and individual-level variables already established in the literature.

Evaluation. Involving the direct care workers in an evaluation of their needs may be the best way to promote positive individual level outcomes in the organization. One finding in the literature concerns the differences in needs of DCWs who are new and those who are experienced. The orientation materials, required for compliance with regulations, such as fire safety and infection control, are repetitive for experienced DCW but lack comprehensiveness for newer DCW (Hewitt & Larson, 2007; Anderson, Corazzini, & McDaniel, 2004).

Staff-to-client ratio levels. Research in a developmental disability service provider organization (Hatton, et al., 2001; Mansell, et al., 2008) and one study in aging service provider organizations (Schaeffer & Moos, 1996) found a relationship between staffing-to-client ratio levels and DCWs' work satisfaction and/or positive resident outcomes. Both staffing-to-client ratio and staff levels are directly related to work-load stressors (Hatton, et al., 2001; Schaeffer & Moos, 1996). A strength of the Hatton et al. (2001) study lies in utilizing a previously validated survey instrument.

Other structural variables. Like Hatton et al. (2001), other studies used multiple regression analysis in order to examine the relative influence of several structural factors related to job satisfaction and/or tenure such as: 1) facility type (Ejaz, et al., 2008); 2) geographical location, and facility size (Lin, et al., 2009); 3) nonprofit or for-profit status (Brown, 2002); 4) payer case mix (Weiner, et al., 2009). Although a previously validated survey instrument was not available for most of these studies, two of the studies improved the content validity by asking experts to review it. Despite the variation in quality, adequate research exists to establish a relationship between structural variables and DCW job satisfaction/work commitment.

Cultural variables. Researchers also examined cultural variables and DCW outcomes. The cultural variables examined include schedule flexibility, input into decision-making associated with job satisfaction. Moreover, other studies researched the relationship between DCW input into decision-making and care quality. Other cultural variables examined include supervisor support, peer support, and integration into the organization. Data collection methods for cultural variables varied as did the subjects' perspective.

Schedule flexibility. One study in a developmental disability network organization and one in a retail business found that frontline work schedule flexibility related to organizational commitment and satisfaction (Innstrand, et al., 2004; Ng, Butts, Vandenberg, DeJoy, & Wilson, 2006). A common problem between the two studies involved using multiple work environment change initiatives at once. Because neither study isolated the variable of schedule flexibility, it makes the strength of the relationship less clear.

Input into decision-making. Some of the same studies that explored structural variables also found cultural variables, such as opportunities for decision-making in the organization, associated with stress level, job satisfaction, and/or their organizational commitment (Hatton et al., 2001; Innstrand, et al., 2004; Parsons, et al., 2003). Other research shows involvement of the DCW in decision-making improves care quality of individuals who are aging or have a developmental disability (Felce, Jones, Lowe, & Perry, 2003; Gruss, McCann, Edelman, & Farran, 2004). Within a qualitative framework, Yeatts & Seward (2000) interviewed decision-making work teams and found that DCWs perceived self-management to improve self-esteem and job satisfaction. DCW perceived that decisions made by a self-managed team are more effective since decision-making involves the person who understands the work best.

DCW support and integration. In several cross-sectional multi-facility studies, supervisor support and /or peer support were found to be related to DCW's job satisfaction/morale or organizational commitment (Ejaz, et al., 2008; Grant, Pothoff, & Olson, 2001; Hatton, et al., 2001; Hegeman, Hoskinson, Munro, Maiden, & Pillimer, 2007; Parsons, et al., 2003; Rose, Jones, Fletcher, 1998; Schaefer & Moos, 1996). Moreover, supervisor or peer support is related to better outcomes for clients (Mansell, Beadle-Brown, Whelton, Beckett, Hutchinson, 2008; Morgan & Konrad, 2008). Many of these studies reported both organizational-level and individual-level outcomes.

Data collection methods. In the research on cultural variables, the methods for data collection varied. First, several researchers collected survey data from the DCWs for both structural and cultural variables (Lin, et al., 2009, Hatton et al., 2001). Ejaz et al. (2008) collected individual-level data from DCWs and organizational-level data from

administrators. Administration may have more accurate information with regard to the entire organization than an individual DCW about organizational-level outcomes. On the other hand, Zimmerman et al. (2005) conducted structured interviews with DCWs selected by the administrator. The concern with this method involves the administrator's choice of DCWs who may not well represent every other DCW in the entire organization. Despite some issues with internal and external validity, the quantity of studies reviewed on the topic indicate the need to study DCW involvement in decision-making and support from supervisor or peers as variables in an exploration of organizational culture.

Organizational Structural Variables, Cultural Variables, and Training

Little is known about the relationship between structural variables, cultural variables, and training. Only one known study evaluated the relationship between structural (setting), cultural (job design), and training practice variables at an organizational-level unit of analysis. In 142 organizations who volunteered for the Better Jobs Better Care national demonstration project, Stott, Brannon, Vasey, Dansky, and Kemper (2007) used a cross-sectional design to compare the use of job design and training by setting. They found assisted-living facilities had the highest number of job design practices for DCWs such as participation in care planning, communication about tasks, and feedback. Stott et al. (2007) report no significant differences by setting in professional development, defined as peer mentoring, opportunities to become a higher level DCW/licensed nurse, or training. By surveying administrators to gather organizational-level data, the researchers gained an organizational perspective on the interaction between type of facility and cultural variables.

The study limitations involve the sample, the definition of cultural variables, the lack of attention to various aspects of training, and the analysis. Suggesting non-representativeness, the sample included only volunteers who agreed to participate in a national demonstration project. Rather than inclusion of decision-making on multiple levels, cultural variables focused on only job design practices related to resident/client care. Moreover, the study did not break down “training” into training practice components such as content and method. Despite some attention to structural, cultural, and training practices in one study, very little can be inferred as to how DCW training practices vary with cultural and structural variables.

Theoretical Location

Organizational Training Practices

In the Social Structure and Personality (SSP) framework, training practices can be conceptualized as a proximal level variable as it is part of the experienced, everyday contexts in which structural and cultural conditions derive tangible and symbolic reality for individuals (DCWs, in this case) through such social experiences (McLeod & Lively, 2003). Training practices define a particular social experience by the content, method, and delivery of the DCW staff development intervention. First, adult learning theory sheds light on general concepts that may be used to distinguish best practice from worse practice in the social experience of training. Second, I use social cognitive theory to delineate training content issues. Third, the theoretical literature proves relevant to training methods and issue related to training transfer.

Adult learning theory. Training members of organizations serves as a form of organizational socialization (Cook & Yanow, 1993; Selznick, 1948; Schein, 1992). Berger and Luckmann (1967) suggest that within an organization, interactions among

individuals create common cognitive frameworks and understandings that support collective action. For example, in addition to the social interaction that occurs during the official training, the way in which a supervisor prepares DCWs for a new training opportunity or how peers perceive the new opportunity will influence how the typical organizational worker anticipates the training program. The tone and content of interactions before and after the training may determine the success of training transfer into practice (Kirkpatrick & Kirkpatrick, 2006). The theoretical conceptualization of adult learning creates the backdrop for better understanding of training practices in organizations that support individuals aging with a developmental disability.

DCWs are adult learners who may have impoverished educational experiences prior to attending a training session. An estimated 19% of DCWs who work in nursing homes have at least a year of schooling post high school (Squillace et al., 2009). In the past, due to socioeconomic status or other factors, DCWs probably experienced poor learning conditions. In opposition to a “one size fits all” approach, most adult learning theories, based on Lewin’s (1936) conceptualization of “life space,” lay out frameworks for contextualizing learning strategies in order to meet the needs of the learner. Knowles’s (1990) and Kidd’s (1973) models, with a focus on building upon experiences and work-relevancy, are especially appropriate to the training of DCWs. Rather than a classroom with an expert lecturing information, a participatory framework with relational and interactive goals, most appropriate to DCW content and learner needs, allows for adult input and response (Macheracher, 2004). Models of best-practices in adult training suggest: 1) embedded longitudinal training (Freeman et al., 2005); 2) building a collaborative multidisciplinary environment (Freeman et al., 2005; Hollinger-Smith &

Ortigara, 2004); 3) use of adult learning principles that provide opportunities for critical thinking and reflection (Larkin & Burton, 2008); 4) interactive rather than passive learning (Hollinger-Smith & Ortigara, 2004); and 5) organizational culture change that supports sustained long-term impact (Hollinger-Smith & Ortigara, 2004).

Training content. Social cognitive theory, a useful framework for best- practices in training, provides insight into the process of defining training content. Bandura (2001) explains the process of “collective human agency” when he argues that teams function best with an opportunity to be dependent on each other and feel good about group accomplishments. In an ideal situation, a needs assessment process, in which the participants share their perspectives about training priorities, guides the planning of training goals (Kirkpatrick & Kirkpatrick, 2006). Moreover, training content priorities match specific job-related competencies. Regulation compliance may have a higher priority in administration’s choice of training content (Anderson, Corrazini, & McDaniel, 2004). In the typical organization, as evidenced by content analysis of actual training materials in Pennsylvania, training content is dictated primarily by regulatory compliance rather than needs assessment or desired competencies (Mabry and Kemeny, in press).

Goldstein and Ford (2002) suggest three broad categories for the content of training programs: 1) cognitive; 2) interpersonal; and 3) psychomotor. Bandura (2001) views the sensory, motor, and cognitive abilities as tools staff members use to accomplish goals or tasks that support meaningful activity. More than merely psychomotor personal care skills, DCWs supporting individuals who are aging with a disability need interpersonal and communication skills to support the individual. As the person who spends the most time with the individual, the DCW impacts the individual’s self-identity

and therefore the DCW requires excellent communication skills (Brooker, 2007; Kitwood, 1997; Pietro, 2002; Sabat, 2002; Vittoria, 1998).

Training methods. A match between training methods and content promise the best outcomes (Arthur, Bennett, Eden, & Bell, 2003). For example, training in communication skills requires a method that allows interaction. When asked, DCWs prefer interactive and hands-on learning to didactic methods. Utilizing Bandura's (2001) model of interactive agency, the development efforts should focus on cultivating personal resources rather than telling the person what to do. In other words, interactive training allows DCWs to interpret prior experiences in light of new material, think critically, and problem solve. Interactive and on-the-job training allows the person to develop in their ability to reflect on their actions with the clients.

Knowles's (1990) concept of "androgogy," based upon the characteristics of adult learners, suggests self-direction as an essential to adult learning principles. Knowles's (1990) concept assumes that internally motivated adult learners grow toward self-direction during maturation. Recently, many service provider organizations have adopted "self-directed" learning packets designed for DCWs in both electronic and paper forms. One can argue that self-directed packets lines up with the principles of androgogy, However, merely providing DCWs with the packets may not be effective because the packets require self-initiation, concentration, and in some cases computer-access (Mackeracher, 2006). Providing self-directed curriculum packages based on provider-desired competencies does not assure DCW learning. Critical theorists, writing about members of marginalized groups, with whom DCWs may identify, have recently revised the positive focus on self-directed learning: they explain the basis of learning as more

relational than autonomous (Brookfield, 2006; Mackeracher, 2006). Social cognitive theory suggests that DCWs are agents of their learning experiences rather than just receivers. To be self-directed, the person requires self-management, self-monitoring, and motivation (Garrison, 1992).

Training transfer. “Training transfer” demonstrates the extent to which the learned knowledge, skills, and behaviors exist on the job after training. Kirkpatrick & Kirkpatrick (2006) describe training transfer as the behavior when the trainee leaves the classroom and returns to their job. Behavior change may not be immediate or sustained. Most of the curriculums that show sustained outcomes, in terms of DCWs transferring behaviors to work, involve some combination of behavioral management, on-the-job coaching, or other support system for DCWs outside of the classroom to promote application of learning (Burgio, Stevens et al., 2002; Morgan & Konrad, 2008).

Table 3

Training Practice Variables

Variable	Framework	Theorist(s) and Researcher
Best-Practices in Training-generic issues	Organizational Culture Theory Adult Learning Theory	Cook & Yanow (1993) Schein (1992) Berger&Luckman (1967) Knowles (1990) Kidd (1973)
Content	Social Cognitive Theory Communication is essential part of content	Bandura (2001) Kitwood (1997) Brooker (2007) Pietro (2002)
Method	Androgogy Self-direction	Knowles (1990) Macheracher (2006)
Training Transfer	Learning in organizations	Kirkpatrick & Kirkpatrick (2006)

Summary of Training Practice Variables

The concepts of Adult Learning Theory and Organizational Theory provide a backdrop for explaining the phenomenon of training practices. I supplement the use of

Adult Learning Theory, focusing on the unique needs of learners, with social cognitive theory. Moreover, I describe the basis of best-practice determinations for content, method, and training transfer. The basics of best-practice training rest upon social interaction. Learning requires a means of interacting with the knowledge or skills to be gained. Most DCWs prefer interactive training, but theory also points to interactive training as the best practice. The social mechanisms provide a means for reflecting on shared experiences and applying them. The social interactions, both before and after the actual session, determine whether training is ever used or transferred into work practices. Unless knowledge and skills are used in social interactions with clients, quality of care cannot improve nor does DCW experience the benefits of feeling competent.

Organizational Structure

Theoretical Background

Built upon a merger of the social theories concerned with macro-, meso-, and micro-level influences, the social structure and personality (SSP) perspective is a sociological social psychological framework that conceptualizes social structures as profoundly shaping people's experiences which, consequently, influence individual responses (McLeod & Lively, 2003). The SSP conceptual framework traces back to Marx, Weber, and Durkheim, who described relationships between society and individuals (House, 1981). Merton (1957) refined Weber's work on organizations to view the possibility of variability in stability of social structures and multiple consequences. By introducing interaction variables into his analysis of social structure, he created precedence for examining reciprocal relationships between organizational structures and human behavior. Merton (1957) described the pressure that individuals feel to conform to

social structures and cultures within bureaucracies through training. Selznick (1948), sharing a similar perspective, considered the work organization both an adaptive social and economic structure.

Characteristics of organizational structures. Organizational structures entail the current material resources of work conditions and structural characteristics, including: geographical location, evaluation practices, organization type, funding sources, organization size, and intensity of care or workload level. According to SSP, the structure of a social system influences the psychosocial environment and interactions between individuals and groups. In turn, these interactions affect behaviors, attitudes, and feelings (McLeod & Lively, 2003). I present a detailed schematic of these relationships in Appendix A, Figure 3 based upon House's (1981) original SSP framework.

A distinction between structure and culture, rooted in both Marx's and Weber's division of material and ideological concerns, assists in delineating various independent variables that may contribute to variations in training practices. Ejaz et al. (2008) identify structural variables of importance to DCW outcomes for organizations that provide services to frail older people: 1) type of long term care setting; 2) profit status (sector); 3) proportion of client services that are reimbursed through Medicaid; 4) percent of minority clients served; and 5) proportion of client services that are reimbursed through private pay. Petry, Maes, and Vlaskamp (2007) surveyed DCWs and families (as proxies for clients with severe developmental disabilities) and found that 85% of the respondents mentioned that the physical environment and the size of the facility are important to a positive work and living environment for individuals with developmental disabilities. The

families preferred that the facility provide a high staff to client ratio, be small in size, and manifest a positive psychosocial atmosphere.

Geographic location. Training practices may vary by urban and rural location relative to training resources. Limited transportation and access to health care resources in rural areas is well-documented (Center for Rural Pennsylvania, 2009). In rural areas, personnel from group homes and nursing homes have further to travel for training sessions. Thus, delivery and method of training may vary based upon geography. Mabry & Kemeny (in press) found no significant differences in training practices in rural and urban settings in Pennsylvania.

Evaluation practices. Evaluation practices may take many forms. A quality evaluation process which includes the four levels of evaluation should have a cyclical process that allows for improvement of programs. Kirkpatrick and Kirkpatrick (2006) evaluate training by assessing the employee's reaction to training, knowledge gained, outcome measures (behaviors), and organizational outcomes. The more intense levels of evaluation produce information for the administration to use to improve training practices continuously.

Organization type. The type of services that an organization provides may impact the DCW training practices in an organization. Research findings support differences in job satisfaction ratings in nursing homes, assisted living, and home care (Ejaz et al., 2008; Zimmerman et al., 2005). When comparing aging service provider organizations for differences in DCW participation in client care planning meetings, researchers found assisted-living facilities to differ from nursing homes (Stott et al., 2007). Menne et al. (2007) demonstrated that home health aides preferred a different type of training than

DCWs who work in nursing homes. While research indicates that DCWs in different types of service provider organizations may experience differences in job satisfaction, involvement in decision-making, and training preferences, no extant research fully investigates the manner in which types of service provided relate to DCW training content, method, or delivery.

Funding sources (payer-mix). The predominant funding mechanisms for the cost of client care, such as the mix of Medicaid, Medicare, and private pay, may be more important to an organization's financial resources for training than the sector in which an organization operates (Brody, 1996). Related to funding streams, nursing homes have more federal accountability for workforce issues, such as staff levels and training, than community-based services. Nursing homes, both for-profit and nonprofit, receive 12 % of their funding directly through the federal Medicare program and approximately 50% indirectly through state medical assistance offices (American Association of Retired Persons(AARP), 2007). State reimbursement rates vary based on geographic location and the case-mix of residents in a facility. With the exception of two states, the private pay rate for nursing home care exceeds the Medicaid rate, precipitating inequitable admission policies (Grabowski, Angelelli, & Gruber, 2007). Assisted living facilities and home care, both for-profit and nonprofit, receive most of their funding through private payment from clients, with some exceptions. Medicare reimbursement for home care lasts only for a short duration. Otherwise, home care providers receive payment privately or through medical assistance. Community-based services for people with developmental disabilities depend upon state appropriation of federal waivers. Apportioned by the states

to County Base Service Units, the quantity of waiver funds available determines how many consumers with disabilities receive services in a geographical area.

Training practices may vary based upon the payment case-mix. In both aging and developmental disability provider organizations, Medicaid recipients must qualify based upon level of functioning and financial need. The care needs of private pay residents may be lower. Therefore, a lower dependence on Medicaid funding in the payer-mix may coincide with the availability of more resources for extensive staff development.

Applying Quadagno and Reid's (1999) discussion of the interplay between the public and private institutions and market forces, the differences in structural variables may reflect financial resources and inherent inequities related to payment mechanisms. Disparities exist in access to medical care and technology for individuals with and without disabilities (Heller, 2004; Mosqueda, 2004; Thompson, 2004). According to Quadagno and Reid's theory, government welfare policies often reinforce inequalities at several different points in the life course resulting in an unequal situation in old age.

Financial resources may affect content, methods and delivery of training practices. Training content covered may be limited to only those content areas mandated by federal and state compliance regulations. Financial resources may impact whether an organization can afford to hire a training facilitator who is both knowledgeable in best-practices content and skilled in using interactive and other important adult learning methods. Less costly modes of training, such as videos and self-directed computer learning, do not require personnel costs. Finances also affect the manner of delivery in terms of frequency and duration. Payer-mix is an important structural variable. However,

little known research exists to understand the manner in which payer-mix differences in organizations may extend to variations in training practices.

Organization size. Research indicates the size of the setting as an important structural variable (Burton, & Obel, 1998; Felce et al., 2003). Size, in this case, is defined by the number of clients served and number of staff members rather than the physical size of the facility. With roots in Weber's conception of bureaucracy, the size of larger organizations may tend toward more hierarchical and centralized in decision-making. Burton and Obel (1998) explain the interaction of size and routine functions predict complexity of management functions. On the other hand, larger organizations may have more financial resources for staffing or training. One study that compares smaller organizations to large ones found a difference in resident and staff outcomes (Kane, Lum, Cutler, Degenholtz, & Tu, 2007). Felce et al. (2003) found that size of the organization did not impact quality of care outcomes. Very little is known about how training practices vary by size of the organization. Training content, method, or delivery may be influenced by the human and financial resources available for training.

Intensity of care. The population served may impact level of the complexity of the DCW work environment. Zimmerman et al. (2005) documents the relationship between attitude toward dementia care and worker satisfaction. Serving a higher proportion of individuals who are aging with a developmental disability or with dementia may require more intensive physical and emotional labor of DCWs than if the client population had fewer older persons with developmental disabilities. Moreover, the physical, cognitive, and emotional level of functioning of the majority of the clients served by a provider organization may influence the particular content of training

practices. Individuals who are aging with Down syndrome are more likely to develop an Alzheimer's type dementia than individuals with other forms of mental retardation (Davidson et al., 2004). Some organizations may experience more issues with clients' challenging behaviors or mental illness. Other populations may be more likely to have physical co-morbidities (Mosqueda, 2004). Adult learning theorists suggest the importance of a good fit between training content and method (Mackeracher, 2004). If the needed content varies by population served, the training method may also vary.

Workload level. Related to intensity of care, workload, or the organization's overall staff to client ratio, is a predictor of DCW job satisfaction as well as quality client outcomes (Maas et al., 2008). Conceptually, on an individual level, work overload contributes as a "primary stressor" in a stress and coping framework (McCarron & McCallion, 2005). Little is known about how workload level may influence methods and delivery of training in particular. If an organization has a high client to staff ratio, it becomes difficult for DCWs to have time available for training. Methods and delivery modes may reflect time pressure issues rather than learner preferences.

Sector. The organization's status as a nonprofit, for profit, or public entity may influence training practices in the organization. Since nonprofit organizations have no responsibility to shareholders, they may have more financial resources available for training than for-profit organizations. To Weisbrod (1998), nonprofits avoid profit-maximization to serve their target groups and to provide services for the common good. After controlling for size and setting-type, Brown (2002) found nonprofit developmental disability service provider organizations offered a higher level of quality care than for-profit facilities. Other researchers, comparing for-profit and nonprofit organizations in the

health care sector, found that nonprofits are no less efficient than for-profits, nor are donations sensitive to the level of taxable revenues of organizations (Gertler & Kuan, 2002; Yetman & Yetman, 2002).

Research in both aging and developmental disability provider organizations found no significant distinctions by sector for individual-level outcomes (Ejaz et al., 2008; Felce et al., 2002). Brody (1996) conceives of more nuanced comparisons of organizations, by breaking down practice components, rather than sweeping generalizations provide clearer information. To compare both aging and developmental disability service provider organizations by profit or nonprofit status, the methods section sets forth distinct operationalized definitions for each variable to allow for nuanced comparisons.

Table 4
Structural Variables Related to Training

Variable	Framework	Theorist(s)/ Researcher
Evaluation: cyclical process that improves training	Evaluation The 4 levels	Kirkpatrick & Kirkpatrick (2006)
Organization Type	Type of organization more important than profit sector	Ejaz et al. (2008)
Payer-Mix: percent of public assistance in payer mix –resources for training	Inequity inherent in the system	Quadagno & Reid (1999)
Organization size: Number of workers or clients	Size and complexity Size and hierarchy Size and support	Weber (1947) Burton & Obel (1998)
Workload Intensity of Care dementia, non-ambulatory, bedfast, age	Stress-related Stress-related Need for knowledge	Maas et al. (2008) Zimmerman et al. (2005)

Summary of structural variables. Table 3 summarizes the structural variables and the theoretical connection for this study. According to SSP, structural influences shape

the psychosocial environment and interactions between individuals and groups. In turn, these interactions affect behaviors, attitudes, and feelings (McLeod & Lively, 2003). Some research explores the relationship of structural characteristics of service provider organizations to DCW job satisfaction or other individual level variables. However, a paucity of research exists on the relationship between structural characteristics of service provider organizations and DCW training practices. Training content, method, and/or delivery may vary with differences in the structures of service provider organizations. Organizational structures may not be the only factors that shape DCW training practices. The SSP theoretical framework highlights that both structure and culture shape proximal level experiences. Therefore, I examine the role of culture for its contribution to DCW training practices.

Organizational Culture

Theoretical Background

The nature of the relationships between organizational structure and organizational culture are multifaceted and complex. In the SSP framework, both cultural and structural components “constrain” and “enable” individual outcomes, but the substance of the “constraints” differ (McLeod & Lively, 2003). Two streams of theory exist in studying organizational culture separately from structure. Functional approaches treat culture as a variable, whereas symbolic approaches see culture as a “lens for studying organizational life” (Martin, 2002, p.393). Cultural components can include both material and non-material aspects. For the purpose of this study, the cultural components of service provider organizations consist of beliefs and values, such as those pertaining to the norms and importance of DCWs within the organization. The theoretical

frameworks for specific beliefs and values that may influence training practices as a proximal variable include: 1) organizational culture theory; 2) medicalization; 3) conflict theory; and 4) interactionist theory.

Organizational Culture Theory

Schein (1992) and Cook and Yanow (1993) provide insight into organizational culture components. Schein (1992) describes organizational artifacts as visual symbols and rituals that reveal underlying assumptions and beliefs. In aging and developmental disability provider organizations, some symbols and rituals that may be important include: whether DCWs are invited to attend staff conferences in which clients' care plans are developed, eating arrangements among different levels of staff at break time, and DCW opportunities for input into their own work schedule or assignments. Little is known about the relationship of administrators' perceptions of the organizational culture's symbols or rituals surrounding DCWs and existing DCW training practices.

Training practices and organizational values. Schein (1992) explains that espoused values, displayed by administration's strategic plan or an organization's mission statement, may differ from true assumptions in the organization. These assumptions consist of unconscious perceptions, thoughts, and feelings that provide the source of action and values (Schein, 1992). Training practices may be used proximally to acculturate workers to a particular role with a set of common values to be used in client, peer, and supervisor relationships. Training content may reveal the relative priority of these values and beliefs. Schein (1992) suggests that a history of shared learning promotes consistency throughout the organization. However, a great deal of turnover or a lack of leadership challenges a consistency in perceptions (Martin, 1992).

Methods and delivery of training may also manifest some underlying cultural assumptions. Lin and Hsieh (2002) found that task identity or engaging in communication with peers or supervisors about tasks improved motivation and commitment to the job. In a provider organization, orientation training sets the tone for communication procedures. Moreover, priority placed upon DCW interaction in training may acculturate the DCW to actual communication patterns in the organization. Menne et al. (2007) suggest that DCWs prefer interactive training. The organization's stated training needs and challenges may reveal underlying assumptions regarding the role of the DCW. The ratio of on-the-job training and interactive training to didactic training may reveal the value given to DCWs preferences. Moreover, the ratio may suggest organizational beliefs about DCWs' ability to contribute knowledge and skill from experience during training sessions.

Medicalization

Certain beliefs and values inherent in the health care system (a social system) may impact DCW training practices in service provider organizations. Medicalization refers to the way in which beliefs and values surrounding the medical model influence social life. With medicalization, a cultural process, medical ideas about life course events, expectations of independence, physical care, task orientation, and expertise manifest in beliefs underlying interpersonal relations (Delmouzou, 2008). First, life course events, such as aging or dying, are no longer perceived as normal (Illich, 2003). Henderson and Vesperi's (2005) ethnographic work in a nursing home considers the "rituals" that focus on cure rather than coping with chronic health conditions or death.

Second, in service provider organizations that support individuals with a developmental disability, the medical model is manifest in the focus on constant

improvement through vocational rehabilitation, community integration, and independence in daily living (McCarron & McCallion, 2005). As an individual ages, s/he may need more assistance with daily living tasks. For example, despite physical and cognitive decline related to secondary disability, some individuals with developmental disabilities continue to work at a vocational rehabilitation program (sheltered workshop) long after the typical retirement age. Accepting more assistance with care requires that both DCW and resident overcome the prevailing medical model beliefs.

Third, the values inherent in the medical model of care prioritize physical care and task orientation. Gubrium (1967) refers to this dichotomy between physical and psychosocial care, when he terms the DCW's activity as "bed and body work" (p. 121). The focus on DCW "assignments" rather than individuals suggests a task orientation rather than person orientation.

Fourth, the medical model perspective, with the value placed on education and scientific expertise, creates a power differential between DCWs' and nurses' knowledge. West, Griffith, and Iphofen (2007) explain that the application of science to medicine, coupled with immense technological advances in the treatment of sickness, meant that nurses gave their non-professional, low status tasks to DCWs. Until recently, DCWs were referred to as "house staff," "nursing assistants," or "nursing aides." The perception, labels, and values related to medicalization may influence training practices.

Specific cultural elements related to medicalization theory. The labels previously given to DCWs in their work roles suggest a lower level of status than nursing, based on perceived expertise in health care. In a health care setting, invitation, attendance, and participation of DCWs at goal-setting conferences, called "care

conferences” or “individual service planning” suggests an organizational culture that values DCWs’ knowledge or expertise with regard to the care of individual clients. It is expected that a high reliance on the medical model and professional expertise is negatively related to DCW invitation and participation at care planning meetings.

DCW training practices related to medicalization. Little empirical evidence exists for the ways that values and beliefs associated with the medical model approach to providing care influence staff development in general or DCW training in particular. Medicalization, as demonstrated by the organizational administration’s perception of DCWs involvement in meetings and care planning, may affect the staff development of DCWs in three ways by impacting content, method, and delivery of training.

First, as a result of medical model values, content analysis suggests that training content may overemphasize improvement, independence, and skill acquisition without reflecting any changes that accompany aging in content (Mabry & Kemeny, in press; College of Direct Support CDS, 2008). McCarron & McCallion (2005) suggest an overemphasis on client independence and lack of education in geriatric content may create an antithetical effect of stress for DCWs who observe skill loss in the aging individual. Regulatory compliance standards may reflect the medical model. If training practices in an organization rely only on regulations, the training content may reflect medicalization. Second, medicalization also may influence methods. If the organization values the medical expert, as demonstrated by little involvement of DCWs in meetings or care planning, training will more likely reflect expert-led didactic methods from the technical-rational paradigm (Mackaracher, 2006). Third, in an organization with little involvement of DCWs in meetings or care planning conferences, delivery of training

content may prioritize efficiency and task orientation rather than interaction in learning. Laschinger, Finegan, & Shamian (2001) found that DCW involvement in care planning conferences improved organizational commitment. However, little known research addresses the way in which content, method, and training vary by the organization's understanding of the DCWs' decision-making role in client/resident care-related meetings and care conferences.

Conflict Theory: The Impact of Inequality

Values and beliefs inherent in the medical model serve to create power differentials based upon expertise. Conflict theory, broadly explored in both Marx (1975) and Weber's (1947) work concerning social class relations and the distribution of power, suggests that perceptions of inequality create conflict. Conflict theory is particularly useful in explaining the beliefs and values that shape the relative equality of relationships between DCWs and supervisors. Influenced from multiple directions, class and social status, the stigma of aging and developmental disability, and gender all bear consideration in explaining the influence of cultural components on training practices. These cultural components in provider organizations include the administration's perception of: 1) the DCWs' role in decision-making in the organization and 2) the DCWs' and supervisors' social interactions. The literature does not provide any known sources to explain how training practices may vary with these cultural components.

Habitus. Bourdieu (1980) builds upon both Marx's and Weber's theoretical perspectives to explain the symbolic differentiation of status, habitus, that becomes part of the collective consciousness. Inequality and power differentials, determined by the medical model hierarchy as well as a dimension of class relations, impact the culture inside the provider organization as well as society outside it. Difference in status may be

related to prestige bestowed in the medical model, minority status, or economic status. Attendance at a client's care planning conference with families and opportunities for organizational decision-making are "prestige" symbols. Gubrium (1975) describes the way rehabilitation staff invoke the "relative prestige" (p. 4) of their status when they feel it advantages them. In addition to the divisions based upon educational attainment and resulting prestige in the medical hierarchy, over half of DCWs who work in nursing homes are minorities (Squillance, Remsberg, Harris-Kojetin, Bercovitz, Rosenoff, & Han, 2009). Ejaz et al. (2008) reports a negative relationship between frequency of racist comments and job satisfaction. Twenty percent of DCWs live below the poverty level (DHHS, 2004) and one-third of DCWs in nursing homes reported receiving some kind of means-tested public assistance (Squillance et al., 2009). Not uncommon with low income, family and financial worries may impede participation in continuing education.

The supervisor's perceptions and communication may display inequality. However, the lack of respect may also be internalized by some DCWs. Just as Gaventa (1980) describes the internalization of the status quo by those who are dominated in power relationships, DCWs' apathy or "culture of silence" in a poor work environment becomes an adaptive response to a series of low-wage jobs in which they are denied the "dialectic process" (p. 18). Bourdieu (1980) suggests that these inequities become so familiar that they become expected as the norm. Exploring the decision-making process in an organization may reveal the most about power differences (Pfeffer, 2005).

Stigma. Goffman's (1963) conception of stigma and social identity is useful in a discussion of the association between the DCW and the societal value attached to the role. Of particular interest, societal attitudes toward people aging with developmental

disabilities may have a spillover effect on the direct care workers who support them. Culture's "beliefs are etched in roles...[and] assistance placed at their disposal and wages offered them" (Thaw & Wolfe, p. 92). Goffman (1963) suggests that society treats both the individual who is socially related to a stigmatized individual and the individual "as one" (p. 30). Moreover, Goffman's (1963) "prestige" and "stigma" (p. 44) symbols are apparent in the aging and developmental disability provider organization. In an ethnographic study, Jervis (2002) found that perceptions of job tasks and roles contributed to conflict between DCW and their supervisors. As opposed to professional tasks, the type of work tasks that DCW's complete may devalue their worth and power in the organization. Woodward (2009) suggests that DCWs engage in relational work, termed "emotional labor." Society does not value emotional labor or personal care as highly as the rational or "left-brain" work of their supervisors (Mastracci, Newman, & Guy, 2006).

Feminist theory. In addition to decision-making power based on the type of work, the intrinsic inequities in elder care also hinge on issues related to gender. Nine out of ten DCWs are women (National Clearing House, 2006; Squillace et al., 2009). Women in the direct care workforce have low-paid jobs, uneven hours, and poor benefits (Squillace et al., 2009). Abramovitz (1999) suggests that generating income for organizations in the "service sector" (p. 301) requires low pay and irregular work patterns for workers, often disqualifying workers from unemployment benefits by keeping them just below a certain number of qualifying hours. For example, eighty-nine percent of nursing homes offer health insurance, but only 54% of DCWs participate in health insurance (Squillace et al., 2009). Half of DCWs family incomes are within the 200%

poverty level, and DCWs are considered low-income workers as measured by the Government Accounting Office standards (Squillace et al., 2009). While they receive little pay, DCWs' jobs typically require more stressful tasks, potential for injuries, and physical labor than any other position in the organization (Squillace et al., 2009).

Most supervisors, termed "top staff" by Gubrium (1973), also are women. However, they do not experience the combination of gender, social status, less technical expertise status, lower income, and stigma related to the "bed and body work" position. Although DCWs spend the most time with individual clients, they may have little input into care decisions about clients or to which clients they are assigned to work. Orloff (2006) suggests that women need to overcome economic dependency but also need access to "valued resources" (p. 73), such as respect and time. More than wages, the organization administration's beliefs about the autonomy, independence, and role of DCW in decision-making for organizational issues, DCW work outcomes, and client care decisions also reflect power differentials (Conger & Kanungo, 1988; Schaeff, 1981; Abramovitz, 1999).

Specific elements of organizational culture related to conflict. Research describes well the relationship between psychological issues and individual level outcomes through stress and coping frameworks. Resulting in conflict, stress in personal relations or perceptions of inequity in the workplace contribute to job-related stress among DCWs which in turn may affect their job dissatisfaction and turnover rates (Ejaz, et al., 2008; McCarron & McCallion, 2005). In an effort to address the retention problems related to job-related stress, Harahan, Keifer, Johnson, Guiliano, Bowers, and Stone (2003) outline essentials such as opportunities for decision-making, clearly articulated

expectations, and feedback as critical human resource practices from a statewide case study project.

The roots of a participatory management theory (Likert, 1967) trace back to both human relations and human resource theories. Follett (1926), one of the first organizational theorists to argue for equity in decision-making, outlined a system for human resource management. Likert (1967) conducted empirical research in which he found a relationship between organizational effectiveness and positive relationships, cohesive work groups, collective decision-making, and clear expectations. In both developmental disability and aging service provider organizations, applied research also indicates that DCW control over their own jobs and over decisions made in the organization improves job satisfaction and overall organizational effectiveness (Hatton et al., 2001; Schmid, 2002; Strouse et al., 2003). Moreover, individual level empowerment-promoting factors include motivation, satisfaction, and achievement (Kuokkanen, Suominen, Rankinen, Kukkurainen, Savikko, & Doran, 2007). Opportunities for an exchange of information among equals and decision-making opportunities positively relate to DCW's feelings of empowerment (Irvine, Leatt, Evans, & Baker, 1999; Pillemer, Hegeman, Albright, & Henderson, 1998; Zimmerman, Israel, Schultz, & Checkoway, 1992).

Relation of training practices to decision-making. Despite the plethora of research on DCW decision-making, empowerment, job stress, and satisfaction, little is known about the way training practices such as content, method, or delivery vary with the organization's administration's perception of the DCW's role in decision-making. Many DCW curriculums focus on the client's rights, autonomy, and choice-making (Center for

Rural Pennsylvania, in press; College of Direct Support, 2008). It is not known how emphasis on client decision-making and autonomy in training for DCWs relates to administration's perception of DCW's role in organizational decision-making. Moreover, the existence of training modules on DCW leadership, problem-solving and/or goal-setting may be associated with a higher rating by the administrator on the frequency of DCW involvement in organizational decision-making.

If SPO administrators perceive high involvement by DCWs in organizational decision-making, this may also be associated with best-practices in method and delivery. When surveyed, DCWs suggest they need training in dementia care and approaches to challenging behaviors (Menne et al., 2007). Menne et al. (2007) report that DCWs prefer training that is shorter in duration, higher in frequency, interactive, and on-the-job. If administration perceives a higher involvement of DCWs in decision-making, DCW input may be apparent in training practices, especially with regard to method. No known research explores the relationship of administration's perception of DCW involvement in organizational decision-making and training content, methods, or delivery.

Interactionist Theory: The Impact of Social Support

Cultural variables concern patterns of beliefs or values communicated through socialization in the social system (McLeod & Lively, 2003). Of particular interest in this study are SPO administration's perceptions of the organization's level of social support reflects organizational cultural beliefs or value. In particular, social support is the availability of interpersonal resources for an individual or a group of individuals (Cohen & Wills, 1985). These interpersonal resources activate through social interaction. Social support may promote well-being through interaction with others directly or by buffering adverse effects (Cohen & Wills, 1985). Durkheim's (1933) work on industrialization may

be applied to organizations as well to help understand the balance between differentiation (specialization) and integration (sense of community).

Theoretical background. The underlying conceptualizations of most social interaction theoretical literature lies in Mead's (1934) conceptualization of the "I" and the "Me." Mead's (1934) theoretical explanation of human interaction explains the way people derive identity from social interaction. Positive social interaction becomes the basis for preserving or reconstructing the self-identity for both the aging individual and the direct care worker. Three main factors underlie the social interaction in an aging or developmental disability provider organizations. First, an aging individual's reconstruction of self-identity and compensation for losses becomes pertinent to any discussion of best-practice content in training for DCWs. Second, an understanding of how DCWs conceptualize their self-identities informs an exploration of social interaction and potential for support in the organization. Third, the administration's perception of peer and supervisor support of the DCW establishes an understanding of the organization's value of positive social interaction.

DCW as "other." In order to best understand the complexity of social interaction in aging and developmental disability provider settings, interactionists, such as Goffman (1967) and Gubrium (1975), provide a window into human interactions in institutional settings, such as prisons, asylums, and nursing homes. Angrosino (1998) also provides similar ethnographic analysis of the social interaction in group homes. Despite the scant attitudinal research in aging individuals, most theoretical conceptualizations operate on the underlying assumption that aging creates a psychosocial loss that requires readjustment. Self-appraisal, a sense of control, mastery, and self-efficacy, promoted

through positive social interaction, play a role in re-establishing or maintaining the well-being of the aging individual (Gatz & Zarritt, 1999; George, 2006; Giarusso, Mabry, & Bengston, 2001; Schmeckle & Bengston, 1998; Settersten, 2006). Goffman's (1961) interactionist framework applied to institutional life indicates that group-living arrangements create a strain on self-identity for individuals who live in them. Problems with reflected appraisals, social comparisons, impression management, and self-attributions that hinge on language and critical thinking contribute to individual client problems with readjustment to loss and the institutional environment (Goffman, 1961, 1967; Leger-Krall, 2001). Angrosino (1998) underlines some of the same issues in his story telling about Opportunity House, a group home for individuals with intellectual disabilities. In both cases, the DCW's positive social interaction with the aging individual provides an opportunity for the individual to adjust to loss. Building upon social psychological theory, Baltes and Carstensen (1999) have proposed the theory of *collective selective optimization with compensation* in which other people, either family or paid caregivers, are needed to serve as the "other" (Mead, 1934) by assisting in the process of the older person's identity reconstruction in response to the losses in the aging individual.

DCWs and supervisors. Gubrium (1975) addresses the social organization of care in which DCWs interact with their supervisors. Gubrium (1975) observes that "floor staff" or DCWs experience the "social complexities" (p. 157) even more than clients or administration. In many ways, DCWs, caught in the middle between the administration and the clients, must deal with annoyances from both directions. Based upon Aneshensel, Pearlin, Mullan, Zarit, and Whitlach's (1995) framework developed for family

caregivers, McCarron and McCallion's (2005) framework revision places knowledge of the aging process as a buffer for DCW stress in caregiving and coping with grief. Moreover, supervisor support may buffer DCW role strain that results from an attempt to balance care needs of the client with organizational demands for time efficiency (McCarron & McCallion, 2005).

Social support and training practices. Three implications for the relationship between training practices (content, method, and delivery) and administration's perception of social support become apparent. First, the theoretical understanding of social interaction suggests a relationship between administration's perceptions of social support and DCW training content that reflects both knowledge and skill acquisition in the area of social interaction with aging individuals. For example, best-practice content should contain an understanding of the sensory losses that often accompany aging, an understanding of end-of-life psychosocial issues, and communication skills training (Burgio, Allen-Burge et al., 2001; Burgio, Stevens et al., 2002; Hollinger-Smith & Ortigara, 2004; McCarron & McCallion, 2005). Second, administration's perception of high social support may be associated with DCW training methods that allow opportunities for social interaction and application in training sessions or on-the-job social support. Third, administration's perception of high social support may be associated with DCW training delivery methods that allow for supervisors' support and reinforcement.

Empirical research in various frontline service workers reveals a positive relationship between DCW or frontline social support and individual-level outcomes, such as job satisfaction and organizational commitment (Ng, Butts, Vandenberg, DeJoy,

& Wilson, 2005; Pillemer, Sutor, Henderson, Meador, Shultz, Robison, & Hegeman, 2003). Ng et al. (2005) found that management communication and work schedule flexibility improved organizational commitment in frontline workers. Research shows DCWs need support or positive social interaction from the supervisor in order to transfer knowledge learned in their social interaction with the client. Parsons, Daniels, Porter, & Robertson (2008) found social support helpful in overcoming barriers to training transfer in a developmental disability provider organization. Moreover, investigations of training outcomes in aging provider organizations suggest the efficacy of supervisor support before and after training (Burgio, Stevens et al., 2002; Morgan & Konrad, 2008). Despite the research findings concerning DCW outcomes and social support, very little is known about the way training practices in content, method, and delivery vary based upon administration's perceptions of supervisor and peer support for DCWs in the service provider organization.

Table 5
Cultural Variables Related to Training

Variable	Theoretical Framework	Theorist(s)
DCW input: organization decisions Organizational acculturation Committee work	Organizational Culture Theory	Schein (1992) Cook & Yanow (1993)
DCW input into care decisions Power-input into work	Medicalization Habitus	Delmouzou (2008) Bourdieu (1980)
DCW integration-lack of conflict (Power-Respect)	Conflict Theory • Inequality	Marx (1975) Weber (1947)
DCW integration –lack of stigma	Differentiation and Integration	Durkheim (1933) Mead (1934)
Social Support/Role Clarity DCW and peers DCW and supervisors	Interactionist Theory • The I and the Me • Support and knowledge as buffer for stress	Goffman (1961) Gubrium(1975) Baltes and Carstensen (1999) McCarrion& McCallion (2005)

Summary of Cultural Variables

For the purpose of this study, cultural components focus on beliefs and values that influence patterns of behavior on the individual level. The theoretical frameworks for specific beliefs and values that interact with training practices as a proximal variable include: 1) organizational culture theory; 2) medicalization; 3) conflict theory; and 4) interactionist theory. According to SSP, cultural components influence the psychosocial environment and interactions between individuals and groups. In turn, these interactions affect outcomes, most notably behaviors, attitudes, and feelings (McLeod & Lively, 2003). Research on DCWs explores the relationship between cultural variables and DCW job satisfaction and other individual level variables. However, the relationship between cultural characteristics of service provider organizations and DCW training practices within them remain unexplored. Training content, method, and/or mode of delivery may vary by cultural aspects of a service provider organization, such as the administration's perception of DCWs' role in medical-type meetings such as care planning, organizational decision-making, and perception of social support offered by peers and supervisors.

Possible Interaction between Structural and Cultural Variables

Scant research is available to provide direction as to the relationships between structural and cultural variables. Apart from Stott et al.'s (2007) study that found a relationship between setting and job design characteristics, little is known about the relationships in this particular context. Based upon the theoretical literature, however, tentative suggestions can be made for relationships. First, smaller size of the organization may be related to more social support and more opportunities for DCW role in organizational decision-making. In Kane et al. (2007), smaller group homes for frail older

adults with an emphasis on social interaction and “bottom-up” decision-making resulted in positive outcomes for both residents and staff.

Second, the less complex the care needs of the clients, the more opportunity for DCWs to have a role in decision-making. I expect that medicalization will have less influence in a setting where the care needs are not as complex. Third, the more highly regulated the provider setting, the less opportunity for supervisor support and DCW role in decision-making. For example, nursing homes are heavily regulated. The regulations, related to the medical model, may have the antithetical effect of creating barriers to social interaction and support. The more regulations, the less decisions available for DCW participation. Therefore, primarily based on the theoretical literature, I expect an interaction between size and cultural variables (support and decision-making), client case-mix and DCW role in decision-making, and setting and cultural variables (support and decision-making).

Conclusion

What is Known from the Literature

Related to DCWs, the empirical and theoretical literature confirms the important variables in organizational structure relevant to this study include: evaluation practices, type of organization, funding sources, organization size, and intensity of care. In the research to date on DCWs, a reasonable body of research establishes relationships between organizational structural and cultural variables and individual level outcomes. In the area of structural variables, the literature reviewed reveals that DCW job satisfaction varies with intensity of client care (staff-to-client ratio). Little clarity in the empirical evidence exists on the relationship of individual-level outcomes, such as job

(dis)satisfaction and the size or sector of the organization. A scant literature suggests that training preferences vary by type of service organization. However, little is known about how all training practices vary by type of service organization, complexity of care, workload level, size, sector, or funding mechanisms.

The theoretical and empirical literature reviewed suggests salient cultural variables are the DCW's role in decision-making (about client/resident care, organizational issues, and own work concerns), supervisor and peer social support, and conflict level. Robust empirical support for the relationship between stress and job (dis)satisfaction and retention exists. Organizational culture research suggests that involvement of DCWs in care planning meetings improves DCW commitment to the organization. Supervisory or peer support is also associated with job satisfaction. Substantial research exists on particular training programs and DCW individual level outcomes. However, little is known about how training practices vary by cultural variables. Theoretical literature supports the possibility that best-practices in training vary by cultural variables.

How the Study Fills a Gap in Current Research

This research study fills a gap in the current research on DCW training in three ways. First, this study adds to the body of research on the relationship between macro components in the organization (structure and culture) and proximal variables (training). Scant research exists with regard to training practices and organizational structure and culture in aging network organizations. Only one known study examines organizational structure, culture, and training practices (Stott et al., 2007). The study found that DCW participation in care planning meetings and supervisor support varied by type of

organization. Stott et al. do not operationalize job design and training practices based upon evidence-based research nor do they break down macro-components. Moreover, the analysis does not extend beyond the bivariate level. Therefore, other factors lack statistical control. However, this study also contributes to an understanding of best-practices training by combining qualitative and quantitative methods. Third, this study contributes to an understanding of best-practices in both aging and developmental disability networks, providing a means for comparison. No known studies, with the exception of the Center for Rural Pennsylvania research (Mabry & Kemeny, in press) involve both the contexts of the aging and developmental disability network. Since individuals with developmental disabilities are living longer and need similar services as those who are aging without a disability, the research in both networks simultaneously contributes to the body of knowledge and future policy development.

Hypotheses that Correspond to Research Questions

Little known research exists that examines the relationship between variations in the structure and culture of service provider organizations and their DCW training practices. This study examines the relationships between: organizational structure, culture, and DCW training practices in aging and developmental disability service provider organizations. Based upon the theory and research presented in Chapter 2, the specific research questions and hypotheses addressed in this study are:

RQ1.) How are structural characteristics of service provider organizations related to best-practices in DCW training?;

RQ2.) How are cultural characteristics of service provider organizations related to best-practices in DCW training?;

RQ3.) How do the structural and cultural characteristics of service provider organizations interrelated to predict best-practices in DCW training?

Alternative Hypothesis 1: Best-Practices in Training Index will vary by structural characteristics.

H1a: I expect the Best-Practice in Training Index to have a positive relationship with training evaluation level.

H1b: I expect the Best-Practices in Training Index to have an inverse relationship with percent of public assistance funding.

H1c: I expect the Best-Practices in Training Index to have an inverse relationship with intensity of care.

H1d: I expect the Best-Practices in Training Index to have a positive relationship with organization size.

Alternative Hypothesis 2: Best-practices in training will vary by cultural characteristics such as levels of DCW input into care, organizational decision-making, and integration into the organization.

H2a: I expect Best-Practices in Training Index to have a positive relationship with level of DCW input into care decision-making.

H2b: I expect Best-Practices in Training Index to have a positive relationship with DCW input into organizational decision-making.

H2c: I expect Best-Practices in Training Index to have a positive relationship with DCW integration in the organization.

Alternative Hypothesis 3: Structural and cultural characteristics of provider organizations will interrelate in shaping training practices.

H3 a: I expect the interaction of evaluation practices and DCW care input to have a positive relationship with best-practices in training.

H3 b: I expect the interaction of evaluation practices and DCW organization input to have a positive relationship with best-practices in training.

H3c: I expect the interaction of evaluation practices and DCW integration to have a positive relationship with best-practices in training.

H3 d: I expect the interaction of percent of public assistance funding and DCW care input to have an inverse relationship with best-practices in training.

H3 e: I expect the interaction of percent of public assistance funding and DCW organizational input to have an inverse relationship with best-practices in training.

H3f: I expect the interaction of percent of public assistance funding and DCW integration to have an inverse relationship with best-practices in training.

H3 g: I expect the interaction of organizational size and DCW care input to have a positive relationship with best-practices in training.

H3 h: I expect the interaction of organizational size and DCW organizational input to have a positive relationship with best-practices in training.

H3i: I expect the interaction of organizational size and DCW integration to have a positive relationship with best-practices in training.

H3 k: I expect the interaction of intensity of care and DCW care input to have a positive relationship with best-practices in training.

H3 l: I expect the interaction of intensity of care and DCW organizational input to have a positive relationship with best-practices in training.

H3m: I expect the interaction of intensity of care and DCW integration to have a positive relationship with best-practices in training.

CHAPTER III

METHODOLOGY

Overall Purpose

The overall goal of the study is to examine current training practices used to prepare direct care workers (DCWs) to meet the care needs of older adults, and particularly individuals with developmental disabilities as they age. Objectives related to this goal are to: a) identify relationships between best-practices in training DCWs and structural and cultural characteristics of the service provider organization (SPO) in which they occur; b) utilize content of actual training materials and written comments by SPO administrators to complement an understanding of the relationships. Mertens (2007) suggests that research paradigms determine theory use, goals of research, and frame of questions. The purpose of this study is to describe patterns and relationships, with their application, to public policy or organizational policy regarding DCWs who support aging individuals in various provider organizations in the state of Pennsylvania. This study fits a pragmatic paradigm that uses both qualitative and quantitative methods in a complementary fashion. Quantitative analysis will identify relationships between best-practices and structural and cultural characteristics of the SPOs. In an effort to triangulate perspectives on the same research questions concerning best practice, structure, and cultural characteristics of SPOs, I use qualitative analysis in order to provide a more in-depth exploration of the SPOs administrations' perceptions of DCW training. I further explain the research design by detailing the data collection process, operational definitions of variables, and analyses.

Research Design

This study examines the relationships between: organizational structure, culture, and best-practices in DCW training in provider organizations that serve individuals who are aging with developmental disabilities. The research questions include: 1) How are structural characteristics of service provider organizations related to best-practice in DCW training? 2) How are cultural characteristics of service provider organizations related to best-practice in DCW training? 3) How do the structural and cultural characteristics of service provider organizations interact to shape best-practice in DCW training?

The study includes two interrelated research activities to accomplish the objectives. A mixed methodological framework most appropriately compliments the purpose of the study to examine the relationship of best-practice in DCW training with structural and cultural characteristics of SPOs that serve adults who are aging with and without a developmental disability. Quantitatively, this research questions how best-practice training (the dependent variable) varies with the structural and cultural aspects (the predictor variables). Using SPO administrative perceptions of the needs and challenges related to DCW training, the research design includes an emergent aspect (Maxwell, 2005). By providing “thick” description (Maxwell, 2005), the qualitative process further clarifies the quantitative findings by answering the same three research questions.

This study uses data from a cross-sectional survey to explore training practices across Pennsylvania. Cross-sectional research, which looks at a phenomenon at one point in time (Monnette, Sullivan, & DeJong, 2005), best fits this study’s purpose of investigating the relationship of best-practices in training with structural and cultural

variables at the same point in time. Due to the inability to establish time order or rule out spuriousness, cross-sectional research does not permit causal inferences (Cook & Campbell, 1979). Since scant research exists about best-practices in training in SPO organizations, an exploration of relationships at one point in time becomes a necessary first step before experimental research (Monnette, Sullivan, & DeJong, 2005). In order to provide a more in-depth understanding of administration's perspectives at one point in time, grounded theory (Charmaz, 2006) will guide analyses of qualitative data in order to compliment the quantitative analyses and improve the validity of conclusions.

Data

The data for this study come from a 2008 survey of licensed service provider organizations (SPOs) in Pennsylvania's developmental disability system and aging services network. The survey was part of the *Training on Aging with a Disability for Direct Care Workers in Pennsylvania* study conducted for the Center for Rural Pennsylvania, which I served as co-principal investigator (Co-PI). In my role as Co-PI, as an active participant in each step of the study, I have a high level of familiarity with the procedures and outcomes of the project. We surveyed SPOs about the frequency, duration, methods, and content of training for DCWs. Respondents also supplied information on characteristics of their organization, including both structural and cultural characteristics. In addition, the survey, located in Appendix C, instructed service providers to list their challenges and needs with regard to DCW training. Moreover, in the cover letter, we asked the SPOs to provide curriculum materials in current use for training DCWs.

Sample. The population for the survey consisted of all licensed providers of Developmental Disability and Aging services in Pennsylvania. Since the population of licensed service providers in Pennsylvania is finite and identifiable, a questionnaire was sent to all licensed Developmental Disability and Aging service provider sites that were listed in publicly available, state-issued directories of licensed providers of these services. The mailing list was comprised of 3,534 Pennsylvania licensed adult day care centers, adult/day/vocational training facilities, assisted living providers, community/group/family living homes, home health care agencies, intermediate care facilities, personal care homes, and skilled nursing facilities that were listed in the official, publically available directories of licensed providers posted on the web sites of the relevant regulating agencies, such as the Pennsylvania Department of Health, Aging and Public Welfare.

The final sample consisted of 328 service provider organizations in Pennsylvania, which represents a sample of approximately 10.5% of the service provider population of interest. This response rate is generally consistent with mailed surveys (Babbie, 2004). As shown in Table 6 and 7, the final sample largely reflects the DD and Aging SPO populations in Pennsylvania: Aging SPOs represent 38% of the provider population and 36% of the sample. Developmental disability service providers make up 62% of the provider populations and 66% of the sample. A few differences exist between the population of SPOs and the final sample. First, the sample contains an overrepresentation of rural providers: 52.74% of the sample providers are rural SPOs while 35.9% of the SPO population is rural. Second, among the aging network service providers, two types of SPOs are overrepresented: adult day care facilities make up 15.8 % of the sample compared with 6.6% of the population, and assisted living facilities comprise 6.1% of the

sample compared with 2.3% of the population. Finally, one type of SPO, skilled nursing facilities, is slightly underrepresented, making up 10.37% of the sample compared with 17.4 % of the SPO population. Despite the slight issues with over- and underrepresentation of some organizational types, enough SPOs of each type exist to represent the training practices of such organizations adequately. Moreover, this research describes a relationship rather than represents a population. Resting on the intent of the research question, small differences in the representation of some types of SPOs in the sample relative to the population become less important. Moreover, I account for organization type in the regression equation (described below) as part of the independent variables. Therefore, given the context, I do not expect skewed data (Babbe, 2004; Monette, Sullivan, & DeJong, 2005).

Table 6
Number and Percent by Type of Aging Service Organizations

Assisted Living	Home Health	Adult Day Care	Skilled Nursing	Total
6.1% (n=20)	6.1% (n=20)	15.85% (n=52)	10.37% (n=34)	38.41% (n=126)

Table 7
Number and Percent by Type of Disability Service Organizations

Personal Care	Residential Care	Adult Day Training	Intermediate Care	Vocational Rehabilitation	Total
38.41% (n=122)	9.15% (n=30)	7.01% (n=23)	3.96% (n=13)	4.27% (n=14)	61.58% (n=202)

The survey. We used a questionnaire, located in Appendix C, to elicit quantitative data from licensed SPOs in Pennsylvania on their current practices for training direct care/service workers (DCWs) including: 1) a checklist that included a variety of training content areas (e.g., aging, dementia, specific developmental disabilities, end of life care, depression, substance abuse, person-centered care); 2)

frequency and duration of training; 3) modes used to deliver training (e.g. classroom, video, hands-on, coaching); and 4) training evaluation practices. The questionnaire also included a set of items measuring the administration's perceptions of the DCW role in decision-making about resident care and in the organization as a whole, as well as supervisor and peer support for DCWs, and conflict for DCWs in the work environment. In addition, the questionnaire included open-ended questions about the provider organizations' needs and challenges in delivering training to DCWs. The survey also asked SPOs to respond to items on provider characteristics, such as the type of provider (e.g., adult day care, assisted living, personal care home, etc.), the county in which the provider organization is located, the size of the facility or program (number of individuals served).

Based upon an extensive best-practice literature review of adult learning theory and evidence-based practices, the development of the survey questionnaire involved many stages of revision. We consulted with subject matter experts from the Aging and Developmental Disability SPO networks, a survey research expert, and state agency administrators to review the draft and offer revisions for refinement of the instrument. Subject matter expert feedback resulted in the addition of some training content areas and clarifying the response categories for some items. Moreover, SPO experts strongly suggested anonymity for organizations. In order to enhance the response rate, we originally planned a confidential survey to track responses and follow up with non-responsive SPOs in order to enhance the response rate. SPO experts advised that identification of organizations might encourage respondents to tailor answers to reflect compliance with regulations rather than the actual practices. We weighed the recommendation

to make the survey anonymous against the potential impact on response rate of the survey. In the end, we decided that an anonymous survey would foster more honest and accurate responses from service providers about the focus of the study, DCW training practices.

Survey process. We mailed the survey questionnaires to Aging and DD service provider organizations (SPOs) on the list of licensed providers during the first week of June 2008. The packet contained a cover letter explaining the study and requesting their participation, a survey questionnaire, and a postage paid return envelope. Instructions asked that the director of the facility or organization, or his or her designee, complete the questionnaire. Ten days later, we sent a follow-up postcard to the entire mailing list requesting that organizations return the complete questionnaire. Most questionnaires were returned in June and July. As long as respondents returned questionnaires, until early September 2008, we continued to collect data.

Response rate. Although 10% response rate for mail surveys remains typical (Babbie, 2004), we consulted with an expert in survey research to discuss the low response rate. He advised that since survey distribution included the entire population (not a sample) of Pennsylvania licensed SPOs, a response rate of even 10%, if relatively proportionate in representing the different types of service providers and their geographic distribution, adequately meets the study goals. Patterns in the data and redundancy of patterns in the sample would mean that a larger sample would have produced substantively similar results. Moreover, triangulation with the qualitative data provided more patterns.

Data Cleaning

The original data, in raw form without composite variables, came from the Center for Rural Pennsylvania (Mabry & Kemeny, in press) study in SPSS. First, on the univariate level, I cleaned the data (Tulane University, 2009) by detecting and correcting any errors in data entry utilizing descriptive statistics. Second, I identified missing data by checking the original hard copy of the data. I listed the amount of missing values for each item and the percentage of the total in Tables 9, 18, 20, 21, 25 below. The percentage of missing values range from 0% to 8%. With certain statistical processes, missing data creates inaccurate values or blanks in some variables. I treated the remaining missing data in various ways in order to avoid changing the value of the variables used in the regression equation. For example, in certain variables, it was appropriate to substitute a zero for the missing data if the composite being created was additive. If the composite being created was multiplicative, a one was used as it would not change the variable. If the variable was not going to form a composite variable, I used the mean value from other “like” organizations to fill in the missing data (Tulane University, 2009). “Like” organizations were those of the same provider type with a similar size and client characteristics. With relatively small percentages of missing data, I found no large differences in findings with or without the missing data.

Variables and Measures

Dependent Variables: Aging, Disability, and Universal Best-Practices in Training

Three composite variables, *Aging Best-Practices in Training (AgingBPT)*, *Disability Best-Practices in Training (DisabilityBPT)*, and *Universal Best-Practices in Training (UniversalBPT)*, measure the extent to which organizations’ DCW training

practices match evidence-based best-practices for training in terms of content, frequency, duration, and method of delivery for three broad content areas. The process of dependent composite variable development progressed from: 1) literature review; 2) subject matter expert review; 3) weighting each content area by delivery methods; 3) factor analysis of the weighted content areas; and 4) creating additive variables from factors with high loadings. At each point in the process, I grounded my decisions in the conceptual literature.

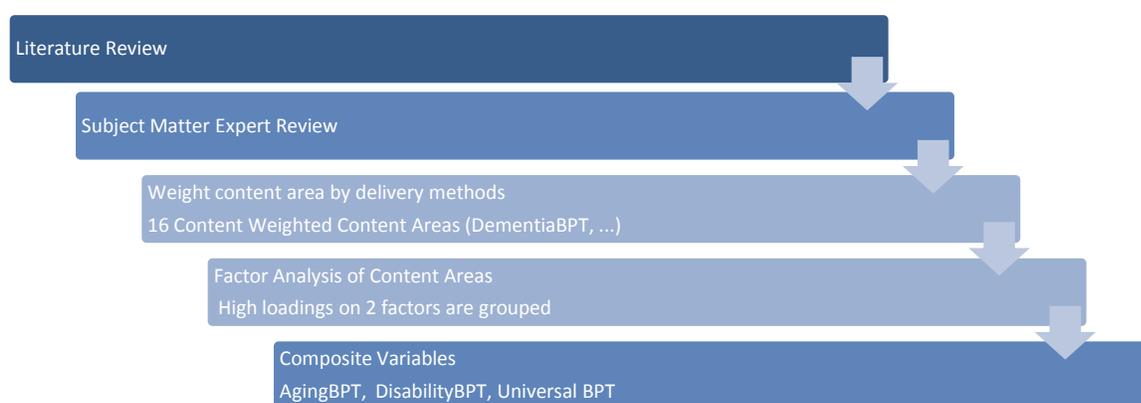


Figure 3 Process of dependent variable development.

Developing variables through literature review. Based on an extensive literature review in DCW training practices with support from the theoretical literature, summarized in Chapter 2, I determined criteria for best-practices in training. Even within the peer-reviewed literature, when judging by criteria, variation exists in quality of “best” practices. In order to develop an “ideal” for best-practices in training, I thoroughly analyzed the empirical literature. From an exhaustive literature review, detailed in Chapter 2, I identified and catalogued DCW training practices. Then, I evaluated each training practice study on the validity of the research design and applicability to the context. Based primarily on the work of Cook & Campbell (1979), I established a grading

system, with grades A through D, explained in detail in Chapter 2, that evaluates the validity of the research design. *Level A* describes study designs that separate the staff development process from other factors through controlled experimental design. Although there may be comparison groups, the design of *Level B* studies do not effectively isolate the staff development process from other aspects of the organization. *Level C* describes studies that evaluate outcomes of staff development programs without any comparison group or control such as pre-experimental studies. *Level D* categorizes descriptive studies that merely report aspects of a staff development programs. *Level Q* distinguishes a qualitative study that cannot be evaluated on the same criteria.

Located in Appendix B, a matrix displays the practice and the grade that distinguishes studies with better evidence for the effectiveness of the training practice. Variable development also relied on theoretical conceptualizations emerging from the qualitative research conducted as part of the Center for Rural Pennsylvania study (Mabry & Kemeny, in press). I sorted, categorized, and content analyzed the materials in order to better understand the current status of training in SPO organizations. At the end of this process, summarized in Table 8, I had a list of best-practices in content areas, frequency of training, duration of training, and methods for training.

Table 8
Findings from Literature Review and Analysis

BP Area	Findings
Content	16 content areas including aging, disability, and universal topics.
Frequency	Frequent trainings (monthly)
Duration	Shorter duration (30 minutes or less)
Methods	Hands-on demonstration, Homework/practice, Interactive/experiential, reflective learning coaching on-site

Statistical variable development. Described throughout this chapter, I used various equations to create weighted variables and composite variables. Due to the frequency distributions of the raw data, some variables were created as ordinal or dichotomous variables. In addition, I used exploratory statistical tools such as factor analysis in order to group some of the responses and simplify the data into a smaller number of variables.

BPT operational definition. The operational definition of *best-practices in training (BPT)* first requires a description of the indicators: 1) *content of training*; 2) *frequency of training*; 3) *duration of training*; 4) *and method of training*. These indicators are part of an equation that defines best-practices for every content area. The equation is:

$$BPT_{wcontentname} = Content * Frequency * Duration * Methodsum$$

Where:

Content = Whether or not a content area is covered

Frequency = The frequency that the particular content area is delivered

Duration = The length of time the particular content area is delivered

Methodsum = A sum of the number of best-practice methods for a particular content area

Content. In Table 9, I list all of the measures with the possible ranges. The measure of content indicates whether or not an organization's DCW training covers a best-practice content area. Topics include: 1) gerontology content; 2) developmental disability content; and 3) universal practice content. Content is measured by asking provider organizations, "Is this content covered?" about 16 different content areas: "Dementia," "Delirium," "Depression," "Physical aspects of aging," "Health promotion," "Physical activity," "Need-driven behaviors," "Sexuality," "End-of-life care and decision-making," "Person-centered care," "Consumer-driven model," "Mental

retardation or Intellectual disability,” “ Down syndrome,” “Autism,” “Cerebral palsy,” and “Substance abuse/misuse.” Response categories were “Yes” (coded 1) and “No” (coded 0). For this measure, I had only a very small percentage of missing data (0 to 3%) depending on the content area.

Table 9
Measure of Best-Practices in Training, Content

Item	Measurement	Range	Missing % of Values	Total
Content	Responses to, “Is this content covered?” (Coded Yes =1; No = 0.)	0 to 1, for each area		
	“Dementia”		0	0%
	“Delirium”		5	1.5%
	“Depression”		1	0.3%
	“Physical aspects of aging”		0	0%
	“Health promotion”		3	0.9%
	“Physical Activity”		3	0.9%
	“End-of-life”		3	0.9%
	“Sexuality”		9	2.7%
	“Need-driven Behaviors”		3	0.9%
	“Person-centered care”		2	0.6%
	“Consumer-driven model”		6	1.8%
	“Mental Retardation” or “Intellectual Disability”		3	0.9%
	“Down syndrome”		6	1.8%
	“Autism”		8	2.4%
	“Cerebral Palsy”		9	2.7%
	“Substance Abuse/misuse”		10	3%

Frequency. As displayed in Table 10, I measure frequency of training in each content area as an ordinal measure by asking, “How often is content on this topic provided?” The seven response categories were: “orientation only” (coded 2), “every other year” (coded 3), “once a year”(coded 4), “every 6 months” (coded 5), “every quarter” (coded 6), “once a month” (coded 7). I coded “Other” to the closest category. For example, I coded “every 8 – 11 months” (4). For “other” that listed any description of “more frequently than once a month” (code 8). Any “Other” without a value filled in as a string or no answers were coded (1). If the respondent left frequency blank, I decided to code no answers (1) in order to avoid canceling out the content value during multiplication of the composite variable.

Table 10
Measure of Best-Practices in Training, Frequency

Item	Measurement	Range
Frequency	Responses to, “How often is content on this topic provided?” for each of the 16 content areas. “orientation only” (2) “every other year” (3) “once a year” (4) “every 6 months” (5) “every quarter” (6) “once a month” (7) “more frequently than once a month” (8) “other” (code in closest category as specified by string) “no answer” (1)	1 to 8, for each of the 16 content areas

Duration of training. As detailed in Table 11, SPOs indicate, “How much time is spent on this content each time [it is] presented?” The six response categories coded are: “1 to 30 minutes” (coded 6), “31 to 60” (coded 5), “61 minutes to half-day” (coded 4), “All day” (coded 3), “more than one day” (coded 2), no answer or blank (1), other coded

according to string response. I coded no answers (1) instead of (0) to avoid a composite best-practices score of zero when I multiplied content by frequency.

Table 11
Measure of Best-Practices in Training, Duration

Item	Measure	Range
Duration Shorter the duration the lower the code (Noelker & Ejaz, 2005).	Responses to, “How much time is spent on this content each time [it is] presented?” for each of the 16 content areas. “1 to 30 minutes” (6) “31 to 60 minutes” (5) “61 min to half-day” (4) “All day” (3) “more than one day” (2) “other” (code according to string response as close to another category) No answer (1) Other (1) if no string explanation written Higher scores suggest better adherence to best-practice	1 to 6, for each of the 16 content areas

Methods of delivery. I measure delivery methods by asking, “What methods are used in this training to deliver this content?” I coded the response categories as dichotomous variables. I coded (1) for best-practices and (0) if not a best practice. Table 12 highlights the dichotomous coding scheme by practice. Based upon the best-practices literature review, I coded the “hands-on demonstrations,” “reflective learning,” “homework/practice,” “coaching on site,” “interactive or experiential” as best-practices (1). I coded “classroom,” “video,” “computer-based methods,” or “no answer” as worse practices (0) in training DCWs.

I generated a variable, *methodsum*, by adding the scores for all method categories in order to develop a best-practice method measure. For responses under “other,” I coded the string response closest to the current categories. After creating the variable

methodsum, I added a “1” to every value of the variable. Again, I wanted to assure that a value of 0 in *methodsum* would not cancel out entries in content, frequency, or duration.

Table 12

Measure of Best-Practice in Training: Methods

Method	Responses to, “What methods are used in this training to deliver this content?” for each of the 16 content areas. “Yes” responses that reflect best-practices are coded 1, all other responses are coded 0. “Classroom” (0) “Hands-on demonstrations”(1) “Reflective learning” (1) “Homework/Practice” (1) “Coaching on site” (1) “Interactive or experiential”(1) “Video or DVD”(0) “Computer-based” (0)	0 or 1, for each of the methods.
Methodsum	Hands-on demo + Reflective learning + Homework/practice + coaching on site + interactive/experiential + 1	1 to 6, for each content area.

Final score for each best practice content area. The operational definition of *best-practices in training* is the sum of scores for the *frequency of training* multiplied by the *duration of training* multiplied by *method of training* in each of 16 content areas.

$$BPT_{wcontentname} = Content * Frequency * Duration * Methodsum$$

I weighted content in accordance with the frequency of use, duration of use, and method. A synergistic fit exists between content, frequency, duration, and methods for best-practices (Arthur, Bennett, Edens, & Bell, 2003). That is, multiplication of content by frequency by duration by method makes logical sense for obtaining a score to indicate the optimal combinations of best-practices. Each content area, such as dementia, had a

final score created from the content score (1 or 0) multiplied by the frequency score (1-8) multiplied by the duration score (1-6) multiplied by the method score (1-6). After formulating a score for each content area, I used exploratory factor analysis to assist in the development of scales and composite variables that allowed me to further simplify the data before conducting multivariate analysis.

Composite variable development. Some of the 16 best-practices seem to align logically and mathematically correlate with each other and thereby reasonably formulate latent constructs of best-practice. Therefore, instead of using each of the best-practice in training values as 16 different dependent variables, I performed an exploratory factor analysis on all 16 best-practice content areas. I identified patterns of loading that allowed me to reduce the number of variables by creating new indices. Table 13 displays the results of the factor analysis. Both the first factor (eigen value = 4.77) and second factor (eigen value =1.84) are greater than one. Hamilton (1992) suggests that an eigen value of 1 is adequate for identifying factors. The scree plot, shown in Figure 4, graphically depicts the eigen values versus the factor numbers. After $y=1.84$, the line above $y=1.84$ begins to level off suggesting the end of factors with high enough loading values (Hamilton, 2006). I retained two factors based upon an eigen value greater than one and the visual representation of the values on a scree plot.

Table 13

Factor Analysis of Best-Practices in Training

Factor	Eigen value	Difference	Proportion	Cumulative
1	4.77956	2.93177	0.6833	0.6833
2	1.84779	1.25103	0.2641	0.9474
3	0.59676	0.22667	0.0853	1.0327

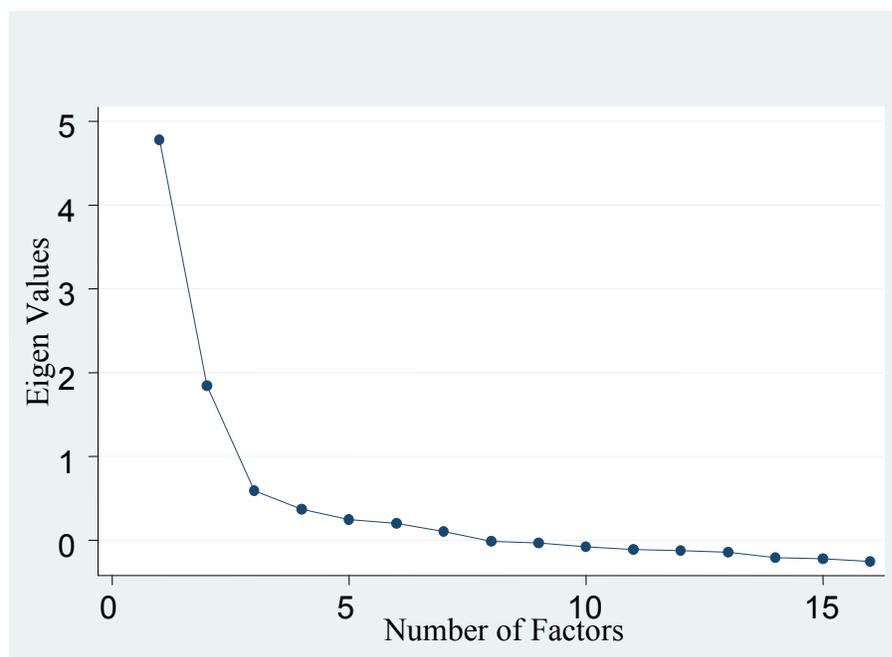


Figure 4 Scree plot of factor analysis of 16 content areas of best-practices in training.

Table 14 shows the factor loadings on the two retained variables after orthogonal rotation. Rotation allows for more interpretable factors. I chose Orthogonal Varimax rotation because the rotated loadings promote a more “simple structure” (Hamilton, 1992, p. 259). Using “Bpt” to represent “best-practices in training” and each content area to create labels for variables comprising the factors, comprised as follows: Factor 1 loads high for *Bptdementia* (.5400), *Bptdelirium* (.4147), *Bptdepression* (.4972), *Bptphysicalaging* (.8935), *Bpthealthpromotion* (.8828), and *Bptphysicalactivity* (.4763). Factor 2 loads high for *Bptmentalretardation* (.5940), *BptDownsyndrome* (.6523), *Bptautism* (.6394), *Bptcerebralpalsy* (.6266). *Bptneeddrivenbehaviors* (.2459 and .2356), *Bptsexuality* (.3323 and .2028), *Bptendoflife* (.3171 and-.2007), *Bptpersoncentered* (.3034 and.3245), and *Bptconsumer-driven* (.2055 and .2576) load equally low on both factors.

Table 14
Factor Loadings After Orthogonal Rotation

Variable	AgingBPT	DisabilityBPT
Bpt Dementia	0.54	-0.07
Bpt Delirium	0.41	0.01
Bpt Depression	0.50	0.09
Bpt Physical aging	0.89	0.01
Bpt Health promotion	0.88	0.09
Bpt Physical activity	0.48	0.15
Bpt Need driven behaviors	0.25	0.24
Bpt Sexuality	0.33	0.20
Bpt End of life	0.32	-0.20
Bpt Person centered	0.30	0.32
Bpt Consumer-driven	0.21	0.26
Bpt Mental retardation	0.15	0.59
Bpt Down syndrome	0.06	0.65
Bpt Autism	-0.05	0.64
Bpt Substance abuse	0.23	0.20
Bpt Cerebral palsy	0.06	0.63

As seen in Table 15, I completed another factor analysis, orthogonal rotation by including only the variables that loaded high on Factor 1 (*AgingBPT*) or Factor 2 (*DisabilityBPT*). Factor 1 loads high for *Bptdementia* (.52), *Bptdelirium* (.43), *Bptdepression* (.50), *Bptphysicalaging* (.89), *Bpthealthpromotion* (.88), and *Bptphysicalactivity* (.50). Factor 2 loads high for *Bptmentalretardation* (.61), *BptDownsyndrome* (.67), *Bptautism* (.63), *Bptcerebralpalsy* (.63).

Table 15
Factor Loadings After Orthogonal Rotation

Variable	AgingBPT	DisabilityBPT
Bpt Dementia	0.52	-0.07
Bpt Delirium	0.43	0.01
Bpt Depression	0.50	0.09
Bpt Physical aging	0.89	0.01
Bpt Health promotion	0.88	0.09
Bpt Physical activity	0.50	0.15
Bpt End of life	0.35	-0.20
Bpt Mental retardation	0.15	0.61
Bpt Down syndrome	0.06	0.67
Bpt Autism	-0.05	0.63
Bpt Cerebral palsy	0.06	0.63

Because five of the factors loaded low on both of agingBPT and disabilityBPT factors, I completed another factor analysis with the variables (*Bptneeddrivenbehaviors*, *Bptsexuality*, *Bptpersoncentered*, *Bptconsumer-driven*). From this factor analysis, I found one factor with an eigen value over one (1.7). Every variable loaded moderately high on the one factor. Table 16 displays the loadings for each factor, called *Universalbpt*.

Table 16
Factor Loadings: No Rotation of Universal BPT

Variable	Universal BPT
Bpt Need driven behaviors	.53
Bpt Sexuality	.57
Bpt Person centered	.65
Bpt Consumer-driven	.66
Bpt Substance abuse	.52

Aging Best-Practices in Training. Aging Best-Practices in Training (Aging BPT)

is a composite variable with the equation as follows:

$$AgingBPT = Dem_{w_{dem}} + Del_{w_{del}} + Dep_{w_{dep}} + PAA_{w_{paa}} + HP_{w_{hp}} + PA_{w_{pa}} + EoL_{w_{eol}}$$

Where:

w_{abc} = relative weighting

Dem = Dementia

Del = Delirium

Dep = Depression
PAA = Physical Aspects of Aging
HP = Health Promotion
PA = Physical Activity
EoL = End of life

I created Aging *Best-practices in Training (Aging BPT)* from the addition of best-practices in dementia, delirium, depression, physical aging, health promotion, physical activity and end-of-life. Although end-of-life did not load highly on factor 1, the content area fits theoretically into the factor and was therefore retained. The Cronbach's alpha for Aging Best-Practices is .8421, which is considered extremely internally consistent (Carmines & Zeller, 1979).

Disability Best-Practices in Training. Disability Best-Practices in Training (Disability BPT) is a composite variable with the equation as follows:

$$DisabilityBPT = MR_{w_{mr}} + ASD_{w_{asd}} + DS_{w_{ds}} + CP_{w_{cp}}$$

Where:

w_{abc} = relative weighting
 MR = Mental Retardation
 ASD = Autism Spectrum Disorder
 DS = Down syndrome
 CP = Cerebral Palsy

Disability Best-Practices in Training scores reflect several disability areas including: 1) mental retardation; 2) autism spectrum disorder; 3) Down syndrome; and 4) Cerebral Palsy. Theoretically, it makes sense that disability topics would load together. The Cronbach's alpha of the four item scale is .74 which is internally consistent (Carmines & Zeller, 1979).

$$UniversalBPT = PCC_{wpcc} + CDC_{wcdc} + SUB_{wsub} + SXT_{wsxt} + NDB_{wndb}$$

Where:

w_{abc} = relative weighting

PCC = Person-Centered Care

CDC = Consumer-Driven Care

SUB = Substance Abuse

NDB = Need-driven Behavior

Universal Best-Practices in Training. As depicted in the gray shading of Table 14, the remaining five areas shared low loadings between the two factors evenly. These content areas have a “universal” quality that apply to either aging or disability organizations including : 1) Person-Centered Care; 2) Consumer-driven Care; 3) Substance abuse; 4) Sexuality; and 5) Need-Driven Behaviors. The Cronbach’s alpha, the reliability coefficient, for the index containing these five content areas variables is .73, a value which suggests strong internal consistency of the scale (Carmines & Zeller, 1979).

Independent Variables: Structural and Cultural

The regression equation for the model is hypothesized to be:

$$Y_i (\text{agingbpt/disabilitybpt/universalbpt}) = + X_{i1} + X_{i2} + X_{i3} + X_{i4} + X_{i5} + X_{i6} + X_{i7}.$$

Where:

X_{i1} = Evaluation practices

X_{i2} = Type of Organization (*agingtype*)

X_{i3} = Percent of Public Assistance (*orgpercentma*)

X_{i4} = Organization Size

X_{i5} = Intensity of Care

X_{i6} = Input into Care

X_{i7} = Organizational Input

X_{i8} = DCW Integration

To develop the five structural and three cultural variables in the regression equation, I followed a similar process as the dependent variable. The structural variables include: Training Evaluation Procedures (*evaluation*), Type of Facility (*agingtype*),

Percent of Public Funding (*mapercent*), Organizational size (*sizeraw*), and Intensity of Care (*intensity*) measure various aspects of structural characteristics in the organization. The cultural variables include: “Input into Care Decision-Making” (*Cinput*), “Input into Organizational Decision-Making” (*orginput*) and DCW Integration (*integration*). The process of independent variable development progressed from: 1) literature review; 2) subject matter expert review; 3) factor analysis of the 20-item organizational culture scale; and 4) creation of additive variables from factors with high loadings. At each point in the process, I grounded my decisions in the conceptual literature, logic, and 25 years of experience in an SPO.

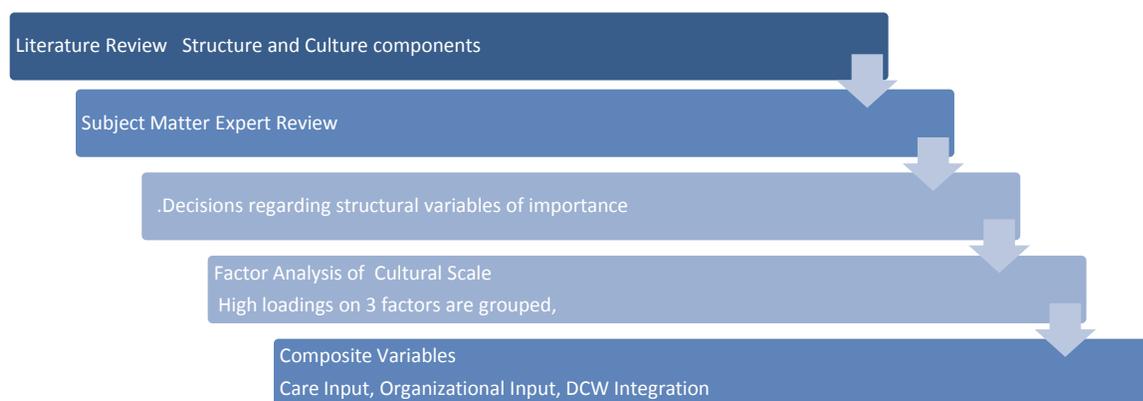


Figure 5 Process of independent variable development.

Developing variables through literature review. Overall, social structure and personality theory (SSP) undergirds the conceptualization of the independent variables (McLeod & Lively, 2003). This study focuses on the level of the relationship between the organizational components and the proximate, meso-level experience of training in the workplace. Organizational components, defined as an adaptive social structure, influence the psychosocial environment, affecting interactions between individuals and groups. In

turn, these interactions affect behaviors, attitudes, and feelings (House, 1981; Merton, 1957; Selznick, 1948).

Theoretical basis for structural variable development. Table 16 lists the structural characteristics in the organization that have been shown to influence DCW's individual-level outcomes, such as stress and job satisfaction: 1) the type of organization (Kane et al., 2007); 2) the percent of public assistance in the payer mix; 3) organization size (Blau & Schoenherr, 1971; Felce et al., 2005; Weber, 1946); and 4) intensity of care (Zimmerman et al., 2005). I defined intensity of care as the percent of client characteristics, in an organization such as age, ambulatory status, mobility, and cognitive status.

Table 17

Findings from Literature Review: Independent Variables

Independent Variable	Findings
Evaluation	Multiple levels of evaluation produce better staff development outcomes Kirkpatrick & Kirkpatrick (2006)
Organization Type	The type of the organization may impact staff outcomes (Kane et al. 2007)
Percent of Public Assistance	Organizations with a higher percentage of public assistance in payer mix have less financial resources as medical assistance pays less per diem
Organization Size	As size increases, differentiation increases (as does complexity for managers) (Blau & Schoenherr, 1971; Weber, 1946)
Intensity of Care	As level of intensity of client needs increases, DCW stress increases (Zimmerman et al., 2005)

Statistical variable development for structural variables. Tables 18-22 highlight in detail the operationalization of each structural variable, including: 1) Evaluation level; 2) Organization type; 3) Intensity of care; 4) Size; and 5) Percent public funding. Table 18 list all variables and the equations used to create each variable.

Table 18 <i>Structural Variables Operationalized</i>	
Independent Variable	Composite Parts
Evaluation	Evaluation = $Attend_{wattend} + React_{wsumreact} + Know_{wsumknow} + Observe_{wsumobs} + COut_{wsumout} + OOut_{wsumoout}$
Organization Type	Agingtype = Assist + Home + Adult + Skilled
Percent of Public Assistance	Mapercent = $(MA + MW + SSI) / Total$
Organization Size	Sizeraw = Full + .5* Part-time
Intensity of Care	Intensity = $(NoDD85 + DD60 + NAMB + BED + DEM) / Total$

Evaluation of DCW Training. The equation that describes the composite variable, *evaluation* follows:

$$\text{Evaluation} = Attend_{wattend} + React_{wsumreact} + Know_{wsumknow} + Observe_{wsumobs} + COut_{wsumout} + OOut_{wsumoout}$$

Where:

$$\begin{aligned} Attend_{wattend} &= 1 * \# \text{ of organizations checked "Attendance at training"} \\ React_{wsumreact} &= 1 * \# \text{ of organizations checked "Reaction/satisfaction questions"} \\ Know_{wsumknow} &= 2 * \# \text{ of organizations checked "Knowledge testing"} \\ Observe_{wsumobs} &= 2 * \# \text{ of organizations checked "Observation of behaviors on the job"} \\ COut_{wsumout} &= 3 * \# \text{ of organizations checked "Measuring outcomes clients/residents"} \\ OOut_{wsumoout} &= 3 * \# \text{ of organizations checked "Measuring organizational outcomes"} \end{aligned}$$

Composite variable evaluation. A quality evaluation process involves more than checking DCW attendance and asking DCWs about their reaction to a training experience; it requires more intensive levels of evaluation that measure staff behavioral change, client/resident outcomes, and/or organizational outcomes (Kirkpatrick & Kirkpatrick, 2006). In this study, I measure evaluation of DCW training by asking, "How does your organization evaluate the effectiveness of training of direct care workers? Please check all those that apply" in regard to six different evaluation methods of "Attendance at training," "Knowledge testing," "Reaction/opinion/satisfaction questions

at the end of training,” “Observation and assessment of behaviors on the job,” “Measuring outcomes for clients/residents/consumers,” and “Measuring organizational outcomes (such as staff satisfaction and turnover). I list the range and missing values for each measure in Table 19. Each method has a separate blank with categories for checking. The evaluation methods are: “attendance at training” (coded 1), “knowledge testing” (coded 2), “reaction/opinion/satisfaction questions at the end of training” (coded 1), “observation and assessment of behaviors on the job” (coded 2), “measuring outcomes for residents/clients/consumers” (coded 3), and “measuring organizational outcomes” (coded 3). No missing data existed since any empty blank was coded (0).

Table 19
Measures Comprising Structural Predictor Variable, Evaluation

Measurement	Range	Missing % of Values	
Response to, “How does your organization evaluate the effectiveness of training of direct care workers?” Coded such that more intensive evaluation receives a higher ranking.	0 to 12		
“Attendance at training”(1)	0 to 1	0	0%
“Reaction/opinion/satisfaction questions at the end of training”(1)	0 to 1	0	0%
“Knowledge testing”(2)	0 to 2	0	0%
“Observation and assessment of behaviors on the job”(2)	0 to 2	0	0%
“Measuring outcomes for clients/residents/consumers” (3)	0 to 3	0	0%
“Measuring organizational outcomes (such as staff satisfaction and turnover)” (3)	0 to 3	0	0%

Type of service provider organization. The equation for the type of service provider organization follows:

$$\text{Agingtype} = \text{Assist} + \text{Home} + \text{Adult} + \text{Skilled}$$

Where:

Assist = 1 if organization checked “Assisted Living”

Home = 1 if organization checked “Home Health”

Adult = 1 if organization checked “Adult Day Care”

Skilled = 1 if organization checked “Skilled Nursing Home”

Dichotomous variable agingtype. Table 20, underscores the specifics of developing *agingtype*. I measured the network of the facility (*type*) by asking the SROs to identify their type of facility from a list of ten types based on the licenses for SROs in Pennsylvania: “personal care home,” “assisted living,” “home health care,” “adult day care,” “residential care/group home,” “vocational rehabilitation,” “day training program,” “intermediate care facility,” “skilled nursing home,” and “other”. I divided the organizations into *aging network type* facilities supported/regulated by the state’s Department of Aging and *disability network type facility* supported/regulated by the Office on Developmental Programs within the state’s Department of Public Welfare. I coded *agingtype* as a dichotomous variable, where “1” denotes that the respondent checked one of these organizations: 1) assisted living; 2) adult day care; 3) skilled nursing home; and 4) home health. I coded *agingtype* “0,” where disability network organizations include: 1) “personal care homes,” 2) “adult day training,” 3) “vocational rehabilitation,” 4) “residential care” and 5) “intermediate care facility. No missing data existed on these measures, but a few organizations (n =5) listed more than one. In this case, I made a decision based upon the other information in the survey such as size, type of services, and payer mix.

Table 20
Measures Comprising Structural Predictor Variable, Type (agingtype)

<u>Item</u>	<u>Measurement</u>	<u>Range</u>
Type of Organization (<i>Agingtype</i>)	<p>Response to, “Please indicate the best description of your organization? Please check only one.” to identify the type of facility through which they provide services from a list of ten types, Type will be coded based upon whether they are funded through Department on Aging (1) or Department on Public Welfare (0) as funding streams separate aging and disability networks:</p> <p>“personal care home” (0) “assisted living” (1) “home health care” (1) “adult day care” (1) “residential care/group home” (0) “vocational rehabilitation” (0) “day training program” (0) “intermediate care facility” (0) “skilled nursing home” (1)</p>	0 or 1 Dichotomous Variable

Percent of public funding for client care. I used the following equations to compute mapercent :

$$\text{Mapercent} = (MA + MW + SSI) / \text{Total}$$

Where:

MA = # of clients/residents with medical assistance as primary payment mechanism

MW = # of clients/residents with Medicaid waiver as primary payment mechanism

SSI = # of clients/residents with SSI as primary payment mechanism

Total = total # of clients/residents served by the organization

Categorizing Ordinal variable Ordpercent. Table 21 highlights the process for developing mapercent and ordpercent. Organizations were asked, “Please list the number of residents/clients/consumers by primary payment mechanism:” for six payer categories

including “Private pay,” “Medicare,” “Medical Assistance,” “Medicaid Waiver,” “SSI,” and “Private Insurance” with an open-ended response category in order to determine the number of clients/residents in each category. As seen in Table 21, the missing value percentage is 8% for this question. First, I added each of the public assistance categories. Next, I divided by the *total number of clients/residents* to create *mapercent* ($mapercent = (\# \text{ Medical assistance} + \# \text{ Medicaid waiver} + \# \text{ SSI}) / \text{total\# of clients, consumers, and residents served}$). *Mapercent* reflects the proportion of clients whose fees are paid by some form of public assistance program. Therefore, the higher the *mapercent*, the higher the dependence on public funding for financial resources. I created an ordinal variable called *ordpercent* from the raw data because *mapercent* had many low values and an extremely non-normal distribution. I assigned an ordinal value to each percentile of *mapercent* in order to define *ordpercent*. Table 21 lists the number in each category established by percentiles.

Table 21
Measures Comprising Structural Predictor Variable, Percent of Public Assistance

Item	Measurement	Range	Missing Values	% Total
Public Assistance	MA = # of clients/residents with medical assistance as primary payment mechanism		29	8.8%
	MW = # of clients/residents with Medicaid waiver as primary payment mechanism		29	8.8%
	SSI = # of clients/residents with SSI as primary payment mechanism		29	8.8%
Total Served	Total = # of total clients/residents served by organization	0 to 400	0	0%
Mapercent	(MA + MW + SSI)/Total	0 to 3.5		

		0 to 6
		0 n = 55 (16.77%)
		1 n = 40 (12.20%)
	Mapercent <=0 (code 0)	
	Mapercent >0 or mapercent <.25 (1)	2 n = 39 (11.89%)
	Mapercent >=.25 & mapercent <=.50(2)	3 n = 55 (16.77%)
Ord-	Mapercent >.50 & mapercent <=.75 (3)	4 n = 39 (11.89%)
Percent	Mapercent >.75 & mapercent <=.95 (4)	5 n = 17 (5.18%)
	Mapercent >.95 & mapercent <=.9999(5)	6 n = 83 (25.30%)
	Mapercent >.9999 (6)	

Organization size. I used the following equations to compute organization size:

$$\text{Sizeraw} = \text{Full} + .5 * \text{Part-time}$$

Where:

Full = # of full-time DCWs who work for the organization

Part-Time = # of part-time DCWs who work for the organization

Composite variable sizeraw. Table 22 below shows the measurement and the range of *sizeraw*. First, I measure organization size (*size*) by asking “How many direct care workers does your organization/agency/facility employ?” with two open-ended response blanks, one for full-time DCWs and one for part-time DCWs. The responses are interval level data. To determine a numerical value for *sizeraw*, I added the number of DCWs employed full-time to .5 times the number of workers employed part-time. Missing values are low (less than 3%).

Table 22
Measures Comprising Structural Predictor Variable, Size

<u>Item</u>	<u>Measurement</u>	<u>Range</u>	<u>Missing % of Values Total</u>	
Organization size (Sizeraw)	Response to, “How many direct care workers does your organization/agency/facility employ?” with two open-ended response blanks	.5 to 451		
	Full-Time Direct Care Workers (DCW)		9	2.7%
	Part-Time Direct Care Workers (DCW)		6	1.8%

Intensity of client care needs. I used the following equations to compute intensity of care needs:

$$\text{Intensity} = (\text{NoDD85} + \text{DD60} + \text{NAMB} + \text{BED} + \text{DEM}) / \text{Total}$$

Where:

Intensity = the level of care that requires physical or emotional labor

NoDD85 = total amount of clients/residents without DD over 85 (old old)

DD60 = total amount of clients/residents with DD over 60

NAMB = Total amount of clients/residents who are non-ambulatory

BED = Total amount of clients/residents who are bedfast

DEM = Total amount of clients/residents who have dementia

Total = Total amount of clients served

Composite variable intensity. I measure intensity of client care needs (intensity), a function of the organization’s structure in regard to whom it serves, by asking “Of the residents/clients/ consumers indentified above, please list the number of” “individuals who do not have a developmental disability over 85,” “individuals with a developmental disability over age 60,” “individuals who are non-ambulatory, with or without assistive device,” “individuals who do not leave the bed for more than an hour a day,” and “individuals who have a diagnosis of dementia,” and indicating that “a person can be

counted in more than one category” for the five characteristics above. All of these responses are interval level data. Table 23 lists the measures comprising *Intensity*, the range, and the missing values for each item. None of the missing value percent is over 3% which is fairly small.

Table 23
Measures Comprising Structural Predictor Variable, Intensity

Item	Measurement	Range	Missing % of Values	
Intensity	Response to, “Of the residents/clients/consumers indentified above, please list the number of” and by indicating that “a person can be counted in more than one category” for five characteristics including:	0 to 3.5 clients in multiple categories		
NoDD85	“individuals who do not have a developmental disability over 85” (code #)	0 to 272	10	3%
DD60	“individuals with a developmental disability over age 60” (code #)	0 to 370	13	3%
NAMB	“individuals who are non-ambulatory, with or without assistive device” (code #)	0 to 320	13	3%
BED	“individuals who do not leave the bed for more than an hour a day” (code #)	0 to 71	13	3%
DEM	“individuals who have dementia diagnosis” (code #)	0 to 320	13	3%
Total	Total amount of clients served	0 to 400	0	0%

As discussed in Chapter 2, a higher intensity of care may impact training since it heightens stress and creates problems with coverage during training (Bishop et al., 2009). I adapted these items from the Zimmerman et al. (2005) study of DCWs in Aging service

provider organizations. In order to determine complexity of care tasks, Zimmerman et al. (2005), gathered data on the number of 1) individuals 85 years or older, 2) bedfast residents, 3) chairfast residents, 4) individuals with dementia. I added the category of individuals with a developmental disability over 60. Due to an accelerated aging process, sixty years old becomes the cut-off to define “old age” in individuals with developmental disabilities (Davidson, Heller, Janicki, & Hyer, 2004; Stydom, Hasiotis, King, & Livingston, 2009). I adapted the categories of “bedfast” and “chairfast” in order to use person-first language and to specifically explain to the respondents what the term meant. To measure intensity as part of structural complexity, I added the number from each category together to get a total number of residents/clients with a more intense need (e.g., *Intense* = (total without DD over 85 + total with DD over 60 + total non-ambulatory + total bedfast + total with dementia) divided by the total number of residents or clients.

Theoretical basis for the development of the organizational culture variables.

Before explaining the statistical variable development for cultural variables, I will first provide a summary of the theoretical concepts underlying variable development. For the purpose of this study, the cultural components of service provider organizations consist of beliefs and values, such as those pertaining to the norms and the importance of DCWs within the organization. The theoretical frameworks for specific beliefs and values that may influence training practices as a proximal variable includes: 1) administration’s perspective on DCW decision-making and input (Likert, 1967; Follett, 2005; Pfeffer, 2005; Schein, 1990); 2) beliefs about social roles and interactions (Gubrium, 1975; Goffman, 1963; Mead, 1934); and 3) understanding of conflict in the organization (Bourdieu, 2002; Goffman, 1963; Marx, 1975; Weber, 1946). An application of conflict

theory suggests a combination of social class relations, gender, and a lack of technical expertise may create a lack of DCW integration in the work environment (Marx, 1975; Weber, 1947; Bourdieu, 1980). Due to issues of stigma and processes in the care environment related to social identity, the differentiation of status and inequities become the norm in the DCW work environment (Goffman, 1963; Gubrium, 1975).

Scale development. Many items on this scale were adapted from Zimmerman et al. (2005) study. Zimmerman et al. (2005) amended Shaefer & Moos's (1996) measure from a seminal study on stress and work climate in nursing homes. In the two previous studies, the DCW was the unit of analysis. This research study uses the organizational level as the unit of analysis. The Stott et al. (2007) used an organization level of analysis but combined many different concepts into one construct without using factor analysis to determine latent variables. In this twenty-item scale, I used Zimmerman's concepts, separating out support-related from decision-making statements and applied it to an organizational unit of analysis.

Statistical analyses in the development of the organizational culture variables. The organizational cultural content was measured with twenty-items that ask for administration's perceptions of the frequency of behaviors about the climate of the work organization. I used exploratory factor analysis to determine latent variables.

Exploratory factor analysis. By performing an exploratory factor analysis on all 20 cultural items, I identified patterns of loading, allowing me to reduce the number of variables by creating new indexes. Table 24 lists the eigen values from the factor analysis. The scree plot, seen in Figure 5, graphically depicts the eigen values in the factor analysis. Hamilton (1992) suggests that an eigen value of 1 is adequate for

identifying factors. The first factor (eigen value = 4.37), second factor (eigen value =1.82) are above one. The third factor was very close to 1 (eigen value =.94) (Hamilton, 2006). Factor 4, with an eigen value of .82, is further away from 1. The scree plot in Figure 6 strongly suggests three factors.

Table 24
Exploratory Factor Analysis of Cultural Items

Factor	Eigen Value	Difference	Proportion	Cumulative
Factor 1	4.37848	2.55785	0.5706	0.5706
Factor 2	1.82062	0.88486	0.2373	0.8078
Factor 3	0.93577	0.11773	0.1219	0.9298
Factor 4	0.81804	0.36842	0.1066	1.0364
Factor 5	0.44962	0.05949	0.0586	1.0950

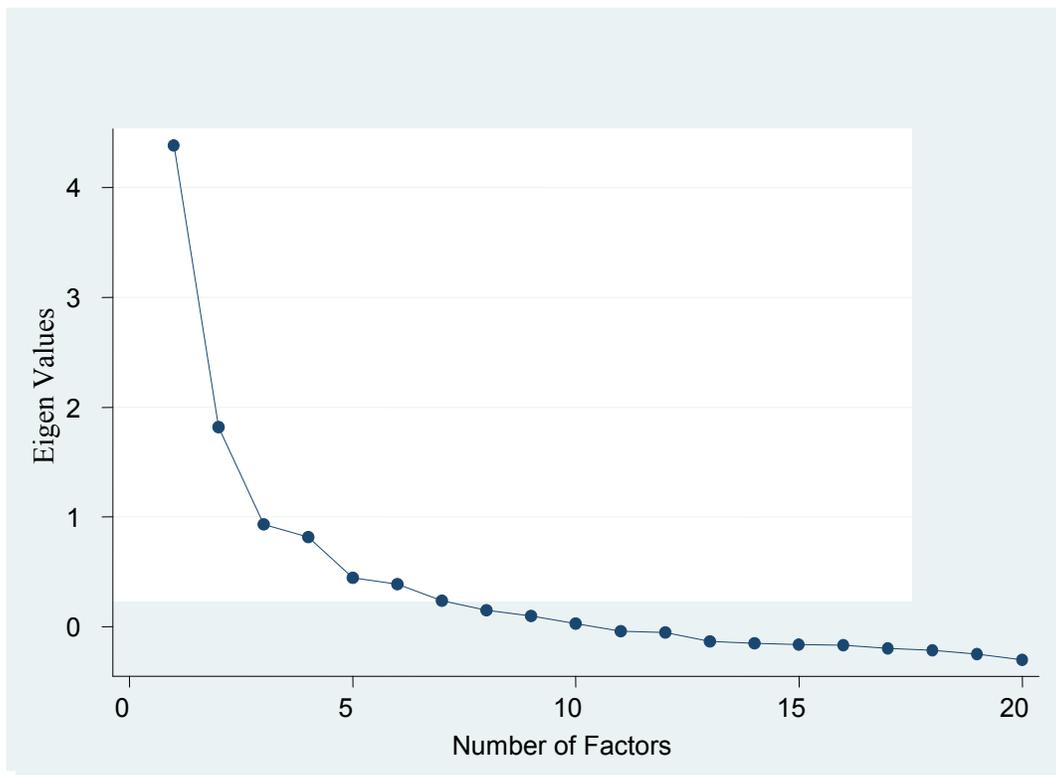


Figure 6 Scree plot after exploratory factor analysis of the 20-item culture scale.

Table 25, an orthogonal varimax rotation of the items, provided a more simple factor structure. The factor loadings suggest three items in Factor 1 which I call *care input*

(*cinput*) since those items concern direct care workers being invited to care conferences (.82), attending care conferences (.82), and speaking during care conferences (.55). The factor loadings are high on three items in Factor 2, called *organizational input* (*orginput*). These items concern being asked to participate on committees (.61), being asked for input on organizational decisions (.57), and acting if input is valued (.60). The factor loadings are also high on Factor 3, called *integration* (integration). Being reverse coded, some of the items reflect integration or the reverse of experiencing conflict with other direct care workers (.47), uncertainty about their role (.69), lack of training for specific tasks assigned (.50), conflict with supervisors (.52), and sharing about organization (.37).

Table 25

Factor Loadings after Orthogonal Rotation on 20 Cultural Items

Variable	DCW Input into Care	DCW Org Input	DCW Integration	Factor 4
Emotional support other DCW	0.18	0.26	0.20	0.06
Physical Assist other DCW	0.10	0.11	-0.05	0.05
Support angry clients	-0.14	-0.09	0.08	0.01
Do not experience conflict	-0.01	0.08	0.47	0.14
Get-along with supervisors	0.12	0.26	0.23	0.24
Sit with supervisors at break	0.17	0.21	-0.09	0.13
Do not express uncertainty	-0.01	0.03	0.69	0.12
Do not do tasks without training	0.08	0.18	0.50	0.01
Do not conflict over care issues	0.01	0.13	0.52	0.14
Supervisor's respect	0.18	0.31	0.13	0.25
Invited to care conferences	0.81	0.10	-0.04	0.04
Attend care conferences	0.82	0.09	0.04	0.05
Speak up in meetings	0.55	0.33	0.10	0.07
Input into org decision-making	0.19	0.61	0.03	0.15
Participate on org committees	0.26	0.57	0.02	0.12
DCW share about policy	-0.02	0.14	0.37	0.06
DCW act valued in decisions	0.19	0.60	0.21	0.29
Input into work schedule	0.10	0.13	0.15	0.65
Input into assignments	0.04	0.19	0.06	0.69
Supervisors ask for Input	0.15	0.25	0.11	0.25

The last factor, which has a lower eigen value (.82), shows leveling off on the scree plot. Initially, I considered retaining the fourth factor which has some moderate

factor loadings on “DCWs have input into their work schedule” (.65), and “DCWs have input into their assignments” (.69). However, I decided not to retain it after testing the reliability ($\alpha = .63$) and noticing that it consists of only two items. These two items could be considered a single item since they are identical with one word change. Gliem and Gliem (2003) suggest that variables consisting of multiple items are more valid than single item measures for two reasons: 1) measurement error averages out when individual scores are summed; 2) a single item cannot represent a concept or attribute.

Composite variable development. Based upon the factor loadings, I first tested the groups of items for internal consistency using Cronbach’s alpha test. I created composite cultural variables by adding together the items for each factor. Table 26 summarizes each of the culture variables.

Direct Care Workers’ Input Into Care. Item scores from three questions show loading on Factor 1. These questions include which include: 1) “DCWs are invited to participate in care conference/ annual review meetings,” 2) “DCWs attend care conference/annual review meetings,” and 3) “DCW speak up at the meetings.”

Theoretically, it makes sense that these items fit together since they involve participating in the care decisions regarding residents and clients. The Cronbach’s alpha reliability coefficient from the 3 items was .81 which has a high level of internal consistency (Carmines & Zeller, 1979). For all the values of the 3 items combined, only about 1.2% were missing.

Direct Care Workers’ Organizational Input. Item scores from three questions show loading on Factor 2. These questions include which include: 1) “Direct care worker’s input is considered in organizational decision-making,” 2) “Direct care workers

act if their input is valued 3) Direct care workers participate on committees to help improve the quality of the care. Theoretically, it makes sense that these items fit together to describe DCWs input into organizational decision-making. The Cronbach's alpha reliability coefficient from the 3 items was .73 which shows an adequate level of internal consistency (Carmines & Zeller, 1979). About 2% of the values were missing from these 3 items combined.

DCW Integration. Item scores from five questions show loading on Factor 3. These questions include which include: 1) "DCWs experience conflict with each other;" 2) DCW express uncertainty about their role;" 3) "DCWs do tasks in resident care without specific training;" 4) are invited to participate in care conference/ annual review meetings," 4) "DCWs conflict with supervisors over care issues;" 5) "DCW rarely have anything to share about organizational policies." Prior to adding the items, the responses to these questions were reverse coded. Theoretically, the items together suggest a measure of organizational support and role clarity. The Cronbach's alpha reliability coefficient from the 3 items was .68 which approaches internal consistency. Given that there are only 5 items, I have more confidence in internal consistency at the alpha level. For all 5 items combined, only missing values occurred in 1.6% of possible values.

Table 26
Measures Comprising Cultural Variables, Input into Care, Organizational Input, Integration

Variable	Measurement	Range	Missing Values Total	%
Input Into Care (<i>Cinput</i>)	The administration's perception of the DCW role in decision-making with clients. 1) "DCWs are invited to participate in care conference/ annual review meetings," 2) "DCWs attend care conference/annual review meetings," 3) DCW speak up at the meetings.	0 to 12	12 Out of 984	1.2 %
Organizational Input (<i>Orginput</i>)	1) "Direct care worker's input is considered in organizational decision-making," 2) "Direct care workers act if their input is valued" 3) Direct care workers participate on committees to help improve the quality of the care.	0 to 12	20 Out of 984	2%
DCW Integration (<i>Integration</i>)	1) "DCWs [do not] experience conflict with each other;" 2) "DCW express [do not] uncertainty about their role;" 3) "DCWs do [not do] tasks in resident care without specific training;" 4) "DCWs [do not] conflict with supervisors over care issues;" 5) "DCW [frequently] have [something] to share about organizational policies."	0 to 20	27 Out of 1640	1.6 %

Interaction of Cultural and Structural Variables

In order to test the third hypothesis concerning the interaction of cultural and structural variables, it will be necessary to multiply each structural variable by each cultural variable. I will create the interaction terms after evaluating the normal distribution of each variable.

The equations for these interaction terms follow:

Evalinput = evaluation * cinput

Evalintegrate = evaluation * integration

$Fininput = ordpercentma * cinput$

$Finintegration = ordpercentma * integration$

$Sizeinput = sizeraw * cinput$

$Sizeintegration = sizeraw * integration$

$Intensinput = intensity * cinput$

$Intensintegration = intensity * integration$

Analyses

Descriptive

Descriptive statistics will include characteristics of the study sample such as population served, organization type, and number of residents/clients served. Descriptive statistics will also include frequencies and means of the best-practice in training variable (combination of content, frequency, duration, method, evaluation) by organization type (aging or disability network).

Univariate Analyses

On the univariate level, I determined the distributional shape for each if the dependent variable and predictor variable. If the variable was not normally distributed, prior to including the variable in a regression model, I explored possible transformations of the variable.

Predictive Models of Best-practices in Training DCWs

I used multiple regression analysis to understand the relationship between the dependent (the extent of best-practices in training) and predictor variables (structural and cultural variables). Regression is particularly well suited for complex models with many variables. Regression uses predictor variables to improve best estimates of the dependent variable (Hamilton, 1979). With a cross-sectional design, I cannot establish cause and

effect. However, while controlling for many variables at once, I used regression modeling to determine the explained variance in the dependent variable. The main goal of variable selection is creating parsimony or simplicity of fit I also used regression criticism (Hamilton, 1992) to critique the mathematical assumptions.

Use of Qualitative Data

To deeply understand the perceptions and values of respondents about training DCWs, I analyzed responses to two open-ended questions regarding the needs and challenges of training. Service provider organization's (SPO) material resources certainly shape DCWs' work conditions and interpersonal relations. Cultural influences include patterns of beliefs or values that are communicated through socialization in the organization (Felce, Lowe, & Jones, 2002; McLeod & Lively, 2003) and might be reflected in administrators' perceptions of the value of DCWs. DCW training practices and processes would be conceptualized as proximal level influences that are part of the social experience through which the organizational structure and culture influence DCW outcomes, and consequently the outcomes of those for whom they provide care.

Challenges in training. Organizational theorists describe the variation between organizations in both internal and external environmental forces. These forces influence means of communication, conflict resolution, climate, organization commitment, and flexibility (Lawrence & Lorsch, 1967, Rosko, 1999). Administration may understand the need for best-practice training in theory, but there may be structural or cultural factors that impede the implementation or the utilization of the training. I gather more information about administration's perception of structural and cultural issues relationship with best-practices in training by asking "What are the 5 biggest challenges

in delivering training to direct care service workers at your organization (e.g., technology, financial support, training materials, time, support from supervisors)?” with open ended-response categories. I will use both the actual responses and the order of the responses (i.e., the responses written first) to better understand administration’s perception of structural/cultural issues and best-practices in training.

Needs in training. The organization’s leader or administrations’ perception of needs reflects the organizational culture (Schein, 1990). In order to interpret findings to assist in policy decision-making, a better understanding of the administration’s perceptions of DCW training needs becomes crucial. The first recommendations for policy change may require sensitizing administrators to the rationale of best practice. Or analyses may reveal a common starting point of agreement. I further identify SPO administration’s perception of needs in training DCWs by asking, “What would you say are the top 5 learning needs of the direct care workers in your organization?” with open-ended response categories. I will use both the content of the response and the order of the responses to better understand the relationship of structural/cultural issues and best-practices in training.

Qualitative Analysis

In the data collected during the Center for Rural Pennsylvania study (Mabry & Kemeny, in press), the SPOs administration representatives answered open-ended questions about needs and challenges in DCW training. To complement the statistical analysis, I conducted content analysis on the answers to the open-ended questions to gain a deeper understanding of the perceptions of the administrators about barriers and needs in training DCWs. I also analyzed these answers in regard to best-practices. Using

interpretive methods allowed me to better understand the administrations' perceptions related to structure, culture, and best-practice in training (Maxwell, 2005). In order to search for themes and threads running through the comments in light of the context, I first sorted comments by the general concept. Next, I categorized and sorted to look for emerging themes. In Chapter 4, I generated a visual summary of the reorganized quotes. I looked at patterns in the descriptive data and compared them with the thematic content. In order to validate the findings from the qualitative analysis, I triangulated the themes with the descriptive data from the survey and themes generated in an earlier study (Mabry & Kemeny, in press), an analysis of the curriculum materials returned with the survey.

Conclusion

The relationship between organizational structural and cultural variables and best-practice in training are multifaceted and complex. In this cross-sectional design, the focus concerns understanding structure, culture, and best-practices in DCW training one point in time. Because the time order necessary to establish cause and effect does not exist, I could not establish a causal model. To make predictions and understand relationships, I used a variety of techniques to handle a complex model. In order to comprehend the relationship between structural and cultural variables and best-practices in training in aging and developmental disability service provider organizations, I combine quantitative and qualitative analysis in a complementary manner to most effectively test the hypothesis and answer the research questions.

CHAPTER IV

RESULTS

The purpose of this study concerns the relationship of structural and cultural factors within service organizations and best-practices in training direct care workers. The following section describes the results of the demographic data analysis, the exploratory analysis on the univariate level, the development of transformed variables, and the multivariate regression analysis. Following the quantitative analysis, the open-ended responses to two survey questions are content analyzed in order to assist in understanding the perspective of the respondents. The research questions answered by these joint analyses include: 1) How are structural characteristics of service provider organizations related to best-practice in DCW training? 2) How are cultural characteristics of service provider organizations related to best-practice in DCW training? 3) How do the structural and cultural characteristics of service provider organizations interact to shape best-practice in DCW training?

Demographic Data Analysis

After composite variable creation, the SPSS dataset was transferred into STATA IC version 10.1 from STATA CORP LP of College Station, TX for analysis. I chose to transfer into STATA in order to have access to the graphics and tools for regression criticism. For a more complete understanding of the data, I first summarize the characteristics of the organizations in the dataset. Table 27 summarizes the respondents' answers about their organization. Of the 328 organizations, 52.7% (n=173) were located in rural counties, while the remaining 47.3% (n=155) were from urban or suburban areas. Most of the responding organizations (54.9%, n=177) were not-for-profit entities, although nearly one-third (30.1%, n=99) were for-profit, a small minority were

government-run programs (2.4%, n=8), and 13.4% (n=44) organizations did not respond to the item asking about this aspect of their organization.

Table 27
Summary of Survey Organizations

Number of Organizations	Rural	Non-Rural	Nonprofit	For-profit	Government Sector	No Sector Selected
328	173	155	177	99	8	44
	52.74%	47.25%	53.9%	30.1%	2.4%	13.4%

Tables 28 and 29 categorize the number of clients served and intensity of care needs of responding organizations. In order to better understand the organizations in the sample and the distribution by size, I broke down the numbers of clients served into categories. I classified them as extra small, small, medium, large, and extra large. The extra small group with less than five clients may have very different space and resource issues than a small or medium organization. As indicated in Table 27, very few organizations (2.74%, n=9) have less than five clients. However, almost a third (31.71%, n=104) are still relatively small. Well over a half (54.88%, n=180) have between 20 and 124 clients. More than a tenth (10.67%, n=35) exceed 125 residents/clients.

Table 28
Summary of Number and Percent of Clients Served by Organizations

Extra Small <i>Fewer than 5 Clients</i>	Small <i>5-19 Clients</i>	Medium <i>20-50 Clients</i>	Large <i>51-124</i>	Extra Large <i>Over 125</i>
9	104	94	86	35
2.74%	31.71%	28.66%	26.22%	10.67%

Table 29 lists the intensity of care categories. Intensity of care concerns the number of residents or clients who have heavier care needs and might require more physical or emotional work from the direct care worker (DCW). A small percentage of organizations (16.6%, n=53) have at least one client who is bedfast. Over 50% of the organizations report supporting clients over 85 (42.68%, n=140) and clients who are non-

ambulatory (59.15%, n=194). Organizations report very high percentages of clients over 60 with a developmental disability (68.9%, n =226) and diagnosis of dementia (72.87%, n=239).

Table 29

Percent of Organizations Serving Clients with Intense Care Needs

Clients Over 85	Clients Over 60 with Disability	Clients who are Non-ambulatory	Clients who are Bedfast	Clients with Dementia Diagnosis
42.68% (n=140)	68.9% (n=226)	59.15% (n=194)	16.16% (n=53)	72.87% (n=239)

Summary of descriptive analysis. Two important insights emerged from this analysis. First, organizations of all different sizes responded to the survey. Over one-third of the organizations have less than 20 DCWs. On the other hand, more than 35% of the organizations appear to be large or extra large in size. Second, from the intensity of care categories, I noticed that both the aging and developmental disability network share the same type of clients with intense care need. A majority of organizations (72.87%) have at least one resident/client with dementia. Since only 126 organizations are in the aging network, I determined that some of the organizations in the developmental disability network: 1) serve individuals with dementia (at least n =113); 2) have a client over 85 (at least n=14); 3) support individuals who are non-ambulatory (at least n=68). Since only 206 organizations from the disability network answered the survey, I know that some aging network organizations also have older clients with a developmental disability (at least n=20). By examining the frequencies on the univariate level, I learned that organizations in the survey include: 1) widely different sizes; 2) some crossover of intense care needs between disability and aging network organizations; and 3) serve very

few individuals confined to a bed. These findings imply that cross-over exists between the two organizations on the type of client/resident served.

Data Analysis Strategy

In order to assess the distributions and frequencies on the univariate level, I used several methods of description to learn more about the training practices of various networks. I used Ordinary Least Squares (OLS) multiple regression for the continuous dependent variable(s) and logistic regression for the dichotomous dependent variable. Grounded in the central limit theorem, Hamilton (1992) suggests that OLS regression requires the dependent variable be normally distributed for hypothesis testing. Therefore, I used various analytical methods for critiquing the assumptions of the statistical models, resulting in the best possible variable selection. As I began to interpret the quantitative analysis, I performed content analysis and utilized the responses to two open-ended questions on the survey concerning needs and challenges in training in order to better contextualize the findings from multiple regression.

Dependent Variables

Description of Best-Practice in Training

Components of best practice variable. Tables 30-33 present a descriptive list of each component part of the best-practices in training measure. I summarize the content, frequency, duration, and method responses for the aging and disability networks. Prior to completing statistical analysis on a multivariate level, I describe the particular content areas in order to gain an understanding of which particular training practices organizations use. While this exploration of the descriptive data does not answer the research question, it provides valuable information about the specific strengths and

weaknesses in training by best-practice content area. Moreover, the descriptive statistics of content, frequency, duration and method are useful in policy recommendations.

Content areas of dementia, delirium, depression, and physical aging. In Table 30, for the content areas of dementia, delirium, depression and physical aging, service providers in the aging network (PAN) consistently show higher percentage (at least 12% higher with the exception of depression content) of training than providers in the disability network (96.03% as compared to 83.66%, 66.66% compared to 39.10%, and 89.68% compared to 77.22%). Not only do PAN show higher percentages in the content of training, they also manifest higher frequency of training in these content areas. In particular, the PAN provide trainings more often in annual (49% compared to 42%), semi-annual (23% to 8%), quarterly (7.93 to .49%), and monthly (7% to 4%) increments as compared to service providers from the disability network (PDN). The PDN organizations provide more of the content at orientation.

Table 30 also shows that for these content areas, PAN have shorter sessions overall than PDN (53% compared to 45% in the shorter duration sessions) with the exception of the depression content area. Shorter sessions, characterized as less than one hour in length, more closely match the needs and desires of DCWs (Noelker & Ejaz, 2001). In the area of method, PAN more often use: 1) hands-on (34% compared to 18%, 18% compared to 8%, 21% compared to 9%); 2) interactive (34% to 18%, 22 compared to 5%, 34% compared to 25%, and 28% to 24%); or 3) reflective methods (18% compared to 11%, 18% compared to 4%, 16 compared to 12%, and 16% compared to 10%).

Table 30

Current Practices in Training by Provider Organization Network (Aging n=126 Disability n=202)

	Dementia		Delirium		Depression		Physical Aging	
	<u>Aging</u>	<u>Dis-ability</u>	<u>Aging</u>	<u>Dis-ability</u>	<u>Aging</u>	<u>Dis-ability</u>	<u>Aging</u>	<u>Dis-ability</u>
Organization Network								
Trains DCWs in the								
Content Area	96.03%	83.66%	66.66%	39.10%	90.47%	89.60%	89.68%	77.22%
<u>Frequency</u>								
Orientation Only	4.76%	7.42%	3.17%	4.45%	2.38%	5.94%	3.17%	7.43%
Biannually	.79%	2.97%	.79%	.49%	2.3%	4.45%	2.38%	2.97%
Annually	49.20%	42.57%	37.3%	22.77%	57.14%	46.03%	52.38%	42.57%
Semi-annually	23.80%	8.42%	6.34%	4.45%	11.90%	8.41%	12.69%	6.43%
Quarterly	7.93%	6.93%	7.93%	.49%	7.43%	6.34%	9.52%	3.96%
Monthly	5.55%	3.96%	5.55%	1.98%	7.43%	3.96%	3.96%	3.46%
<u>Duration</u>								
1-30 minutes	19.04%	12.87%	18.25%	11.38%	10.31%	16.83%	23.01%	17.82%
31-60 minutes	53.96%	45.04%	39.68%	16.83%	53.96%	44.55%	50.79%	35.14%
61 minutes-half day	13.49%	16.83%	4.76%	7.42%	7.93%	20.29%	11.11%	18.81%
All day	6.34%	4.45%	2.38%	.99%	1.58%	2.47%	1.58%	2.47%
More than a day	2.38%	0.49%	0%	.49%	1.58%	4.95%	0%	0%
<u>Delivery Modes</u>								
Lecture/Class	55.55%	49.00%	38.88%	20.29%	56.34%	54.55%	57.14%	50%
Hands-on	34.13%	21.28%	18.25%	8.41%	21.42%	9.30%	28.57%	19.80%
Reflective Learning	18.25%	11.88%	18.25%	4.95%	16.66%	12.37%	16.66%	10.89%
Practice at home	9.52%	5.44%	4.76%	1.98%	7.14%	7.43%	8.73%	4.95%
On-site Coaching	39.68%	29.70%	24.60%	12.87%	29.36%	33.16%	28.57%	2.47%
Interactive/Experiential	34.12%	18.31%	22.22%	5.94%	34.12%	25.24%	28.57%	24.75%
Video/DVD	59.52%	35.14%	31.74%	15.34%	44.44%	33.66%	42.06%	15.34%
Reading/Self-Taught	25.74%	39.68%	17.46%	11.38%	29.36%	28.71%	28.57%	29.20%

Content areas of health promotion, physical activity, behaviors, and sexuality.

Table 31 shows comparisons of percent of organizations' responses to questions about content, frequency, duration, and method in the areas of health promotion, physical activity, need-driven behaviors, and sexuality. In these four content areas, the Providers in the Aging Network (PAN) have a higher percent of training content than the Providers in the Disability Network (PDN). However, in contrast to the content areas in Table 30, the differences are much smaller between the two networks. For example, only 1% more of PAN provide health promotion than PDN. Approximately 8% to 10% more of PAN provide physical activity, need-driven behavior, and sexuality training. The differences in percent of training in content area are less robust than the content areas in Table 30.

Moreover, Table 31 shows comparisons in the areas of frequency of training delivery. PAN organizations conduct more annual and semi-annual trainings than PDN organizations (47% compared to 39%; 44% compared to 29%; 53% compared to 29%; and 30% compared to 16%). For health promotion, physical activity, and need-driven behaviors, PDN conduct more monthly training sessions in these content areas than do PAN (9% compared to 12%, 8% compared to 15%, and 6% compared to 12%). PAN conduct more training sessions between 31 minutes and an hour than do PDN on health promotion, physical activity, and sexuality (44% compared to 42%, 46% compared to 36%, and 22% compared to 17%). In shortest duration category (less than 31 minutes), a higher percent of PAN have shorter duration trainings for health promotion and sexuality (30% compared to 21%, 23% compared to 13%). In contrast, more PDN have shorter duration trainings for physical activity and need-driven behaviors (31% compared to 30%, and 18% compared to 12%). With regard to methods, PAN organizations utilize lecture and DVD/Videos more often than PDN organizations (53% compared to 50%, 49% compared to 38%, 54% compared to 47%, and 34% to 23%). With the exception of sexuality, PDN more often utilized hands-on, coaching and practice than PAN. For example, the hands-on or demonstration method of PDN over PAN organizations (26% compared to 21%, 48% compared to 36%, 28% compared to 26%). On the other hand, PAN more often utilized reflective and interactive techniques than PDN for the health promotion, need-driven behaviors and sexuality content areas (22% compared to 14%, 28% compared to 22%, and 11% compared to 5%).

Table 31

Current Practices in Training by Provider Organization Network (Aging, n=126, or Disability n=202)

	Health Promotion		Physical Activity		Need-Driven Behaviors		Sexuality	
	<u>Aging</u>	<u>Dis-ability</u>	<u>Aging</u>	<u>Dis-ability</u>	<u>Aging</u>	<u>Dis-ability</u>	<u>Aging</u>	<u>Dis-ability</u>
Organization Network								44.05
Trains DCWs in the								%
Content Area	88.88%	87.62%	91.26%	83.16%	90.46%	82.17%	54.76%	
<u>Frequency</u>								
Orientation Only	2.38%	5.44%	3.96%	8.41%	3.17%	11.90%	8.73%	11.38
Biannually	.79%	2.97%	3.17%	1.98%	0%	1.48%	.79%	1.48%
Annually	47.61%	39.10%	44.44%	29.20%	53.17%	29.70%	30.95%	16.83
Semi-annually	9.52%	5.94%	4.76%	5.94%	13.49%	8.42%	2.38%	2.47%
Quarterly	10.31%	12.87%	11.11%	7.92%	6.34%	10.89%	.49%	1.58%
Monthly	9.52%	12.87%	8.73%	15.34%	6.34%	12.87%	2.97%	1.58%
<u>Duration</u>								
1-30 minutes	30.15%	21.78%	30.15%	31.18%	12.69%	18.31%	23.80%	13.36
31-60 minutes	44.44%	42.07%	46.03%	36.63%	26.19%	34.15%	22.22%	17.82
61 minutes-half day	5.55%	18.31%	3.96%	10.89%	50.79%	18.31%	3.96%	7.43%
All day	1.58%	.99%	2.38%	.49%	7.14%	5.94%	1.58%	0%
More than a day	1.58%	.99%	0%	0%	1.58%	.99%	.79%	0%
<u>Delivery Modes</u>								
Lecture/Class	53.96%	50.99%	49.20%	38.61%	54.76%	47.02%	34.92%	23.26
Hands-on	21.42%	26.23%	36.63%	48.41%	26.98%	28.72%	8.73%	3.46%
Reflective Learning	11.90%	.99%	6.93%	15.07%	18.25%	13.86%	4.76%	3.46%
Practice at Home	5.55%	7.42%	3.46%	5.55%	4.76%	5.44%	2.38%	1.48%
On-site Coaching	26.19%	32.67%	32.67%	33.33%	36.13%	37.30%	15.07%	9.90%
Interactive/Experiential	22.22%	14.85%	15.34%	26.19%	28.57%	22.77%	11.90%	5.44%
Video/DVD	34.12%	27.22%	23.76%	34.92%	43.65%	33.66%	18.25%	10.89
Reading/Self-Taught	27.77%	27.22%	18.81%	26.98%	26.19%	22.27%	7.93%	10.39

Content areas of end-of-life, person-centered, consumer-driven, abuse. Table 32

lists the frequencies of the more universal topic areas of end-of-life care, person-centered care, consumer-driven care and substance abuse. With the exception of consumer-driven care, PAN organizations cover the content areas more often (73% compared to 52%, 89% compared to 86%, 41% compared to 36%). It appears that PAN organizations generally offer more sessions on an annual or semi-annual basis. On the other hand, PDN

organizations offer more sessions at “orientation” or quarterly/ monthly. With the exception of consumer-driven care, PAN organizations also have shorter duration training sessions. For example, in the less than 30 minute training sessions, noticeable differences occur between PAN and PDN (24% compared to 13%, 27% compared to 21%, 30% compared to 20%, and 20% compared to 10%). With the exception of consumer-driven care, when compared to PDN organizations, PAN organizations show higher percentage usage of all of the methods except on-site coaching. For example, depending on the topic, 5% to 20% more of PAN organizations use the classroom-lecture method than PDN organizations (49% compared to 28%, 55% compared to 47%, 42% compared to 27%, and 28% compared to 23%).

Table 32

Current Practices in Training by Provider Organization Network (Aging, n=126, or Disability n=202)

Organization Network	End of Life Care		Person-Centered Care		Consumer-Driven Care		Substance Abuse/Misuse	
	<u>Aging</u>	<u>Dis-ability</u>	<u>Aging</u>	<u>Dis-ability</u>	<u>Aging</u>	<u>Dis-ability</u>	<u>Aging</u>	<u>Dis-ability</u>
Trains DCWs in the Content Area	73.01%	52.47%	89.68%	86.13%	63.49%	69.30%	41.26%	36.63%
<u>Frequency</u>								
Orientation Only	5.55%	6.43%	10.89%	7.14%	5.55%	10.89%	4.76%	7.425%
Biannually	2.38%	1.98%	9.90%	0%	.79%	.49%	4.95%	1.485%
Annually	40.47%	23.26%	40.47%	31.68%	33.53%	26.73%	29.36%	16.83%
Semi-annually	7.14%	2.47%	1.34%	2.97%	3.96%	3.46%	.79%	2.47%
Quarterly	4.76%	5.44%	12.69%	10.39%	6.34%	7.92%	2.38%	2.47%
Monthly	3.2%	5.44%	9.52%	16.83%	7.93%	10.89%	1.58%	1.98%
<u>Duration</u>								
1-30 minutes	24.60%	13.86%	27.77%	21.78%	30.15%	20.79%	20.63%	10.89%
31-60 minutes	38.88%	23.76%	45.23%	36.13%	25.39%	27.79%	15.87%	15.34%
61 minutes-half day	3.96%	9.41%	4.76%	13.36%	5.55%	11.88%	3.96%	6.43%
All day	1.58%	1.98%	3.96%	3.96%	.79%	.99%	0%	1.98%
More than a day	0%	0%	3.17%	.99%	0%	.99%	0%	0%
<u>Delivery Modes</u>								
Lecture/Class	49.20%	28.71%	55.55%	47.5%	42.06%	37.62%	28.57%	23.76%
Hands-on	10.31%	8.42%	24.60%	20.79%	11.11%	13.36%	6.34%	5.94%
Reflective Learning	9.52%	8.41%	19.84%	11.88%	6.34%	10.89%	5.55%	4.45%
Practice at Home	4.76%	2.47%	5.55%	5.94%	4.70%	3.46%	3.96%	1.98%
On-site Coaching	14.28%	19.80%	34.92%	39.60%	25.39%	24.25%	8.73%	9.40%
Interactive/Experiential	19.04%	8.91%	25.39%	20.29%	14.28%	12.87%	8.73%	4.95%

Video/DVD	23.80%	12.37%	34.12%	19.30%	18.25%	15.84%	12.69%	6.43%
Reading/Self-Taught	15.07%	13.33%	26.98%	23.76%	13.49%	15.35%	12.69%	9.9%

Content areas of developmental disabilities. Table 33 displays current practices in training for the content areas of Down syndrome, autism, cerebral palsy, and mental retardation. As expected for these content areas, Providers in Disability Network (PDN) report higher percentages of training in these developmental disability specific content areas (33% compared to 29%, 34% compared to 23%, 27% compared to 24%, and 76% compared to 57%). The frequency of the content areas follows the same pattern seen above with PAN organizations reporting more annual trainings and PDN reporting more orientation only and monthly trainings. With the exception of the Down syndrome content area, PAN organizations more often provide shorter duration trainings of 30 minutes or less (7% compared to 3%, 7% compared to 5%, and 9% compared to 6%). PDN organizations more often conduct longer duration trainings over an hour (8% compared to 3%, 11% compared to 4%, and 6% compared to 3%). In contrast to all the other content areas, PDN organizations conduct more classroom/lectures for these topics than PAN organizations (21% compared to 17%, 24 compared to 15%, 18% compared to 17%, 47% compared to 31%). With the mental retardation content area, more PDN than PAN organizations provide self-taught learning modules (27% compared to 22%).

Table 33

Current Practices in Training by Provider Organization Network (Aging, n=126, or Disability n=202)

	Down syndrome		Autism		Cerebral Palsy		Mental Retardation	
	<u>Aging</u>	<u>Dis-ability</u>	<u>Aging</u>	<u>Dis-ability</u>	<u>Aging</u>	<u>Dis-ability</u>	<u>Aging</u>	<u>Dis-ability</u>
Organization Network Trains DCWs in the Content Area	29.36%	33.66%	23.80%	34.16%	24.60%	27.72%	57.13%	76.73%
<u>Frequency</u>								
Orientation Only	3.17%	14.35%	.79%	2.97%	.79%	6.9%	3.17%	14.35%
Biannually	3.17%	.99%	.79%	.99%	2.38%	1.98%	3.17%	.99%

Annually	32.53%	34.15%	15.87%	12.37%	13.49%	8.91%	32.53%	34.15%
Semi-annually	3.17%	4.95%	0%	4.45%	0%	.99%	3.17%	4.95%
Quarterly	7.92%	11.90%	0%	2.97%	0%	.49%	3.96%	7.92%
Monthly	2.3%	8.91%	1.58%	3.46%	7.9%	.49%	2.3%	8.91%
<u>Duration</u>								
1-30 minutes	6.43%	9.52%	7.93%	3.96%	7.14%	5.9%	9.52%	6.43%
31-60 minutes	14.28%	12.87%	10.31%	11.38%	11.90%	11.88%	14.28%	12.87%
61 minutes-half day	3.17%	8.91%	4.76%	11.88%	3.96%	6.43%	14.28%	12.87%
All day	.79%	1.48%	0%	2.47%	0%	0%	2.38%	8.9%
More than a day	.79%	.50%	.79%	0%	0%	0%	0%	2.38%
<u>Delivery Modes</u>								
Lecture/Class	17.46%	21.78%	15.87%	24.25%	17.46%	18.31%	31.74%	47.52%
Hands-on	4.76%	3.46%	4.95%	3.97%	3.96%	3.46%	16.66%	16.33%
Reflective Learning	1.58%	4.45%	4.76%	3.96%	5.55%	2.47%	11.11%	11.36%
Practice at Home	2.38%	.99%	1.58%	.99%	1.58%	.99%	5.55%	5.54%
On-site Coaching	11.11%	9.40%	7.93%	11.88%	6.34%	7.92%	25.19%	27.72%
Interactive/Experiential	7.14%	6.93%	7.93%	7.92%	5.55%	3.46%	15.07%	16.33%
Video/DVD	11.90%	11.88%	14.28%	15.34%	7.93%	8.41%	24.60%	26.73%
Reading/Self-Taught	7.9%	8.91%	8.7%	8.91%	7.93%	4.95%	22.22%	27.72%

Composite Best-Practice in Training Measures. As described in the methods section, I multiplied the organizations' responses to questions on frequency, duration, and method for each of the 16 best-practices in training content to create 16 best-practices in training measures called *BPTDementia*, *BPTDelirium*, *BPTDepression*, *BPTPhysical*, *BPTHealthpromo*, *BPTphysicalact*, *BPTendoflife*, *BPTneed-driven*, *BPTsexuality*, *BPTperson-centered*, *BPTconsumer-driven*, *BPTmr*, *BPTautism*, *BPTcp*, and *BPTdownsyndrome*. Table 34 displays the mean, standard deviation, and range of each best-practice content area. The highest mean scores for best-practices appear in the PAN including: 1) *Dementiabpt* (127.82 units); 2) *personcenteredbpt* (120.07units); 3) *need-driven behaviorsbpt* (119.48 units); 4) *Physicalagingbpt* (118.86 units); and 5) *Depressionbpt* (115.74 units). Disability networks have relatively high mean best-practice scores on *Physicalactivitybpt* (107.92), *Personcenteredbpt* (106.01), *Needdrivenbehaviorsbpt* (105.61units), and *Depressionbpt* (103.80 units). The PDN appear to have rather low best-practice scores on the disability topic areas focused on

diagnosis (*mentalretardbpt* = 86.98, *Downsyndromebpt* = 30.44 units, *Autismbpt* = 34.69 units, and *Cerebralpalsybpt* = 19.48 units).

Table 34

The Mean, Standard Deviation, and Range for Each BPT variable by Network

Content Area	Mean		Standard Deviation		Range	
	Aging	Disability	Aging	Disability	Aging	Disability
Dementia	127.82	92.01	63.26	69.80	0 to 336	0 to 360
Delirium	90.03	42.76	84.37	62.01	0 to 336	0 to 245
Depression	115.74	103.80	66.98	68.67	0 to 336	0 to 336
Physical Aspects of Aging	118.86	82.99	70.44	65.47	0 to 336	0 to 252
Health Promotion	113.41	80.74	73.77	63.73	0 to 336	0 to 252
Physical Activity	120.32	107.92	84.84	85.75	0 to 336	0 to 378
End-of-Life Care	86.25	59.15	77.88	77.38	0 to 378	0 to 378
Need-Driven Behaviors	119.48	105.61	72.16	86.22	0 to 315	0 to 378
Sexuality	56.23	37.99	67.50	57.03	0 to 280	0 to 252
Person-centered Model	120.07	106.01	82.97	86.27	0 to 315	0 to 378
Consumer-Driven Model	88.40	83	89.45	85.85	0 to 378	0 to 420
Mental Retardation	63.65	86.98	73.58	74.00	0 to 336	0 to 378
Down syndrome	32.30	30.44	59.34	55.46	0 to 270	0 to 294
Autism	25.46	34.69	55.20	66.58	0 to 336	0 to 378
Cerebral Palsy	23.06	19.48	50.29	40.86	0 to 294	0 to 210
Substance Abuse	49.82	36.94	68.54	58.66	0 to 270	0 to 252

Summary of description of dependent variables. In summary, I created frequency tables separated by content area. From the descriptive data, the frequencies of the self-report items do not show a consistent use of best-practices by either aging or disability networks. In general, aging network organizations have shorter duration training that uses reflective and interactive techniques for shorter periods. Disability networks more often use hands-on and coaching practice techniques for longer periods. The frequencies for best-practices are higher for aging network providers in some content areas and lower in other content areas.

The content area and the type of topic may play a role in whether aging network or Disability network uses best-practices. Based upon the frequencies, in general, aging network organizations use best-practices more often with physical health content area (physical aging, delirium, dementia, health promotion). Providers in disability networks have their highest mean best-practice scores in behavioral health (depression, behaviors). Disability networks generally show best-practices in their training with behavioral health content areas (depression, need-driven behavior). Overall, disability network organizations appear to use more hands-on demonstrations, but aging network organizations use reflection and interactive methods in trainings. Both networks have higher best-practice scores in physical activity. Description of the frequencies of best-practices provides some insight into the ways that the two networks differ. Moreover, these descriptions may provide a starting point for further inquiry into the differences between the two networks or find commonalities between the two networks.

Exploratory data analysis on univariate level

Exploring distributions. Prior to analysis on the multivariate level, I described each composite variable on the univariate level to better understand the distribution (Tukey, 1977). An underlying assumption of Ordinary Least Squares regression is that sample data come from a normally distributed population. Even if statistics do not assume normality, many statistical processes work better when applied to a normal distribution (Hamilton, 1992). I use exploratory data techniques to detect and to cope with problematic data (Hamilton, 1992) for relying solely on measures of the mean and standard deviation may be poor indicators of nonnormal distributions.

Non-Normal Distribution of the Dependent Variables. Hamilton (1992)

indicates that multivariate analysis, depending on the mean, requires a near normal distribution of the variables. Power transformations of the variable to change distributional shape (Hamilton, 1992) often reduce skew. As detailed for each variable below, I determined the appropriate power by generating histograms of the transformed distributions of various powers (Tukey, 1977).

Aging Best-Practices in Training. Figure 7 shows various perspectives on the distribution of *Aging BPT*. On the top left, the histogram of the raw data suggests a positive skew. On the top right, the boxplot of *agingBPT* also suggests a positive skew and outliers. The symmetry plot, bottom left, and the quantile normal plot, bottom right, also confirm a positive skew. A skewed distribution suggests that the mean or “center” of the data is “ambiguous” (Hamilton, 1992, p. 6).

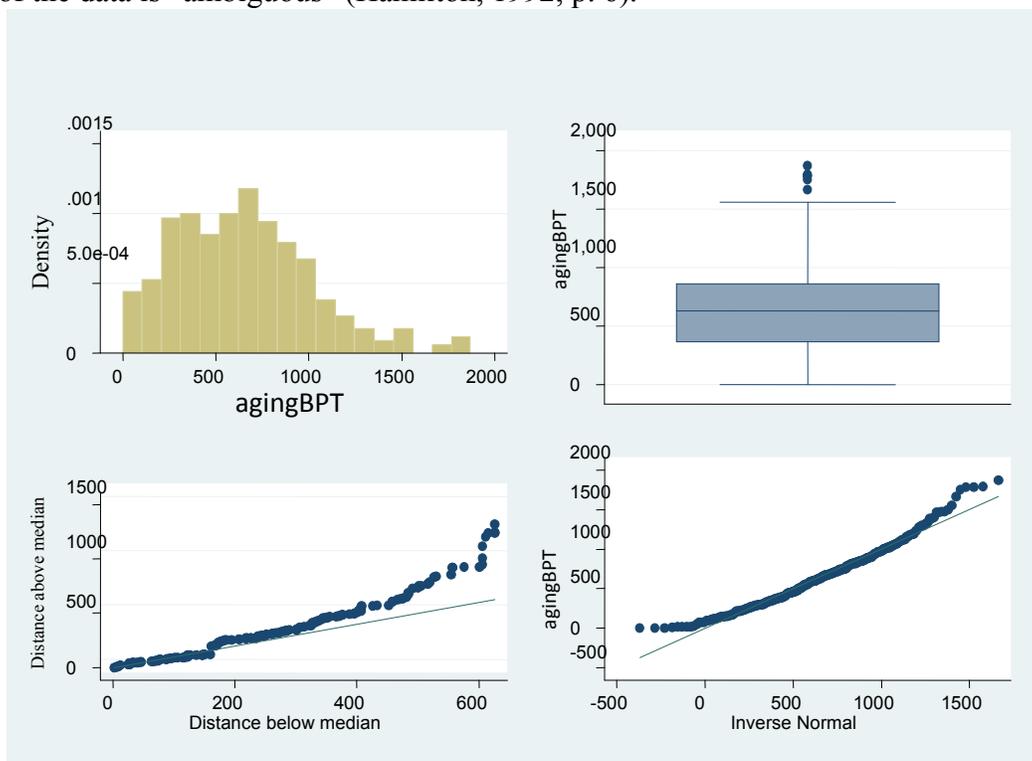


Figure 7 Four views of the distribution of aging best-practices in training, *agingBPT*.

Transformed Aging Best-Practices in training. By interpreting the graphic display of the transformations, I determined that a $q = .6$ power transformation (between the identity and the square root of the variable) would create a distribution that better approximates a normal distribution for *AgingBPT*. A new variable, *sqrtagingbpt6* was generated by calculating the exponent of *AgingBPT* to the .6 power ($\text{sqrtagingbpt6} = \text{agingbpt}^{.6}$). Figure 8 displays Aging Best-Practices in Training after transformation. A histogram, in the top left, shows a distributional shape that appears closer to normal. The boxplot, in the top right, also suggests less skew. The symmetry plot, in bottom left, shows a distributional line that fits the symmetry line much better. Moreover, the quantile normal plot, in the bottom right, shows no skew.

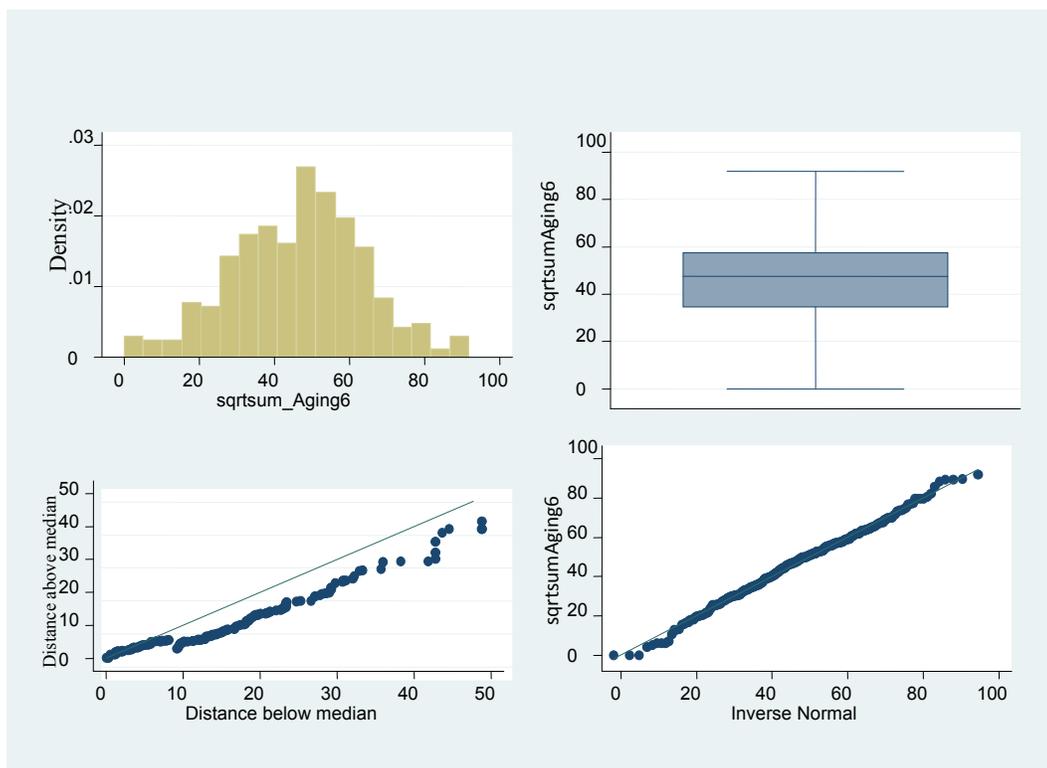


Figure 8 Transformation of aging best-practices in training, *sqrtsumaging6*.

Disability Best-Practices in training. Figure 9 displays the distribution of Disability Best-Practices in training. The histogram, in the top left of Figure 9, indicates an extremely positive skew of the distribution. In the top right, the boxplot confirms the positive skew with outliers. Moreover, the symmetry plot, bottom left, and the quantile normal plot, bottom right, suggest that there are major irregularities in the distribution.

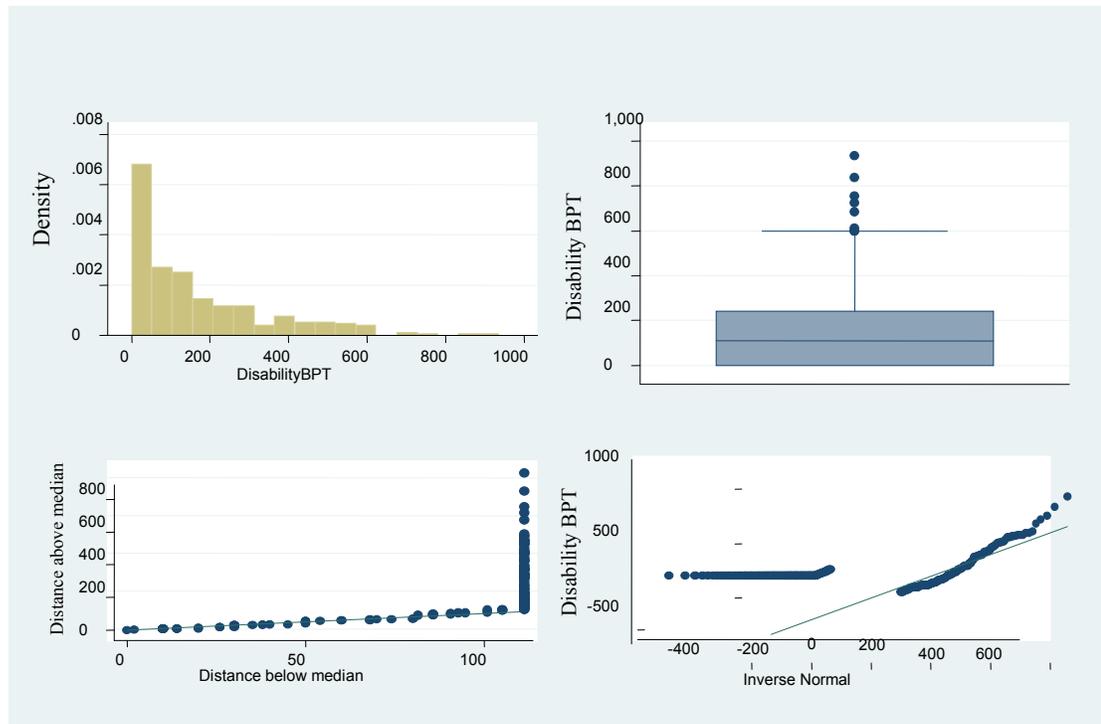


Figure 9 Four views of the distribution of disability best-practices in training, *disabilityBPT*.

Transformed Disability Best-Practices in training. In order to better visualize which power transformation appears the most appropriate for Disability Best-Practices in Training (*Disability BPT*), I combined graphs of possible transformations of $q = .1, .2, .3,$ and $.4$. I determined that a $q = .3$ power transformation (between square root and the log) would create a distribution that better approximates a normal distribution for *DisabilityBPT*. I generated a transformed variable, *logdisability*, by calculating the exponent of *disabilitybpt* plus one to the $.3$ power. Although the histogram in the left

upper corner of Figure 10 suggests that *logdisability3* more closely approximates a normal distribution, I noted an obvious lack of symmetry in the distribution related to the large number of values at one. The raw data, calculated before one was added for power transformations, suggests that 94 out of the 328 organizations have a zero value for *disabilitybpt*. With the large amount of values at zero, I am not able to transform the variable into a near-normal distribution. The other three graphs confirm these problems. The boxplot, in the upper right corner of Figure 10, suggests that the distribution remains positively skewed. In the bottom of Figure 10, the symmetry and quantile plots indicate further problems with the distribution. In addition to being skewed, a central gap appears in the quantile –normal plot indicating irregular data density in certain areas. This variable may present problems in the multivariate analyses. Therefore, I will look carefully at this model.

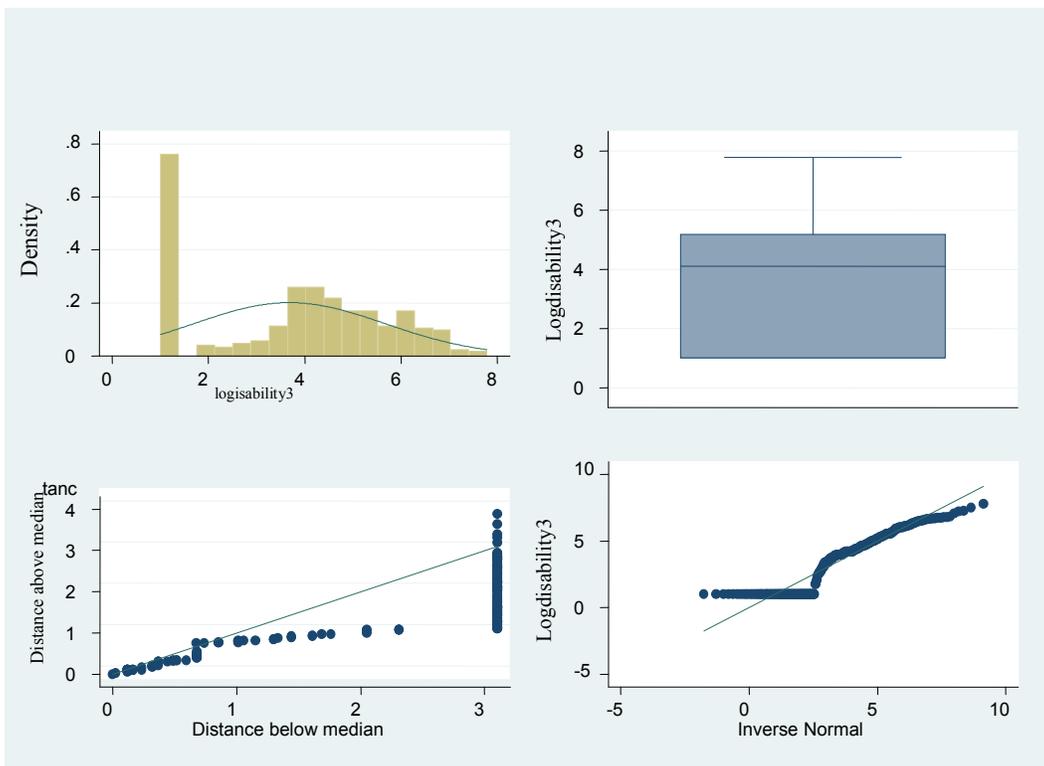


Figure 10 Transformation of disability best-practices in training, *logdisability3*.

Universal Best-Practices in training. Figure 11 depicts the variable, *universalBPT*, with graphs showing the distributional shape. In the top left, Figure 11 portrays the histogram of Universal Best-Practices in training as positively skewed. The boxplot, in the top right corner, suggests a positive skew with outliers. In the lower left corner of Figure 11, the symmetry plot has quite a few off-line points indicating asymmetry. The quantile-normal plot, in the lower right corner, suggests a divergence on both ends, indicating positive skew and high outliers (Hamilton, 1992).

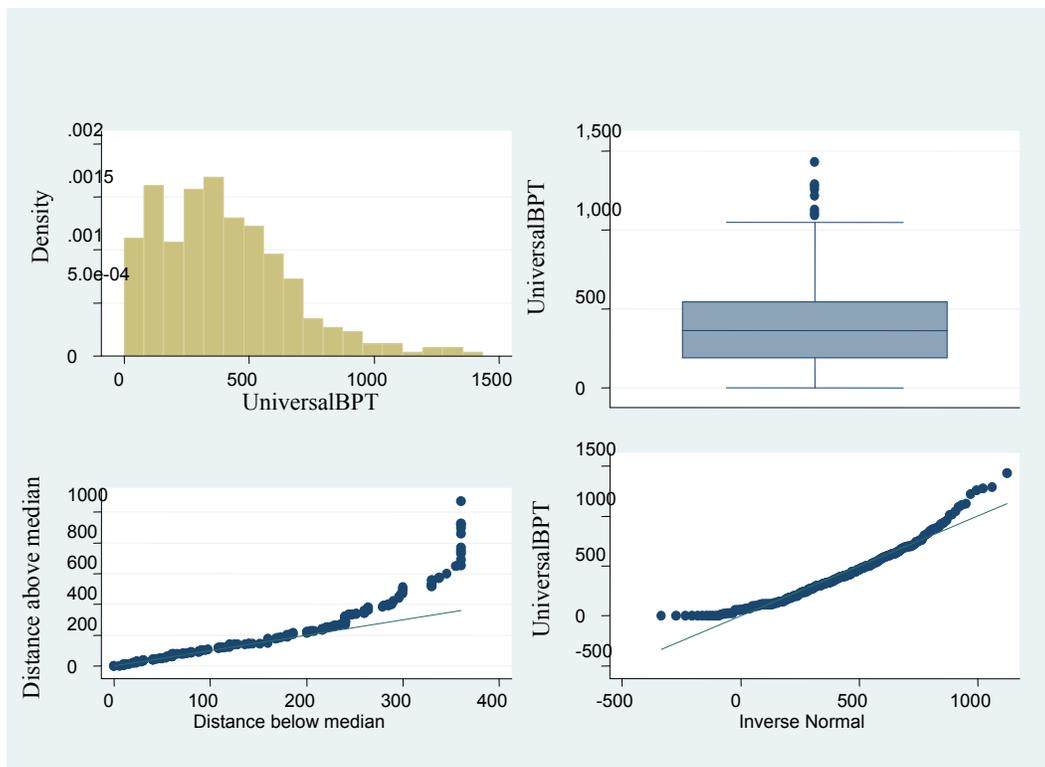


Figure 11 Four views of the distribution of universal best-practices in training, *universalBPT*.

Transformation of Universal Best-Practices in training. After creating a graph that compared the possible transformations, I determined that a $q = .5$ power transformation (square root) would create a distribution that better approximates a normal distribution for *universalBPT*. A new variable, *sqrtsumuniversal* was generated by

calculating the exponent of *universalBPT* to the .5 power. Figure 12 displays a series of graphs showing the transformation of the distribution. Although the histogram of *sqrtsuniversal* more closely approximates a normal distribution in the upper left corner, an apparent lack of symmetry still exists in the distributional shape. Indicating asymmetry, in the lower left corner of Figure 12, some symmetry-plot points are not on the diagonal line. The symmetry-plot suggests that the distribution is more symmetrical near the median but becomes negatively skewed. The quantile-normal plot, in the lower right corner of Figure 12, visually displays a negative skew and low outliers (Hamilton, 1992). I will also watch this model carefully as I work through the analysis.

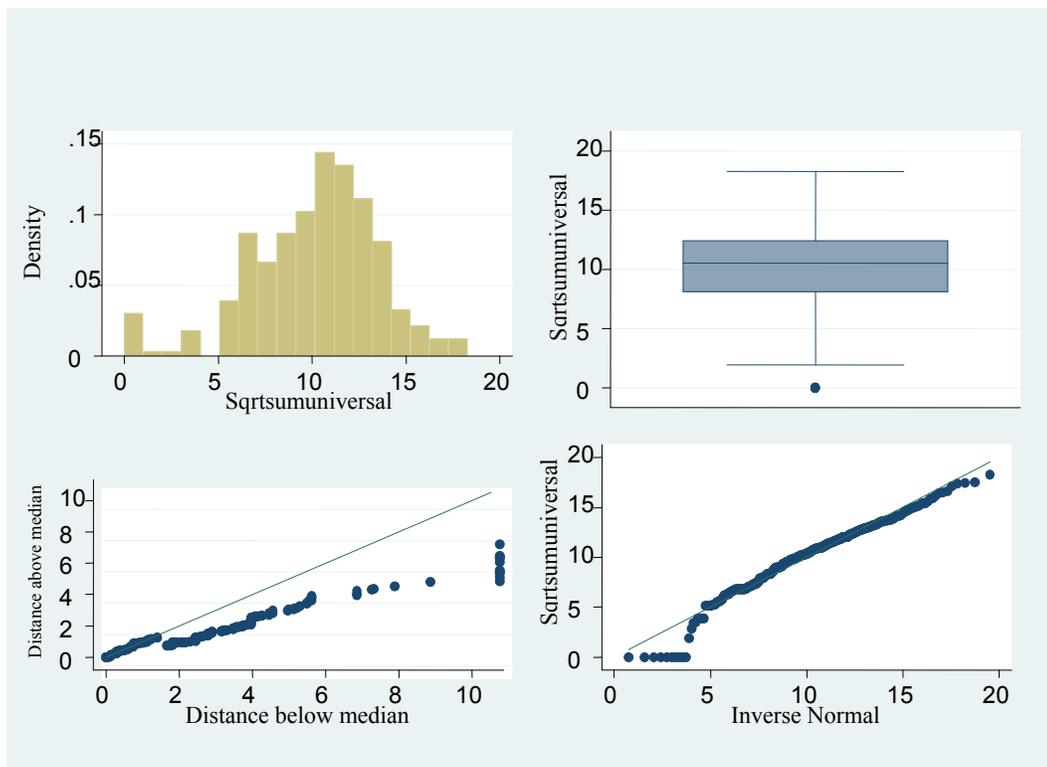


Figure 12 Transformation of universal best-practices in training, *sqrtsuniversal*.

Table 35 summarizes each original variable name, the transformed name, and the descriptive statistics of each transformed variable. In a normal distribution, mean,

median, and mode are the same. In the case of all three transformed variables, neither the means nor medians are equal. The mean and medians for *sqrtagingbpt6* and *logsumdisability3* are extremely close in value (i. e. 46.38 compared with 45.94).

However, the distributions appear more normal now than before the transformations.

Table 35

The Mean, Median, and Standard Deviation for Each Transformed BPT Variable

Variable	Transformed Name	Mean	Median	Standard Deviation
<i>Aging BPT</i>	<i>sqrtagingbpt6</i>	46.38	45.94	17.53
<i>Disability BPT</i>	<i>Logsumdisability3</i>	3.68	3.34	1.98
<i>Universal BPT</i>	<i>sqrtsumuniversal</i>	10.14	9.15	3.42

Independent Variables

Structural Variables

The structural variables include: 1) evaluation practices (*evaluation*) in the organization; 2) organization type (*agingtype*); 3) percent of clients/residents who have medical assistance as a primary payment mechanism (*ordpercentma*); 4) size of the organization as measured by the number of direct care workers(DCW) (*sizeraw*); and 5) intensity of the care needs (*intensity*) of the clients/residents.

Evaluation practices in organizations. Figure 13 displays four graphs depicting the distributional shape of *evaluation*. Rather than displaying a normal distribution, Figure 13 suggests that the values are clustered at a few discrete values. Moreover, there are many values at zero. The boxplot, in the right top corner, graphically displaying the median and interquartile range, suggests only a small amount of positive skew. The symmetry plot, in the bottom left corner, graphs the distance from the median of the *i*th value above the median against the distance from the median of the *i*th value below the median. If the distribution were symmetrical, all points would lie on the line. Because all points lie above the line, asymmetry in the positive direction is suggested. The quantile-

normal plot, in the bottom right corner, suggests granularity, or a situation in which certain values occur repeatedly in the data.

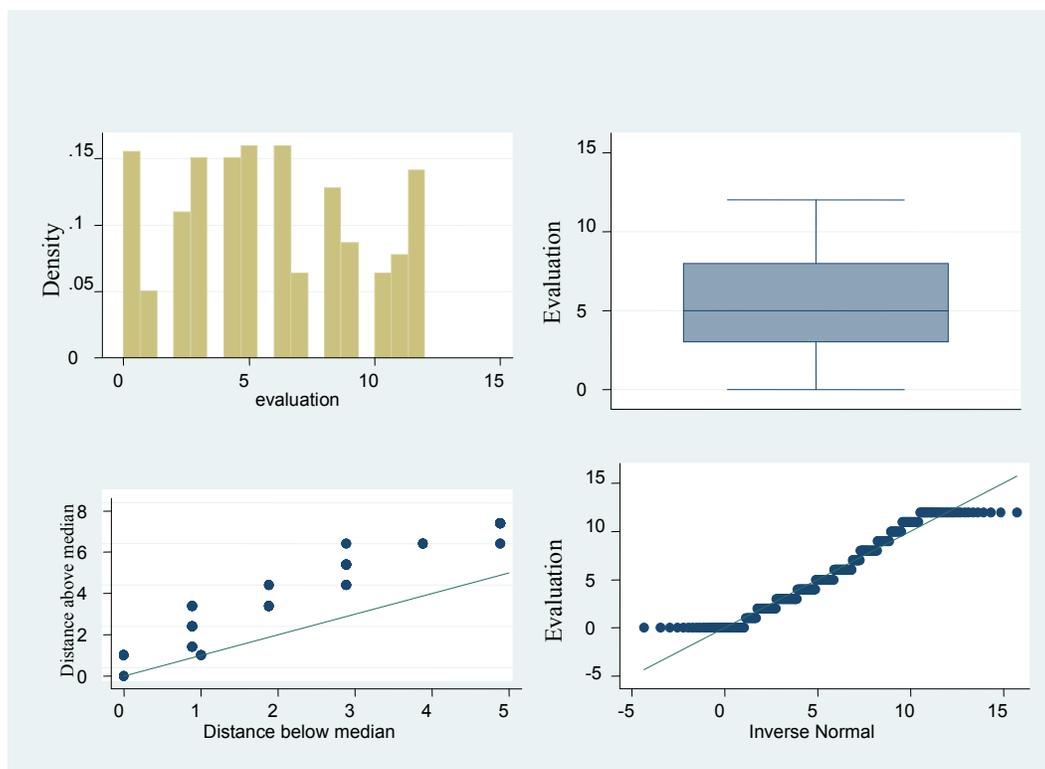


Figure 13 Four views of the distribution of the evaluation practices, *evaluation*.

Exploratory analysis. In order to continue exploratory analysis using transformations of the variable *evaluation* with some values at zero, I added a one to *evaluation*. I renamed the variable *evaluationplus*. Second, I generated a series of histograms, using the ladder command in STATA, for the possible power transformations of *evaluationplus*.

Transformation of *evaluation*. After looking at the histograms of possible transformations, it became apparent that $t^q = .8$ transformation, in between identity and square root, would create a distribution that better approximates a normal distribution. A new variable, *evaluationplus8*, was generated by raising *evaluationplus* to the exponent

.8. Figure 14 graphically displays the distributional shape. In the left upper corner, the histogram looks more symmetrical than it did before transformation. The boxplot, in the right upper corner, also shows some improvement. In the symmetry plot in left lower corner, most of the values still lie above the plot. The quantile-normal plot, in the lower right corner, depicts quantiles of evaluation against corresponding quantiles of a theoretical normal distribution. Granularity in the data is still apparent due to the frequent repetition of the same values in the data. Nonetheless, the *evaluationplus8* distribution approximates a normal distribution better than the positively skewed *evaluation* distribution.

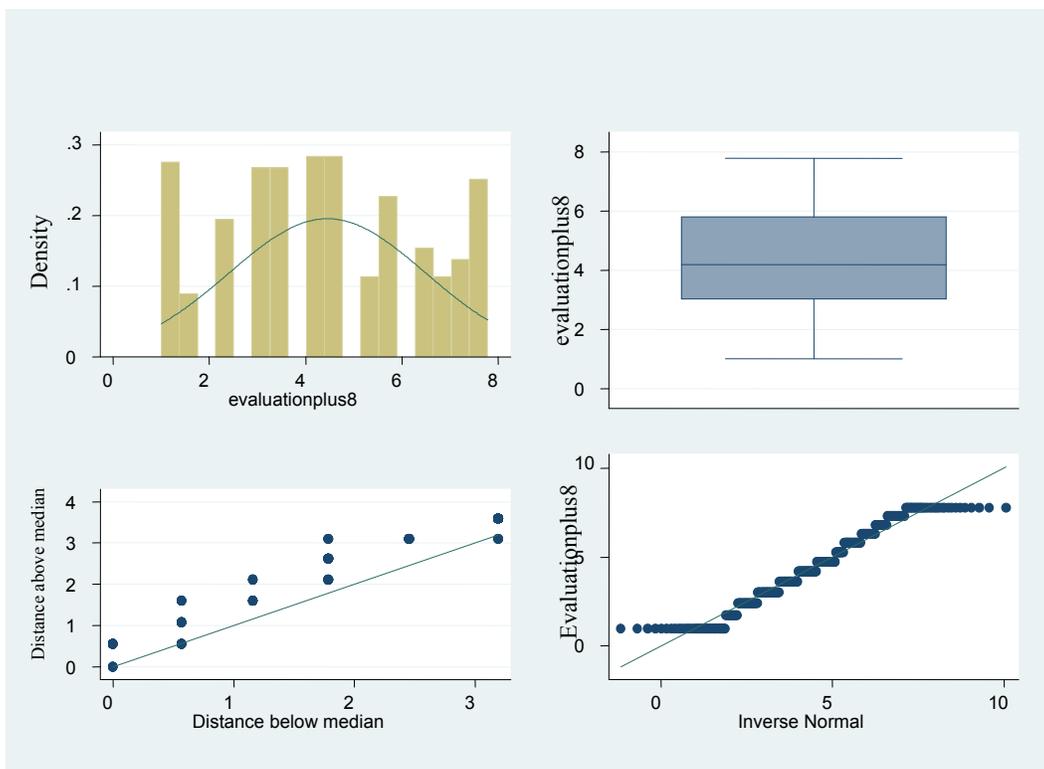


Figure 14 Transformation of evaluation practices, *evaluationplus8*.

Type of Organization. I do not expect the variable, *agingtype*, created as a dichotomous variable to have a normal distribution. There are only two values for “yes” or “no.” I use the variable in the regression without change or transformation.

Percent of medical assistance payment in the organization. In the raw data for *percentma*, I see extremely high frequencies at “0” and “1.” I see very low frequency in the middle of the distribution. In order to include this variable in the equation, I created an ordinal variable, *ordpercent*, detailed in the methods section. Figure 15 graphically displays the distributional shape of *ordpercent*. The histogram and boxplot, in the upper section of Figure 15, shows a distribution with less skew than the raw data. In the lower section, both the symmetry and quantile-normal plot show granularity, or repetition of the same values, in the data. I expect ordinal data to show granularity.

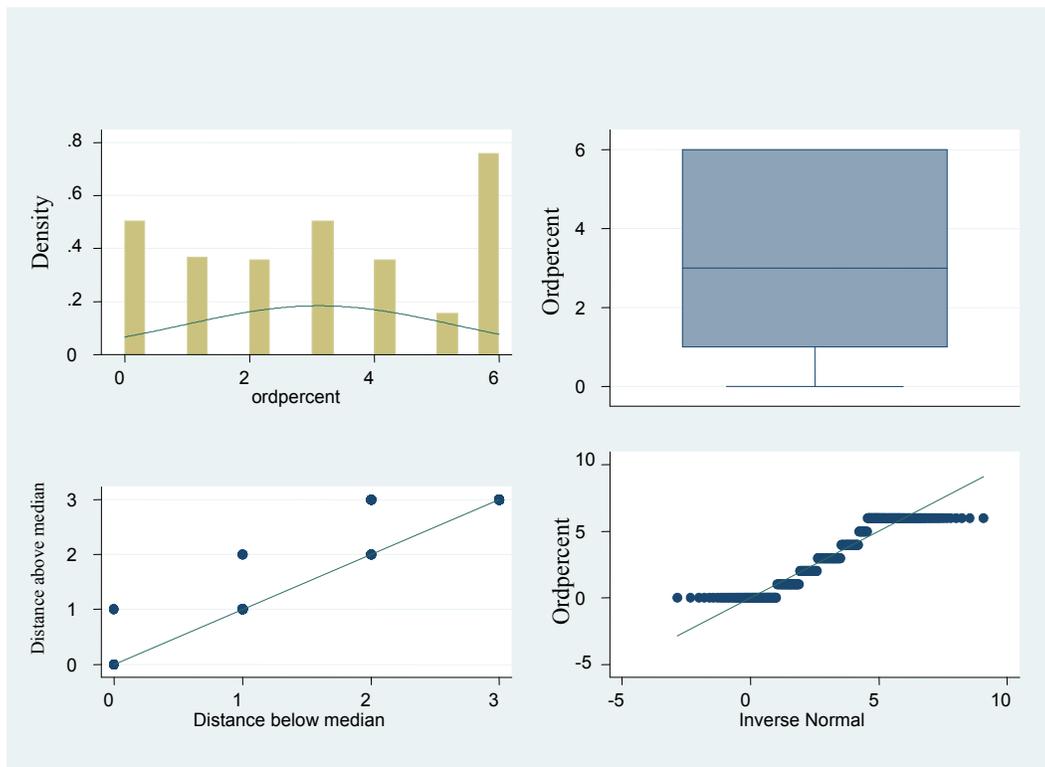


Figure 15 Four views of the distribution of percent of public assistance, *Ordpercent*

When I compared *ordpercent* to a series of histograms of different power transformations, I decided not to transform *ordpercent*. None of the other power transformations were any closer to normal than identity. Therefore, I used *ordpercent* at identity, the most nearly normal distribution.

Organization Size. Organization size refers to the number of full-time and part-time direct care workers in the facility. In order to identify the distributional shape of the organization size, I plotted four different types of graphs. The histogram in the upper left corner of Figure 16 shows a distribution with a positive skew. The boxplot, in the upper right corner of Figure 16, also suggests an extreme positive skew. Part of the line in the symmetry plot, in the lower left corner of Figure 16, lies directly on the symmetry plot. However, the line curls up to the far right end. This curl indicates problems with the distribution. The quantile-normal plot, in the lower right corner of Figure 16, shows a positive skew with high outliers of the distribution.

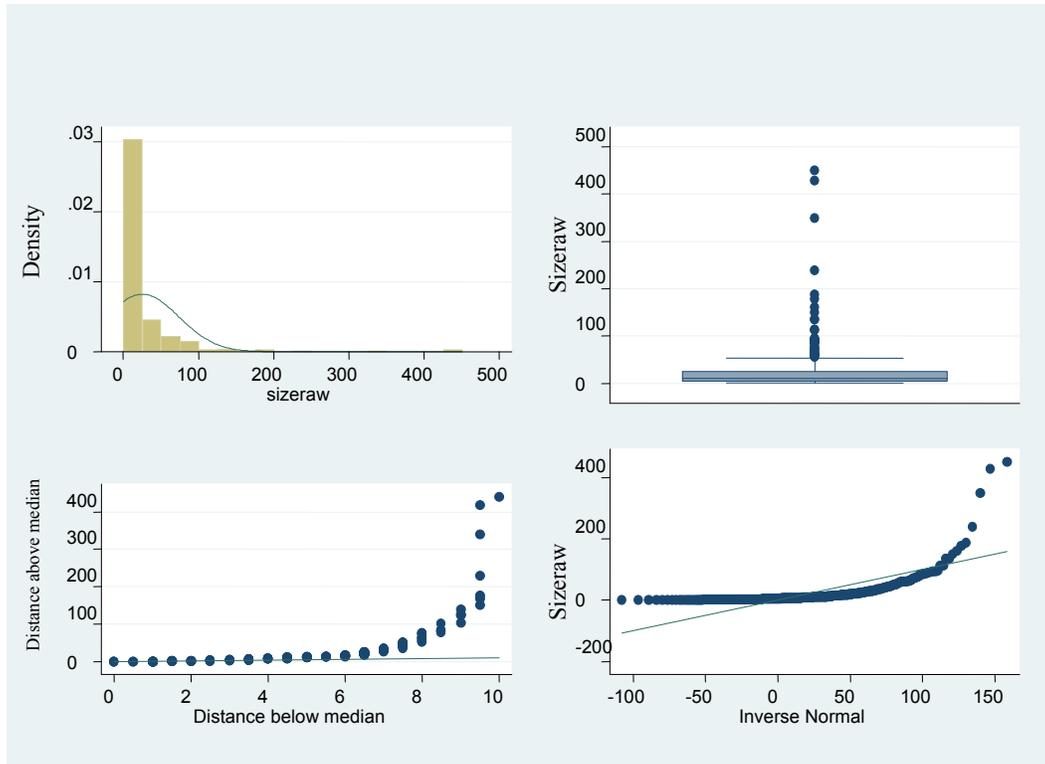


Figure 16 Four views of the distribution of organization size, *sizeraw*.

Transformation of organization size. In order to create a more normally distributed variable, I created a variable called *logplussizeraw15* ($-(\text{oneplussizeraw}^{-.15})$). I chose this particular power transformation after visually inspecting the graphs of various options between square root and log. Figure 17 portrays the graphs showing the distributional shape of the transformation of organizational sized called *logplussizeraw15*. In the upper left corner, a histogram with an overlay of the normal curve, suggests that *logplussizeraw15* appears nearly normal. The boxplot of *logplussizeraw15*, in the upper right corner, also indicates that the skew seems less pronounced. Both the symmetry and the quantile-normal plot in the bottom part of Figure 17 demonstrate a more normal distribution with *logplussizeraw 15* than the raw data.

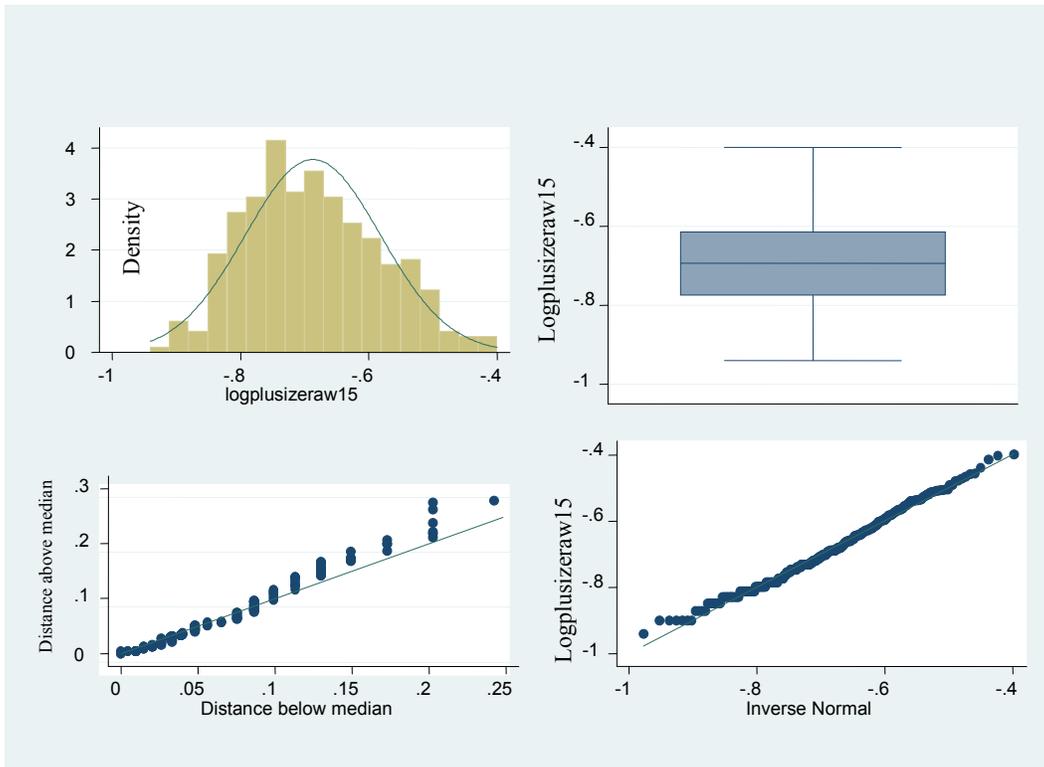


Figure 17 Transformation of organization Size, *logplusizeraw15*.

Intensity of Care Requirements. Another structural variable concerns the intensity of care required of the DCWs. Intensity measures the percentage of total residents who are over 85, those with developmental disability over 60, individuals with mobility issues, and individuals with dementia. Figure 18 presents the graphs depicting the distribution of *intensity*. Both the histogram and the boxplot in the upper portion of Figure 18 indicate a positive skew of the data. The symmetry and the quantile-normal plot, in the lower half of Figure 18, also suggest a positive skew.

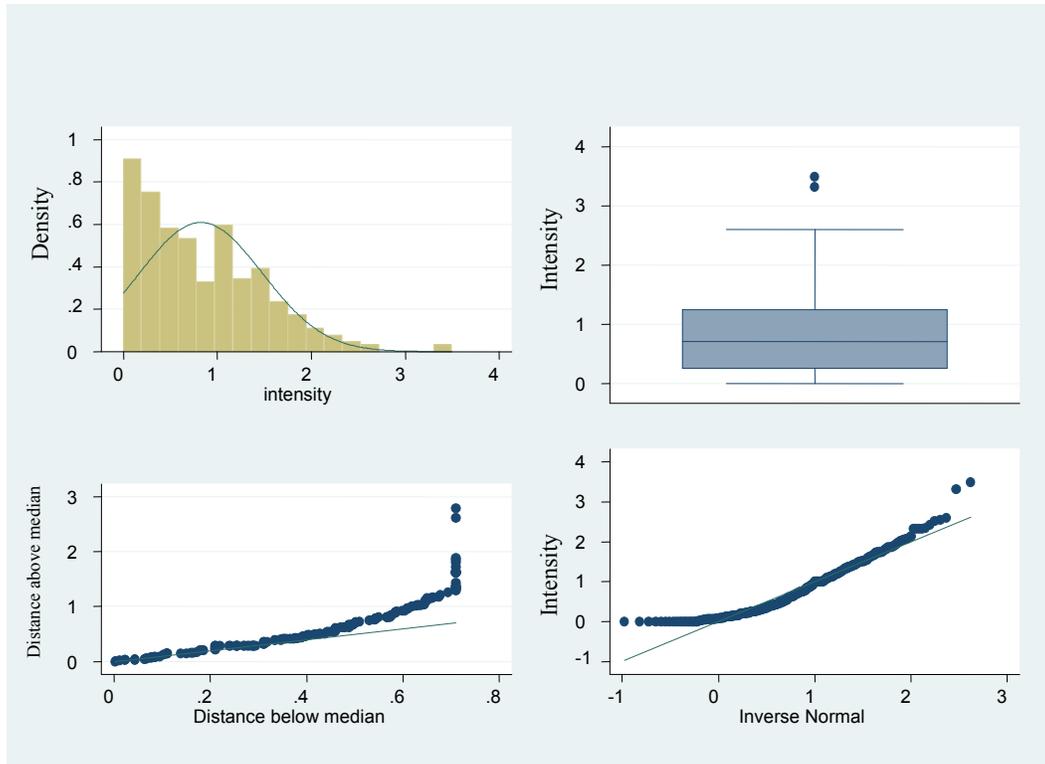


Figure 18 Four views of the distribution of intensity of care, *intensity*.

Since the distribution has a positive skew, I need to complete a power transformation. First, I added a one to the entire distribution, called *intensityplusone*, in order to get the full range of possible power transformations. Next, I graphed a histogram with normal distribution overlay to examine the result of the transformation.

Based upon the power transformations, I created a variable, *invintensity5*, $-(intensityplusone^{-.5})$ after exploring various transformations close to the inverse transformation. Figure 19 displays the graphs showing the distributional shape after power transformation of Intensity of care. The distribution is not perfectly normal, but the distribution appears nearer normal than before transformation.

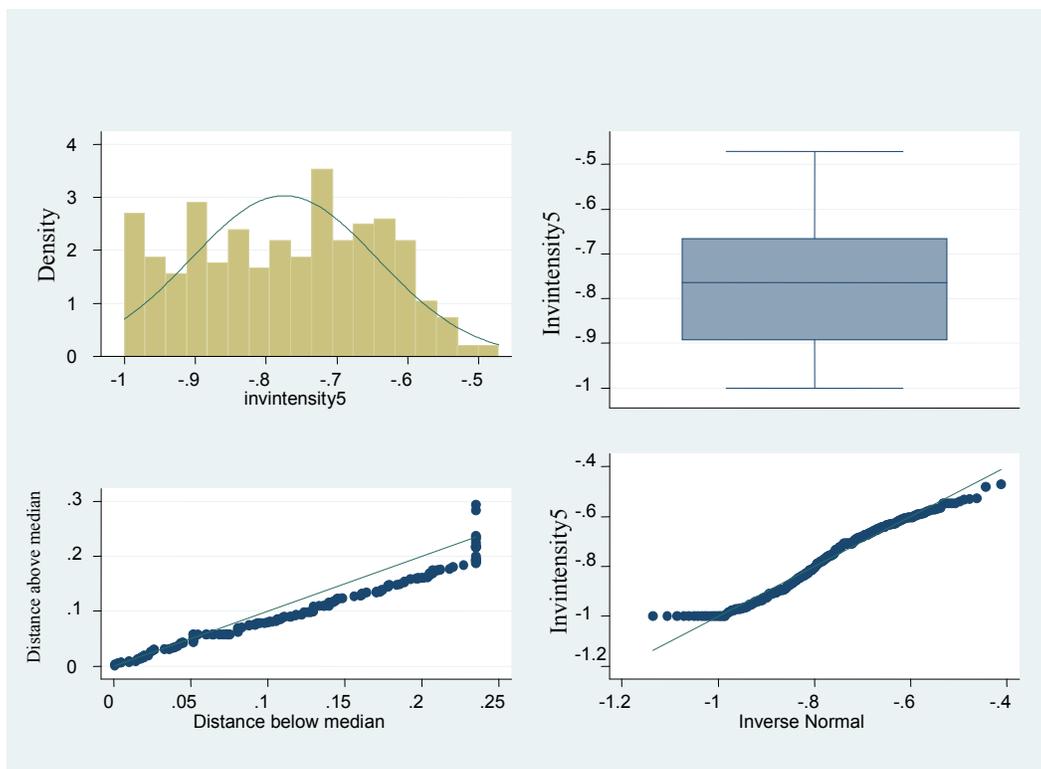


Figure 19 Transformation of intensity, *invintensity5*.

Table 36

The Mean, Median, and Standard Deviation for Each Transformed Structural Variable

<i>Variable</i>	<i>Transformed Name</i>	Mean	Median	Standard Deviation
<i>Evaluation</i>	<i>Evaluationplus8</i>	4.45	4.19	2.04
<i>Agingtype</i>	Dichotomous No Transformation			
<i>Ordpercentma</i>	Ordinal No Transformation	1.54	2	.49
<i>Sizeraw</i>	<i>Logplussizeraw15</i>	-.69	-.69	.11
<i>Intensity</i>	<i>Invintensity5</i>	-.77	-.76	.13

Cultural Variables

Exploratory Analysis for Care Input (*cinput*). Care input measures the respondents' perception of how much influence the organization's DCWs have in care decisions. Figure 20 shows the distributional shape of the composite variable, *cinput*. The histogram, in the upper left corner of Figure 20, indicates a negative skew in the data. The boxplot, in the upper right corner, confirms large differences between median

and mean. In the lower left corner of Figure 20, the symmetry plot suggests a negative skew. The quantile-normal plot, in the lower right corner, suggests granularity or many repeats of the same value.

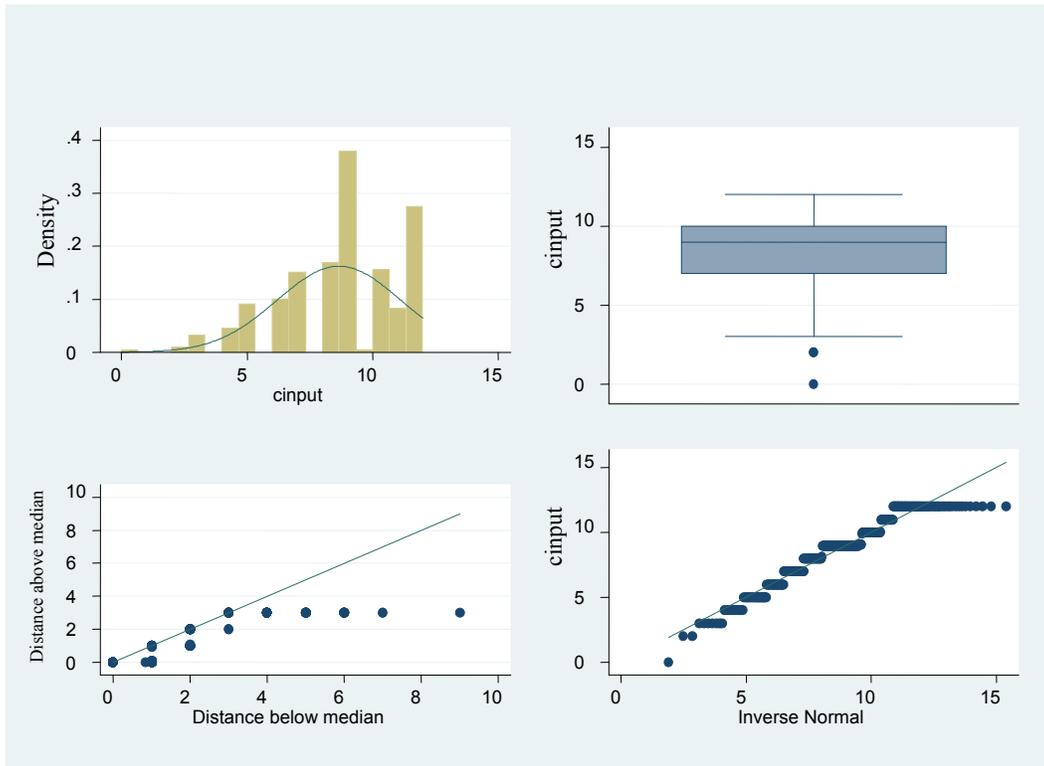


Figure 20 Four views of the distribution of care input, *cinput*.

Transformation for *cinput*. The graphs manifest a skew indicating that the distribution may need transformation. I completed further exploratory analysis in order to inspect a series of histograms with normal distribution overlay. I generated a new variable, *squarecinput*, in which I transformed *cinput* by squaring it. Although *squarecinput* remains non-normal, the four views of the distribution depict a shape that appears closer to normal and more symmetrical than *cinput*.

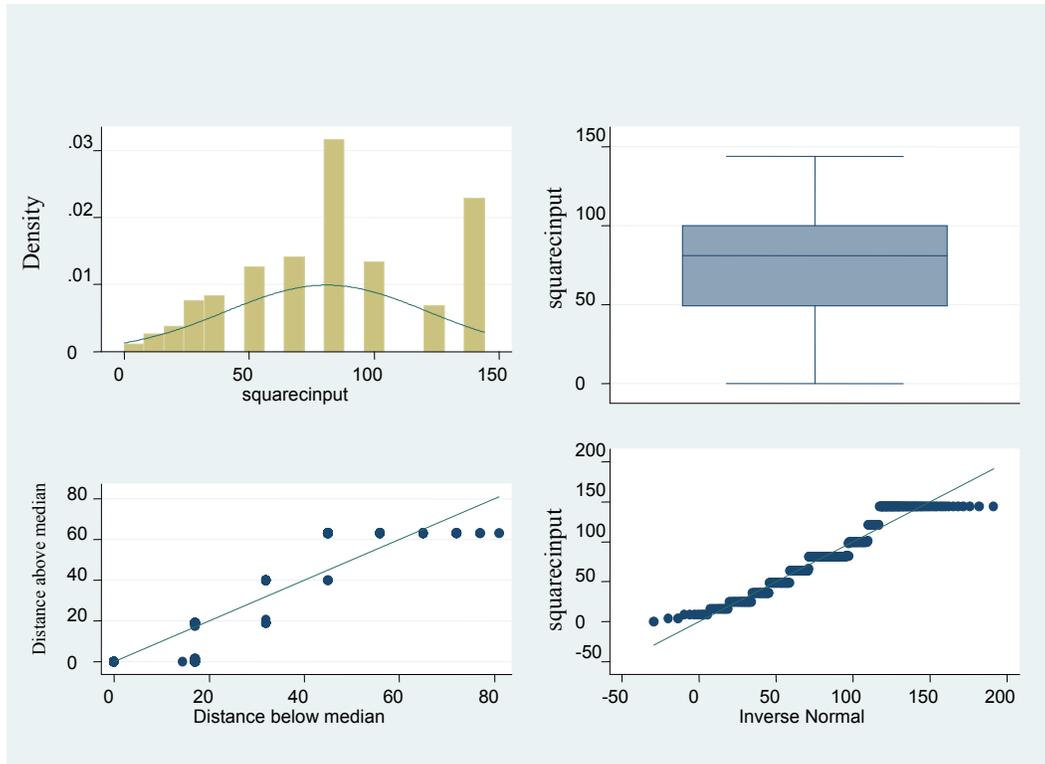


Figure 21 Transformation of care input, *squareinput*.

Direct care workers' organizational input. After the factor analysis, based upon the higher loadings on factor 2, I created a composite variable from three questions. Theoretically, it makes sense that these items fit together in order to describe DCWs input into organizational decision-making. The Cronbach's alpha reliability coefficient from the 3 items ($\alpha = .73$) showed good internal consistency. In order to explore the variable *orginput*, I created a number of versions of the histograms with different powers. Figure 22 displays the distributional shape of this additive measure, *orginput*. In the upper left corner of Figure 22, the histogram shows a slight skew. The symmetry and quantile-normal plot in the lower section of Figure 22 signal the most concern about a nonnormal distribution. The symmetry plot, on the left lower corner, indicates asymmetry when the data points dip under the diagonal line. Moreover, in the right lower corner, Figure 22 shows granularity related to the repeat of similar values.

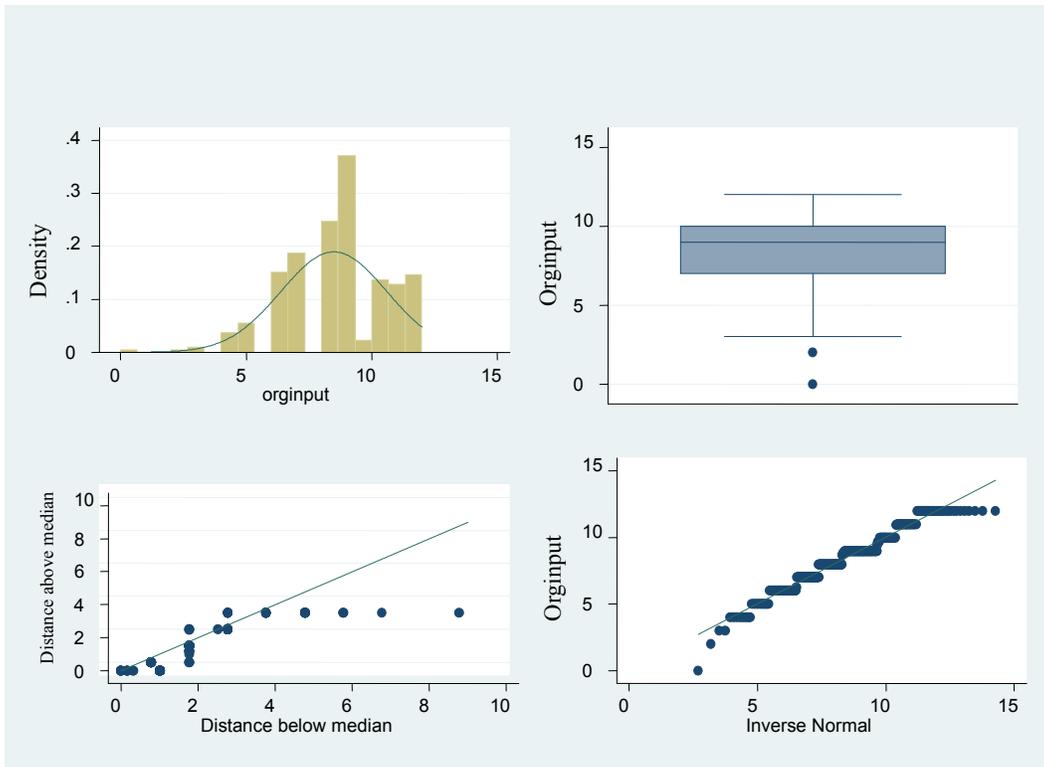


Figure 22 Four views of the distribution of organizational input, *orginput*.

Transformation of organization input. In order to inspect the various power transformations, I graphed the transformations of organization input (*orginput*). I chose to square the distribution in order to more closely approximate normalcy. In Figure 23, a series of graphs depict a more normal distribution of *squareorginput*. In the upper portion of Figure 23, both the histogram and the boxplot display a less skewed distribution than before transformation. The symmetry and quantile-normal plot, in the lower portion of Figure 23 indicate a distribution that appears closer to normal than organizational input before transformation.

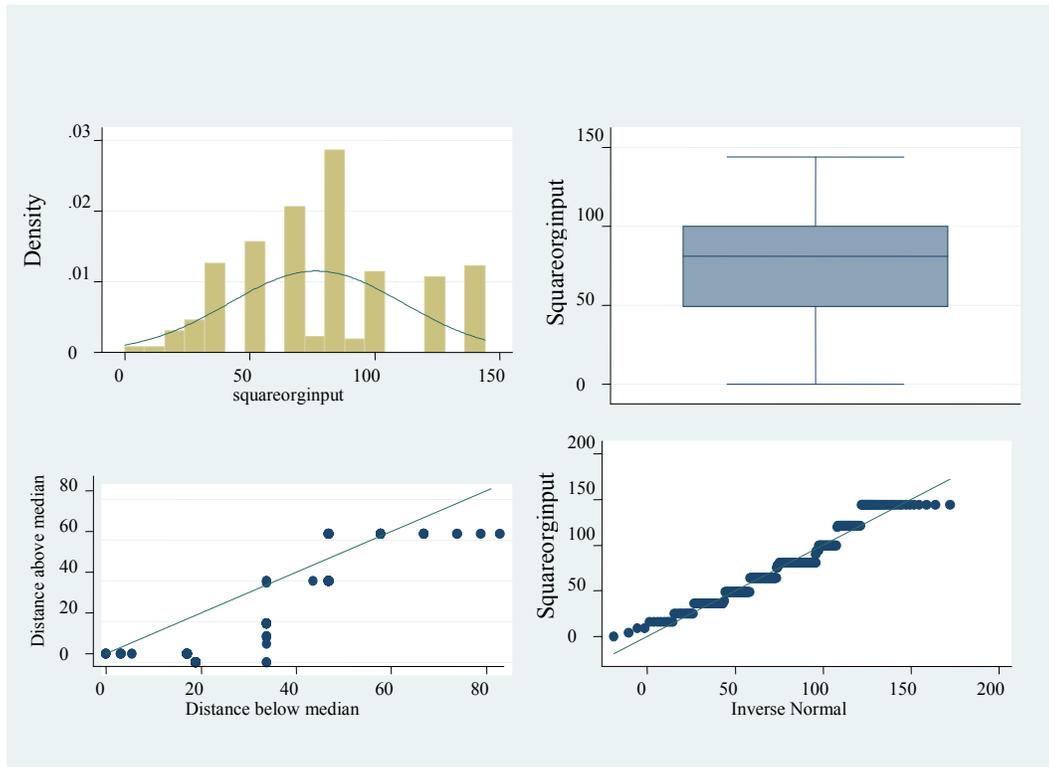


Figure 23 Transformation of organization input, *orginput*.

DCW integration. Item scores from five questions show higher loading on Factor 3. As explained in the methods section, these questions concern conflict with other DCW and supervisors, uncertainty, and lack of training. Prior to adding the items, the items were reverse coded to indicate integration, the antithesis of conflict and alienation. Theoretically, these items fit together because they display a picture of DCW support and role clarity. The Cronbach's alpha reliability coefficient ($\alpha = .68$) approaches a level suggesting internal consistency (Carmines & Zeller, 1979). Figure 24 shows the distributional shape of this additive measure, *integration*.

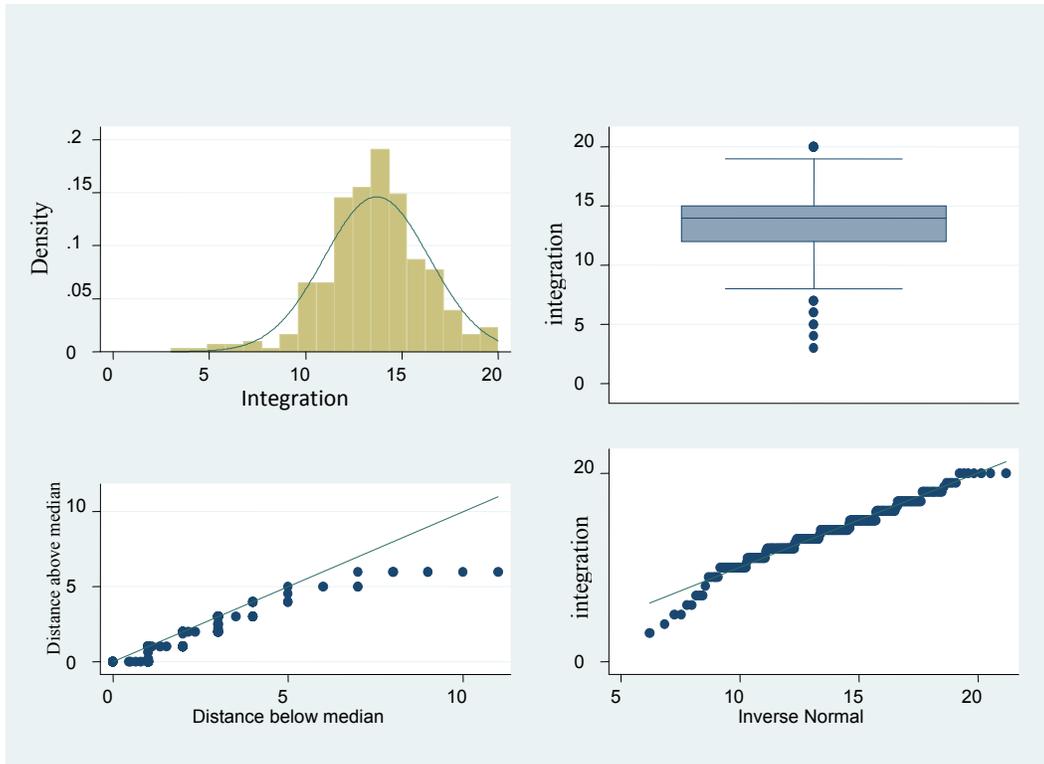


Figure 24 Four views of the distribution of DCW integration, *integration*.

Transformation of integration. In order to visualize the distributional shape of the variable *integration*, I conducted further exploratory analysis. Based upon the histograms with overlay of normal curve, the best power transformation lies between identity and square. I chose to transform *integration*, creating *squareintegration8* from $integration^{1.8}$. Figure 25 displays a series of graphs depicting the distributional shape of the transformed organizational confusion. While the distribution still appears non-normal, it is closer to normality than *integration*. In the upper left corner of Figure 25, a histogram with normal curve overlay, shows a more normal curve with less visible skew. The boxplot, in the upper right of Figure 25, indicates a good degree of symmetry. The symmetry plot, in the lower left corner of Figure 25, suggests that there may be a small amount of asymmetry. Finally, in the lower right corner of Figure 25, the data is almost

exactly on the line of the quantile normal plot indicating a distribution that appears closer to normalcy.

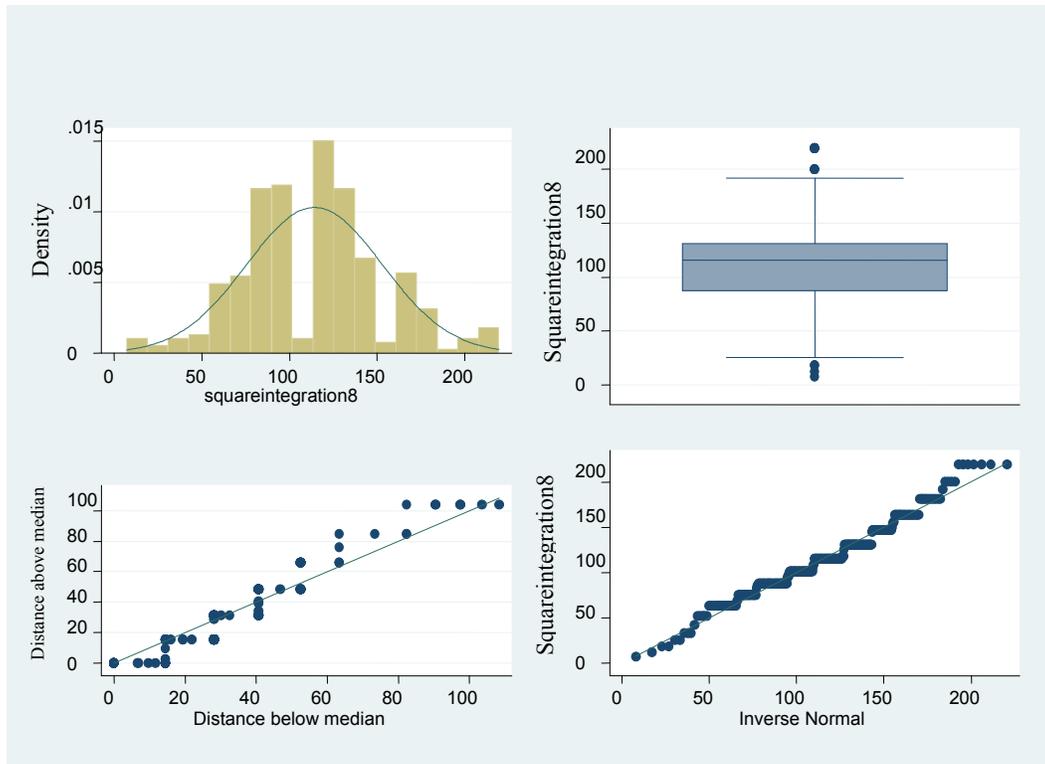


Figure 25 Transformation of DCW integration, *squareintegration8*.

Summary of variable transformations. Table 37 contains each variable name, the name of the transformed variable, and a description of the variable. In order to clarify the regression modeling process, I need a clear description of variables used in the regression equation. Almost every dependent and independent variable required a transformation to create a distribution that approached normalcy. *Agingtype*, the dichotomous variable, and the ordinal variable, *ordpercentma* stand out as the two exceptions.

Table 37

Table Summarizing Variables and Transformations Prior to OLS Regression

Variable Name	Transformation	Description
Aging Best-Practices in Training (<i>AgingBPT</i>)	<i>Sqrtagingbpt</i>	Composite measure of the organization's use of best-practices in aging content training
Disability Best-Practices in Training (<i>DisabilityBPT</i>)	<i>Logdisabilitybpt 3</i>	Composite measure of the organization's use of best-practices in disability content training
Universal Best-Practices in Training (<i>UniversalBPT</i>)	<i>Sqrtuniversabptl</i>	Composite measure of the organization's use of best-practices in universal training content
Evaluation (<i>Evaluation</i>)	<i>Evaluationplus8</i>	Measure of the organization's level of training evaluation practices
Type of Organization (<i>Agingtype</i>)	<i>Agingtype</i> (not transformed)	Indication whether the organization is part of the aging Network or not
Percent of Public Assistance to Total (<i>Ordpercentma</i>)	<i>Ordpercentma</i> (not transformed)	Measure of the percent of clients whose primary payment mechanism is medical assistance, Medicaid waiver or SSI
Size of Organization (<i>Sizeraw</i>)	<i>Logplussizeraw15</i>	Total number of direct care workers in an organization
Intensity of Care (<i>Intensity</i>)	<i>Invintensity5</i>	Composite measure of the amount of clients in the organization with more intense care needs
Care Input (<i>cinput</i>)	<i>Squarecinput</i>	Cumulative measure of the frequency of opportunities for input and actual input that DCWs provide regarding resident care decisions
Organization Input (<i>orginput</i>)	<i>Squareorginput</i>	Cumulative measure of the frequency of opportunities for input and input that DCWs provide regarding organizational decisions
DCW Integration (<i>integration</i>)	<i>Squareintegration8</i>	Cumulative measure of the frequency that DCWs do not experience conflict, uncertainty, and strife in the environment

Final Regression Model for Aging Best-Practices in Training

After exploration of each variable in the model on the univariate level, I began analysis on the multivariate level. The first phase of the statistical analysis involved multivariate regression analysis to investigate this study's research hypotheses. My research questions and hypotheses led the decisions about variable combinations.

I hoped to arrive at a multivariate regression model that best portrays the structural and cultural factors in the organization influencing best-practices in training. I wanted to determine the most parsimonious model that contained every essential variable without including extraneous ones. I conducted a series of multiple regression equations that included all the demographic variables as well as the independent ones that I had developed. Based on theory, I systematically evaluated every variable to decide whether it made sense to include it in the model. I based my step-wise decisions concerning the addition or removal of a variable from Hamilton's (1992) process of variable selection, including: 1) the r-squared improves; 2) coefficients are significantly different from zero; and 3) spurious coefficients shrink. As a result of the descriptive analysis of the dependent best-practice variables, I determined that the vast differences between Aging Best-Practices and Disability Best-Practices meant that they could not be combined in one regression model. Since those first regressions, I used a process of constantly refining the added variables and checking the impact on the regression model.

Comparison of regression models. Table 38 provides a comparison of two different multivariate regression models. The difference in these two models is the variable Organizational Input (*orginput*). With the variable in the model, the adjusted R-squared is .18 and $F = 10.17$. Without the variable *orginput*, the adjusted R-squared increases by .01 to .19 and F increases by 1.49 to 11.66. With the exception of significant coefficients increasing slightly, removing *orginput* from the model does not change other variables. In this simple or more parsimonious model, *evaluation* ($p < .01$), *agingtype* ($p < .01$), organization size (*sizeraw*) ($p < .05$), intensity of care (*intensity*) ($p < .001$), and DCW integration (*integration*) ($p < .05$) have significant coefficients.

The second model shows a statistically significant positive relationship between Y_i transformed Aging Best-Practices in Training (*sqrtagingbpt*) and transformed Evaluation ($X_{i1} = \textit{evaluationplus8}$), $X_{i2} =$ Type of Organization (*agingtype*), Percent of Public Assistance ($X_{i3} = \textit{orgpercentma}$), transformed Organization Size ($X_{i4} = \textit{logplussizeraw15}$), transformed Intensity of Care ($X_{i5} = \textit{invintensity5}$), transformed Input into Care ($X_{i6} = \textit{squarecinput}$), and transformed DCW Integration ($X_{i7} = \textit{squareintegration8}$). The regression line is described by $Y_i (\textit{sqrtAgingBPT}) = 69.96 + 1.27X_{i1} + 5.16 X_{i2} + -0.64 X_{i3} + 20.13 X_{i4} + 31.76 X_{i5} + .08 X_{i6} + .06 X_{i7}$. The F-statistic, based upon the sum of squares, is 11.66 with 8 and 319 degrees of freedom, suggests that the null hypothesis be rejected ($p < .001$). There is a very low probability that the F statistic would be greater if random samples were drawn from a population in which the null hypothesis is true.

Given the coefficient of determination, adjusted $R^2 = .19$, 19% of the variability of Aging Best-Practices in Training can be explained by the combination of variables in the model. The coefficients for each of the variables indicate the amount of change seen in Aging Best-Practices in Training given a one unit change in each particular variable. For every unit increase in transformed Evaluation Practices (*evaluationplus8*), there is 1.27 increase in transformed Aging Best-Practices (*sqrtagingBPT6*). Furthermore, an increase in the amount of aging network organizations by 1 predicts an increase of 5.16 in transformed Aging Best-Practices. An increase in one unit of transformed Organization Size (*logsizeraw15*) suggests an increase of 20.13 units of Aging Best-Practices. Counterintuitive to logical assumptions about the Intensity of Care in an organization, an increase in transformed Intensity of Care (*invintensity5*) predicts an increase of 31.76 in

transformed Aging Best-Practices. Moreover, a unit increase of transformed DCW integration (*squareintegration8*) predicts a very small increase of .06 in transformed Aging Best-Practices.

Table 38

Regression of Aging Best-Practices on Evaluation, Type of Organization, Percent Public Assistance, Size of the Organization, Intensity of Care, DCW Input into Care, Organizational Input, and DCW Integration

Variable	Aging Best-Practices in Training		
	Model 1 β	β	95% CI
Constant	69.92***	69.96***	[51.59, 88.33]
Evaluation	1.27**	1.27**	[0.39, 2.14]
Agingtype	5.15**	5.16**	[1.33, 8.98]
Percent Public Assistance	-0.64	-0.65	[-1.51, 0.22]
Organization Size	20.15*	20.13*	[2.61, 37.65]
Intensity of Care	31.73***	31.76***	[16.83, 46.68]
DCW Input Into Care	0.03	0.03	[-0.02, 0.07]
DCW Input into Organization	0.00		
DCW Integration	0.06*	0.06*	[0.01, 0.11]
R^2	0.20	0.20	
Adjusted R^2	0.18	0.19	
F	10.17***	11.66***	
Change in Adjusted R^2		0.01	
Change in F		1.49	

Note: N = 328 CI = Confidence Interval * $p < .05$ ** $p < .01$ *** $p < .001$

Interactions between variables. Table 39 displays the regression model with the addition of interaction terms. As described in the methods section, eight interaction terms were constructed by multiplying structural and cultural variables in various combinations. I added each of the interaction terms to the regression equation one by one. At each stage of adding one at a time, I noted no changes to the regression model that increased the explained variance. With the exception of an increase in the constant of 30.44, the interaction terms add nothing to the regression model. In fact with the addition of the coefficients of transformed evaluation, organizational size, and DCW became non-significant suggesting multicollinearity in the model. None of the interaction terms had a

significant coefficient. I dropped them in order to avoid unnecessarily complicating the model. Therefore, no significant interaction between structural and cultural variables exists in this model to predict best-practices in training.

Table 39

Regression of Aging Best-Practices on Evaluation, Type of Organization, Percent Public Assistance, Size of the Organization, Intensity of Care, DCW Input into Care, DCW Integration, and Interaction Terms

Variable	Aging Best-Practices in Training		
	Model 1 β	β	95% CI
Constant	69.96***	100.40**	[38.99, 161.81]
Evaluation	1.27**	0.51	[-2.63, 3.65]
Agingtype	5.16**	4.66*	[0.76, 8.56]
Percent Public Assistance	-0.65	-0.59	[-3.53, 2.35]
Organization Size	20.13*	25.18	[-35.24, 85.61]
Intensity of Care	31.76***	62.73*	[13.37, 112.10]
DCW Input Into Care	0.03	-.33	[-.77, 0.11]
DCW Integration	0.06*	0.06	[-0.42, 0.53]
Evaluation x Input Into Care (<i>Evalinput</i>)		-0.00	[-0.02, 0.02]
Evaluation x Integration (<i>Evalintegration</i>)		0.01	[-0.02, 0.03]
Percent MA x Input Into Care (<i>MAinput</i>)		-0.00	[-0.03, 0.01]
Percent MA x Integration (<i>MAintegration</i>)		0.01	[-0.02, 0.03]
Size x Input Into Care (<i>Sizeinput</i>)		-0.29	[-0.72, 0.13]
Size x Integration (<i>Sizeintegration</i>)		0.16	[-0.29, 0.63]
Intensity x Input (<i>Intenseinput</i>)		-0.23	[-0.57, 0.12]
Intensity x Integration (<i>Intenseintegration</i>)		-0.10	[-0.46, 0.26]
R^2	0.20	0.22	
Adjusted R^2	0.19	0.18	
F	11.66***	5.81***	
Change in Adjusted R^2		-0.01	
Change in F		-5.85	

Note: N =328 CI = Confidence Interval *p<.05 **p<.01 *** p<.001

Regression Diagnostics: Aging Best-Practices in Training Model

I used a number of regression diagnostics in order to determine if the assumptions underlying Ordinary Least Squares regression were met. Several post-regression tests of

assumptions allow for checking on the model specifications. Hamilton (1992) clearly delineates the primary assumptions of OLS as normal independent identically distributed error and homoskedasticity.

Assumption of Homoskedasticity. As seen in Figure 26, I created a residual versus fitted plot to check for heteroskedasticity and normal i.i.d (identically, independently distributed) pattern among the residuals. The assumption of homoskedasticity suggests constant error variance (Hamilton, 2006). If heteroskedasticity exists, then the standard errors and hypothesis tests may not be valid (Hamilton, 2006). The graph in Figure 26 shows residual symmetrically distributed around zero. Since symmetry of residuals assumes normal error, no outliers or curvilinearity, I am not concerned about heteroskedasticity in the Aging Best-Practices Training.

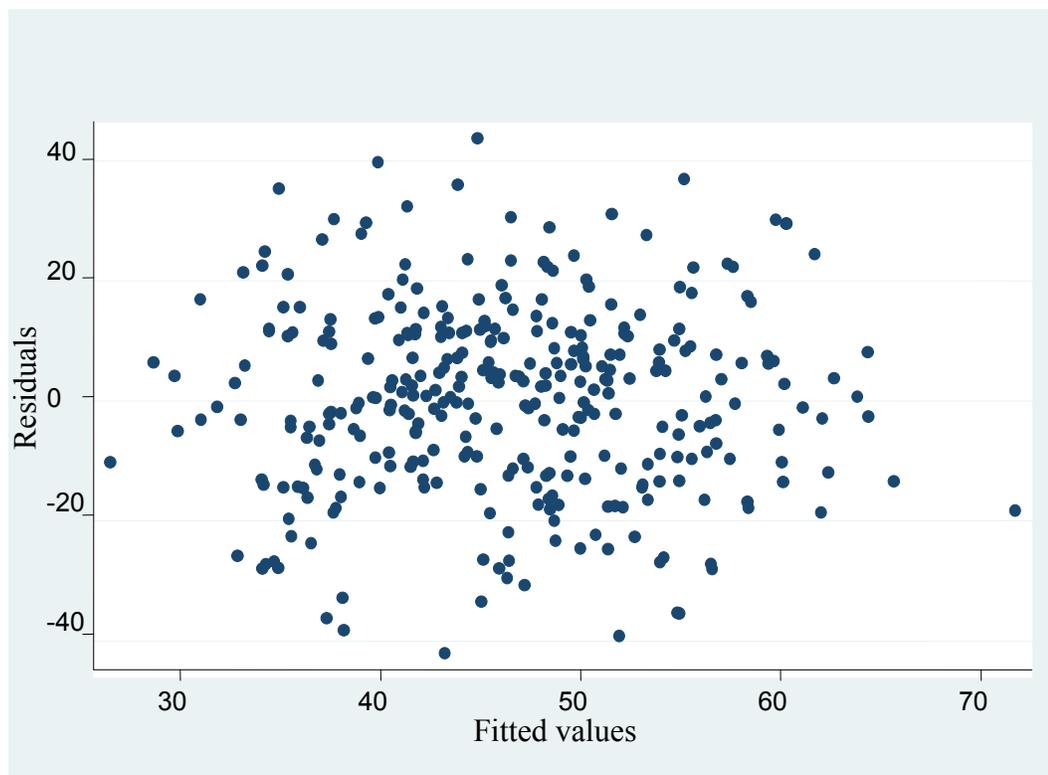


Figure 26 Residuals versus fitted values plot for the regression of Aging Best-Practices in Training.

Multicollinearity. I also checked for multicollinearity, a linear relationship existing among the independent variables in the regression model (Hamilton, 2006). Having one independent variable highly related to another independent variable becomes problematic in a regression model as it can create the conditions for: 1) higher standard errors, 2) unexpected changes in coefficients, and 3) nonsignificant coefficients (Hamilton, 2006). Displayed in Table 40, Variance Inflation Factor (VIF) is one way to evaluate multicollinearity. Chatterjee, Hadi, and Price (2000) argue that when the largest VIF is greater than 10 or the mean VIF is greater than one, multicollinearity may be a problem. In this model, there are no single VIF's greater than 10. However, the mean is a little over 1 at 1.16. Tolerance scores, otherwise known as $1/VIF$, are excellent with values over .70, suggesting independent variation (Hamilton, 2006).

Table 40
Variance Inflation Factor and Tolerance for Aging BPT

Variable	VIF	1/VIF
Evaluation(<i>evaluationplus8</i>)	1.08	0.93
Agingtype(<i>agingtype</i>)	1.17	0.85
Percent of Public Assistance (<i>Ordpercentma</i>)	1.19	0.84
Organization size (<i>logplusize15</i>)	1.16	0.86
Care Intensity (<i>invintensity5</i>)	1.31	0.77
Input into Care (<i>squarecinput</i>)	1.05	0.95
DCW Integration (<i>squareintegration</i>)	1.13	0.88
Mean VIF	1.16	

Leverage versus squared-residuals. A leverage-versus-squared-residuals plot graphs leverage against the regression's residuals squared. Figure 27 displays a plot for the Aging Best-Practices in Training regression. I can visualize most points in a group at the lower left of the plot. The horizontal line in the plot shows the leverage and the

vertical line indicates the squared residuals. The plot indicates the potential influence or leverage a particular organization has on the regression. High leverage results from extremely different x values or combinations of x values (Hamilton, 2006). A large squared residual suggests that the regression has an organization with a y value much different from what is predicted by the model. In the graph, these points appear in the upper right corner. In Figure 27, since no observations exist in the upper right corner, no observations exert leverage and poor-fit at the same time.

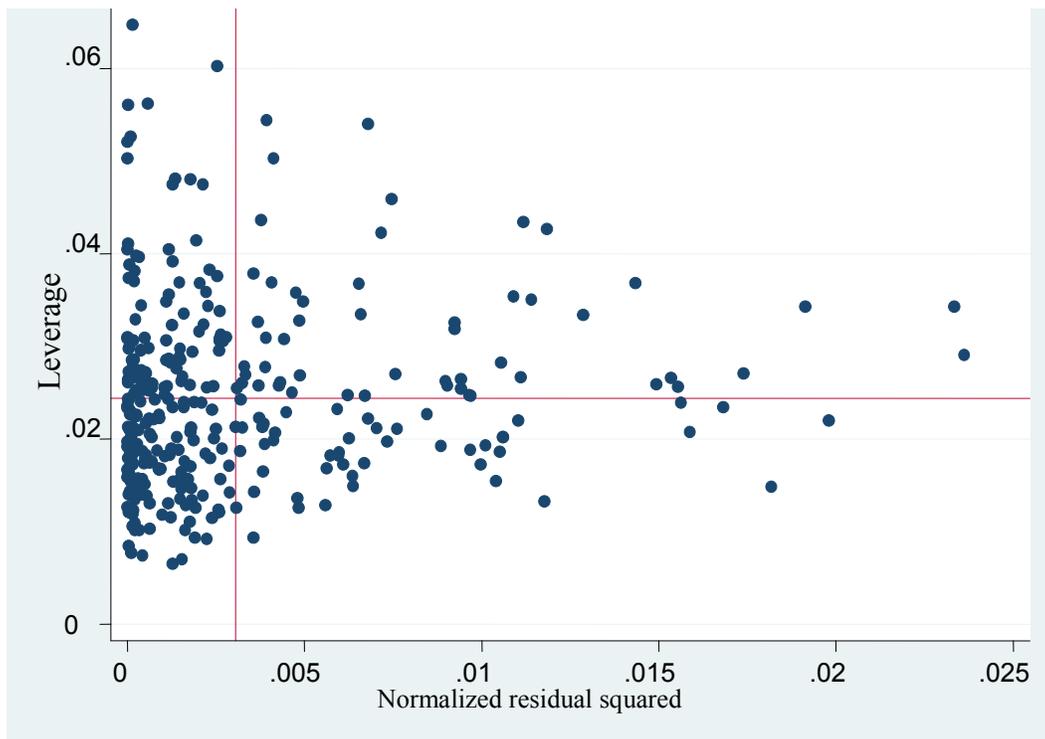


Figure 27 Leverage vs. squared residuals plot of aging best-practices in training.

Exploration to rule out leverage. In the next phase of the diagnostics, I explored the multivariate level in order to determine if any of the particular observations were

influencing the model. If evidence exists of influence, I might misinterpret the regression coefficients. Figure 28 shows a combination of added variable plots that provide a closer look at scatter plots of each independent variable to check for outliers and problems. The lines drawn in the added-variable plots have slopes equal to the corresponding partial regression coefficients for transformed variables *evaluationplus8*, *agingtype*, *ordpercent*, *logplussizeraw15*, *invintensity5*, *squareinput*, and *squareintegration8*. The plots provide an opportunity to see the effect of each variable while controlling for the other variables. “Clustering” or grouping of the data appears in *agingtype* but I expect that in a dichotomous variable. With the exception of some potential influence in *evatulationplus8* seen in an observation lying in the extreme right corner, no other problems stood out upon visual inspection.

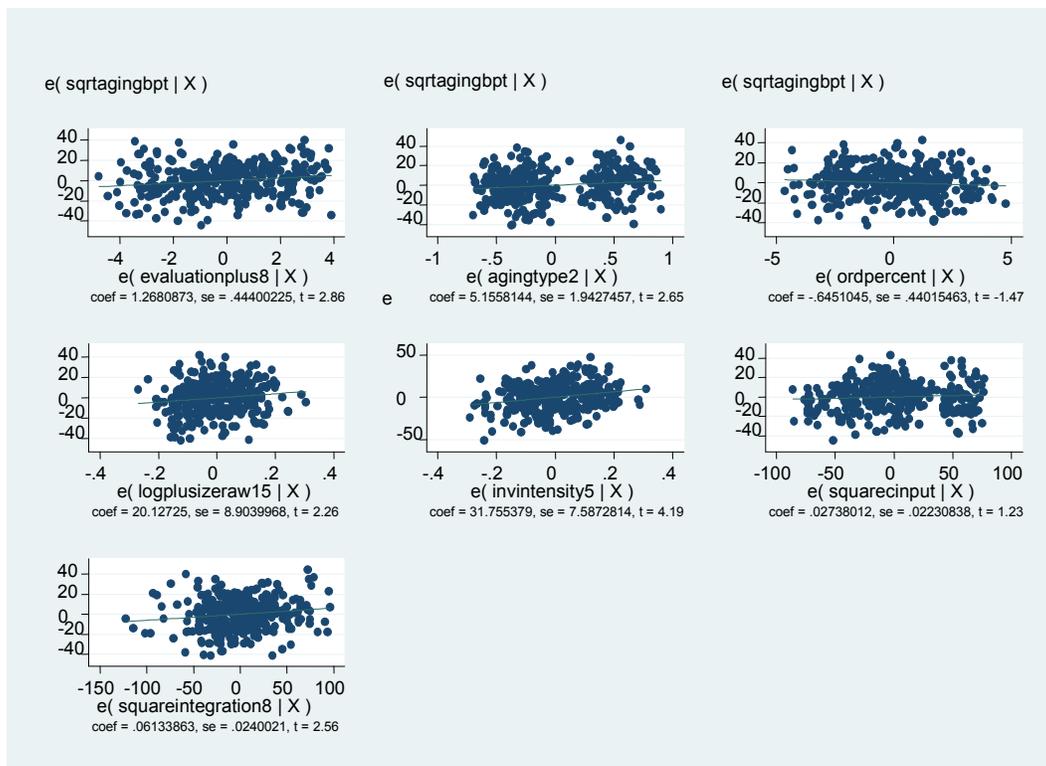


Figure 28 Added variable plots of aging best-practices.

I completed another regression without organization 40. The adjusted R-squared rose to .1928 and the R-squared increased to .2102. However, the coefficient on significant variables *logsize_{raw}* and *agingtype* decreased. I regressed Aging Best-Practices in Training (*agingBPT*) on the independent variables of the model again without organization 64. The adjusted R-squared rose to .1914 and the R-squared increased to .2088. On the other hand, most of the coefficients on significant variables decreased. Because removing the organizations did not improve the model's prediction, I did not eliminate the organizations from the final regression model.

Case statistics on the entire model. In multivariate analysis, influence may result from a combination of values on all variables in the regression rather than unusual values on one or two variables. To explore this possibility, I graphed the residuals versus predicted values for the regression model proportional to Cook's Distance because it measures influence on the model as a whole. Based on the regression of Aging Best-Practices in training on the variables of organization type (*agingtype*), transformed evaluation practices (*evaluationplus8*), transformed organization size(*logsizeplusraw15*), percent of clients with medical assistance as payment (*ordpercentma*), transformed intensity of care (*invintensity5*), transformed care input (*squarecinput*), and transformed DCW integration (*squareintegration*), I generated Cook's D. Cook's D reflects the *i*th case's influence on all *K* estimated regression coefficients or all *n* predicted values of *Y* (Hamilton, 2006). To depict the influence graphically, in Figure 30, I created a residual versus predicted values plot in which symbols are given sizes proportional to Cook's D in order to be able to see potential influence on the entire model.

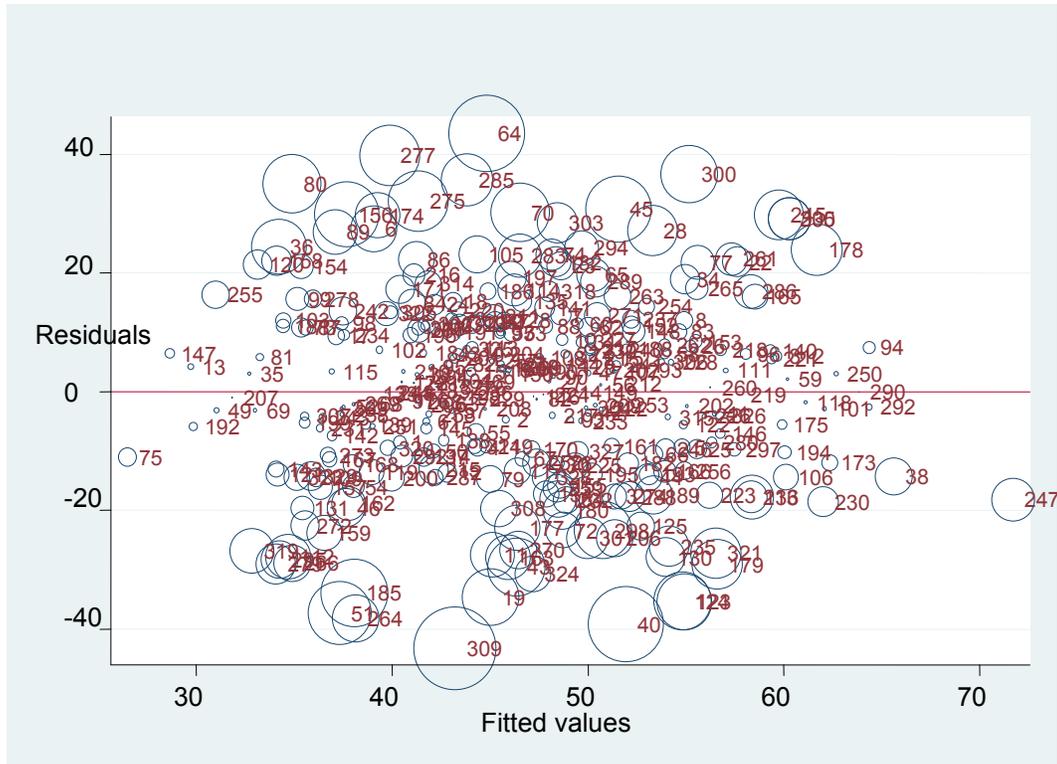


Figure 30 Proportional residuals vs. fitted values plot for aging best-practices model.

I interpret the residuals versus fitted plot to indicate that organizations 309, 40, and 64 may be exerting influence on the entire model. Since the plot is proportional to Cook's D, the plot suggests how much a certain organization influences the regression model as a whole (Hamilton, 2006). In other words, it shows the influence of the observation on predicted values. I completed a regression on the model without organization 309. Removing 309 did not change the regression model since the R-squared only increased a small amount (.006). Moreover, no patterned response of the coefficients of significant variables indicated great influence. Therefore, it does not make sense to remove organization 309 as an outlier.

Conditional effects plots. Conditional effects plots trace the predicted values of Aging Best-Practices in Training (*AgingBPT*) as a function of one x variable in the regression model with all other x variables held constant at means. The conditional effect plot is helpful in interpretation of results from a transformed-variable regression. I completed inverse-transformations in order to better view the variable in the identity units.

In Figures 31 and 32, holding all other variables constant at the mean, the conditional effects plots display the effect of each independent variables with a significant coefficient in the Aging Best-Practices model. I created a conditional effects plot for evaluation practices, type of organization, organization size, intensity, and DCW integration. In the top left corner of Figure 31, evaluation practices predict best-practices. As evaluation practices increase, the aging best-practices in training increase. In the upper right hand corner of Figure 31, the conditional effects plot for Organization Size suggest a rapid improvement in Aging Best-Practices as size increases until the point of about 60 DCW. After approximately 60 DCWs, increasing size does not improve aging best-practices so dramatically. Intensity of Care, depicted in the lower left corner of Figure 31, predicts an improvement in Aging Best-Practices. However, after Intensity of Care equals one, the improvement climbs much slower. After Intensity of Care equals three, the improvement in Aging Best-Practices levels off. Finally, in the lower right corner of Figure 31, Aging Best-Practices do not improve dramatically with DCW integration until DCW integration measures greater than ten. After a DCW integration score of ten, the Aging Best-Practices improve dramatically.

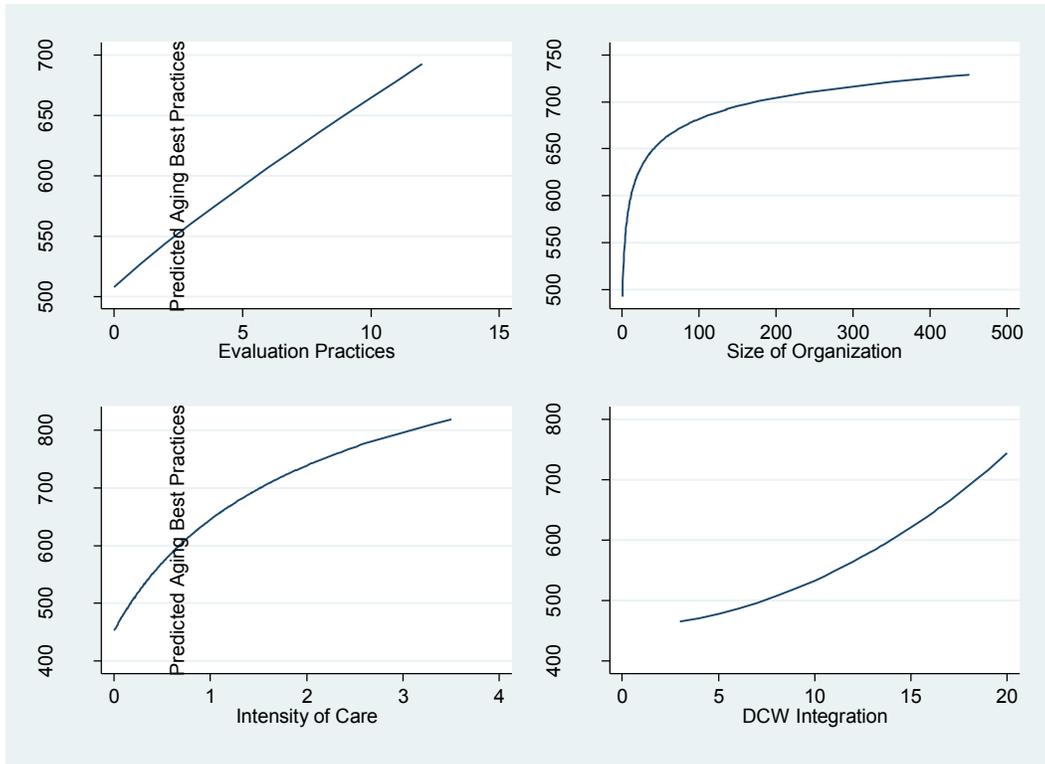


Figure 31 Graphs depicting the conditional effects plots of evaluation practices, size of organization, intensity of care, and DCW integration with predicted aging best practices in training, holding all other independent variables at the mean.

Figure 32 displays the conditional effects of the dichotomous variable type of organization (*agingtype*) on predicted aging best-practices. The conditional effect plot shows that training at an aging network organization is more likely to be best-practices. The graph shows a higher incidence of high aging best-practices scores at aging network organizations than disability network organizations.

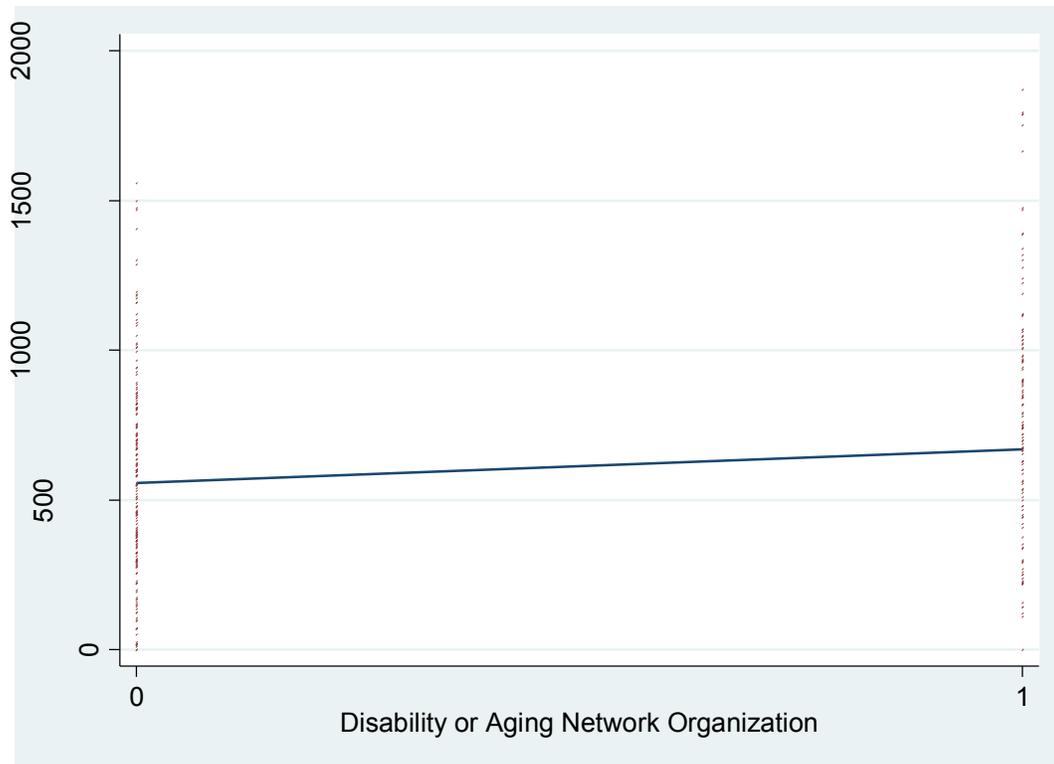


Figure 32 Conditional effects plot of dichotomous variable, type of organization (*agingtype*) and aging best-practices in training where “0” describes disability organizations and “1” describes Aging network organizations.

Disability Best-Practices in Training

In order to analyze the Disability Best-Practices in Training on the dependent side of the regression equation, I used the exact same independent variables as the Aging Best-Practices in Training model. The model shows a statistically significant positive relationship between Y_i transformed Disability Best-Practices in Training (*logsumdisabilitybpt*) and transformed Evaluation ($X_{i1} = \textit{evaluationplus8}$), $X_{i2} =$ Type of Organization (*agingtype*), Percent of Public Assistance ($X_{i3} = \textit{orgpercentma}$), transformed Organization Size ($X_{i4} = \textit{logplussizeraw15}$), transformed Intensity of Care ($X_{i5} = \textit{invintensity5}$), transformed Input into Care ($X_{i6} = \textit{squarecinput}$), and transformed DCW Integration ($X_{i7} = \textit{squareintegration8}$). The regression line is described by Y_i

$(\log\text{sumdisabilitybpt}) = .46 + .14X_{i1} + -0.09 X_{i2} + 0.32 X_{i3} + .44 X_{i4} + + -1.84 X_{i5} + .01 X_{i6} + .49 X_{i7}$. The F-statistic, based upon the sum of squares, is 12.73 with 7 and 320 degrees of freedom, indicates that the null hypothesis should be rejected ($p < .001$). A very low probability exists that the F statistic would be greater if random samples were drawn from a population in which the null hypothesis is true. Given the coefficient of determination, adjusted $R^2 = 0.20$, 20% of the variability of Disability Best-Practices in Training can be explained by the combination of variables in the model.

The coefficients for each of the variables indicate the amount of change seen in Disability Best-Practices in Training given a one unit change in each particular transformed variable. In comparison to Aging Best-Practice Model, the Disability Best-Practice in Training model shows Evaluation (*evaluationplus8*), Percent of Public Assistance (*ordpercentma*), and Input into Care (*squarecinput*) have significant coefficients with a positive influence on the model. Moreover, Intensity of Care (*invintensity5*) has a negative relationship with Disability Best-Practices.

As depicted in Table 41, the coefficients for each of the variables reflect the amount of change seen in Disability Best-Practices given a one unit change in each particular variable while holding all other variables constant. For every unit increase in Evaluation Practices (*evaluationplus8*), there is 0.14 increase in Disability Best-Practices. Moreover, for every unit increase in Percent of Public Assistance (*ordpercentma*), there is a 0.32 unit increase in Disability Best-Practices. Furthermore, a decrease in care intensity results in a 1.84 unit increase in Disability Best-Practices. Counter to logic, whether the organization is an aging network or not does not have a significant relationship to Disability Best-Practices. The positive significant relationship with

Percent of Public Assistance is also puzzling. Theoretically, it makes logical sense that aging network facilities and those dependent upon Public Assistance would be less likely to support Disability Best-Practices in Training.

Table 41

Regression of Disability Best-Practices on Evaluation, Type of Organization, Percent Public Assistance, Size of the Organization, Intensity of Care, DCW Input into Care, Organizational Input, and DCW Integration

Variable	Disability Best-Practices in Training		
	Aging BPT <i>B</i>	<i>B</i>	95% CI
Constant	69.96***	-0.14	[-2.20, 1.92]
Evaluation	1.27**	0.14**	[.04, .23]
Agingtype	5.16**	-0.09	[-.52, .34]
Percent Public Assistance	-0.65	0.32***	[.23, .42]
Organization Size	20.13*	0.44	[-2.73, 1.19]
Intensity of Care	31.76***	-1.84*	[-3.52, -.17]
DCW Input Into Care	0.03	.01*	[0.00, 0.01]
R^2	0.20	.22	
Adjusted R^2	0.19	.20	
<i>F</i>	11.66***	12.63***	

Regression Criticism of Disability Best-Practices

In order to critique the Disability Best-Practices in Training regression model and understand the less than logical results, I begin with a Residuals versus Fitted Plot in order to evaluate the assumptions underlying Ordinary Least Squares Regression, such as normal identical, independent distribution (normal i.i.d), and homoskedasticity.

Homoskedasticity. Upon first inspection of the Residuals versus Fitted Values plot, it is apparent that the residuals are not evenly distributed. A V-shape or crescendo shape in the data with one long line of data in a row is characteristic of heteroskedasticity. Unfortunately, if the assumptions underlying regression have not been

met, then the regression model is questionable . Given this finding, the next step is an inquiry into the univariate level of the dependent variable.

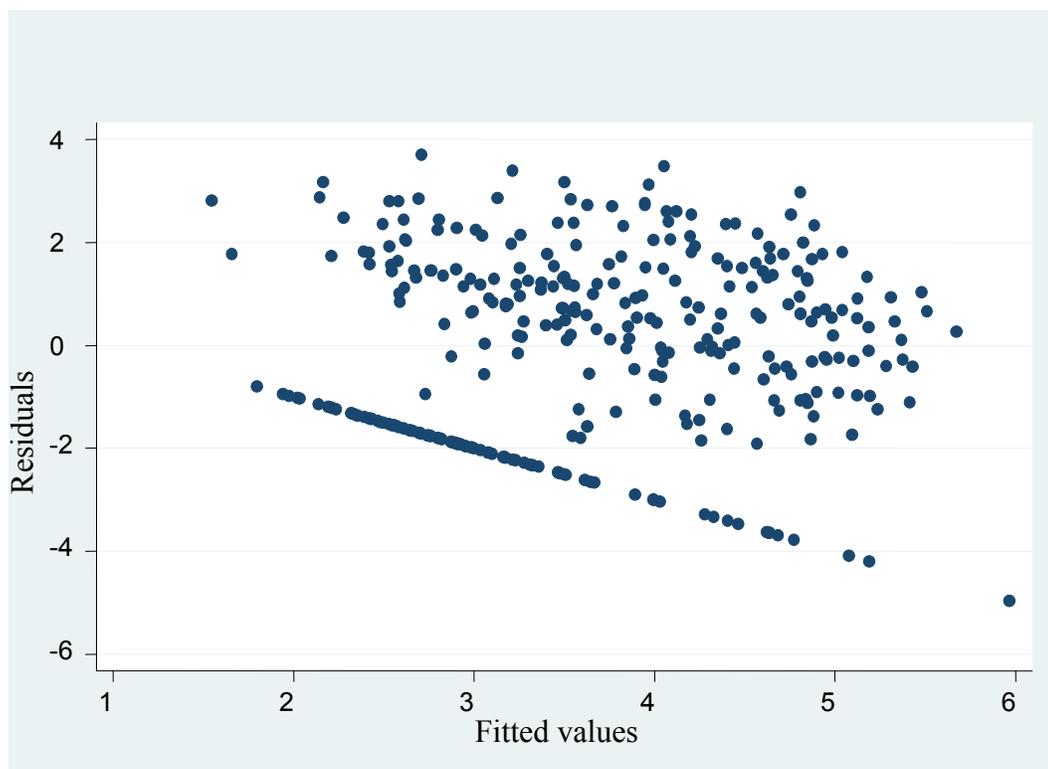


Figure 33 Residuals vs. fitted values plot for the disability best-practices model.

Frequency of *disabilityBPT*. Looking back at the original data, there were 94 organizations that scored a zero on Disability Best-Practices. Since almost one-third of the organizations have a zero score, the assumption of normal i.i.d is violated. In order to discern the relationship of structure and culture in Disability Best-practices, I created a dichotomous variable *yn_disabilityBPT* that measures whether the organization had a score of “0” or “above 0.” In other words, the dependent variable became a choice of “yes” or “no” to the question “does the organization have Disability Best-Practices at all?” Predicted probabilities used in logistic regressions never reach or exceed the boundaries of zero and one. Therefore, logistic regression provides a “more realistic

model” than OLS when the dependent variable is dichotomous (Anderson, 2010; Hamilton, 2006).

Logistic regression of *disabilityBPT*. In Table 42, the logistic regression model suggests a positive relationship between evaluation practices (*evaluationplus8*) and percent of public assistance (*ordpercent*), and Disability Best-Practices (*DisabilityBPT*) exists. Holding other variables constant, for every unit increase in transformed evaluation procedures, an organization is 12% (or 1.2 times) more likely to use Disability Best-Practices (*DisabilityBPT*). For every unit increase in percent of clients who pay public assistance, an organization is 14% (or 1.4 times) more likely to use Disability Best-Practices. The pseudo R-squared in this model is .15, indicating a weak to moderate relationship. The chi square value (chi square = 58.62) is significant at the $p < .05$ level.

Table 42

Logistic Regression of Disability Best-Practices on Evaluation, Type of Organization, Percent Public Assistance, Size of the Organization, Intensity of Care, DCW Input into Care, Organizational Input, and DCW Integration

Disability Best-Practices in Training			
Disability BPT Model			
Variable	Linear Regression β	Logistic Regression Odds Ratio	95% CI
Constant	-0.14		
Evaluation	0.14**	1.74*	[1.03, 1.34]
Agingtype	-0.09	.64	[0.37, 1.12]
Percent Public Assistance	0.32***	1.42***	[0.01, 2.96]
Organization Size	0.44	.20	[-2.73, 1.19]
Intensity of Care	-1.84*	.13	[-3.52, -.17]
DCW Input Into Care	.01*	1.00	[.99, 1.01]
DCW Integration		1.00	[.99, 1.00]
R^2	0.22		
Pseudo R^2		0.15	
Adjusted R^2	0.20		
F	12.63***		
$LR\chi^2(7)$		58.62*	

“Almost” significant coefficients. Z-scores have less accuracy than calculated Chi Square for individual tests. Therefore, I used a likelihood-ratio test to double check the significance of the coefficients of Intensity of Care (*invintensity5*) ($p = .08$) and Input into Care (*squarecinput*) ($p = .07$). The likelihood-ratio test for Intensity results in a chi square of 3.08, $p = 0.08$. The likelihood-ratio test for Input into Care results in a chi square of 3.35, $p = 0.07$. The likelihood-ratio test suggests neither Intensity (*invintensity5*) nor Input into Care (*squarecinput*) is significant.

Correct classification of the model. In order to determine if I excluded any important independent variables from the model, I evaluated the correct classification of the model. According to the results in Table 43, the model correctly classifies 74% of the cases based upon the results. Specifically, 273 of the 328 organizations are correctly classified. The table also displays false positive and false negative classifications. The percentage of false positives for true D is rather high at 64%.

Table 43
Classifications for *Logistic Model of Disability Best-Practices in Training*

Classified	True		Total
	D	-D	
+	212	61	273
-	22	33	55
	234	94	328
Classified + if predicted $\Pr(D) \geq .5$	True D defined as $YN_DisabilityBPT = 0$		
Sensitivity	Pr (+ D)	90.60%	
Specificity	Pr (- -D)	35.11%	
Positive Predictive Value	Pr (D +)	77.66%	
Negative Predictive Value	Pr (-D -)	60.00%	
False + rate for true ~D	Pr (+ ~D)	64.89%	
False - rate for true D	Pr (- D)	9.40%	
False + rate for classified +	Pr (~D +)	22.34%	
False - rate for classified -	-Pr (D -)	40.00%	

Logistic regression curve. The logistic regression curve in Figure 34 also supports this understanding. A 45 degree line in the plot would equal a zero probability of correct classification. Therefore, the percent below the curve is used as the predictive power of the model. In this situation a value of .5 would provide no predictive power and a 1 would be a perfect prediction. Therefore, an area of .75 below the curve shows good predictive power.

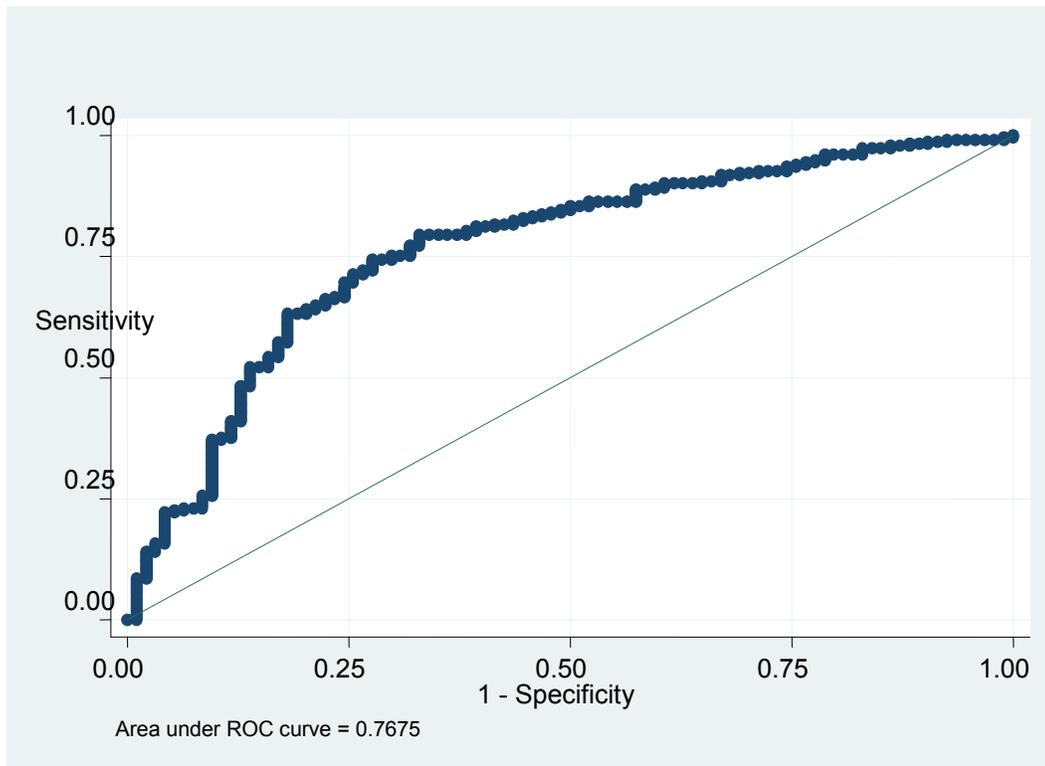


Figure 34 Area under the curve for logistic regression.

Logits as linear function of the independent variables. In order to evaluate the linearity of the logits (Hamilton, 1999), I used a Goodness of Fit Test. Depicted in Table 44, the goodness of fit test (Probability > Chi-squared = .06) is not significant. The failed test suggests a linear model.

Table 44

Logistic Model for *DisabilityBPT*, Goodness-of-Fit Test

Group	Probability	Obs 1	Exp1	Obs 0	Exp 0	Total
1	.52	26	28.3	40	37.7	66
2	.68	38	40.1	28	25.9	66
3	.81	52	47.9	13	17.1	65
4	.91	61	57.0	5	9.0	66
5	.98	57	60.7	8	4.3	65
Hosmer- Lemeshow	Chi Square	7.28	P> chi2 =	0.06		

Susceptibility to outliers. In order to test for outliers, I used a change in deviance–predicted probability graph. Figure 35 indicates a number of false positives (they are zero but they are predicted to be one). To determine which organizations may have influence, I graphed the influence with identifier numbers of organizations. According to the Figure 36, organization 36 and 298 may be influential in the top right corner and left of the graph.

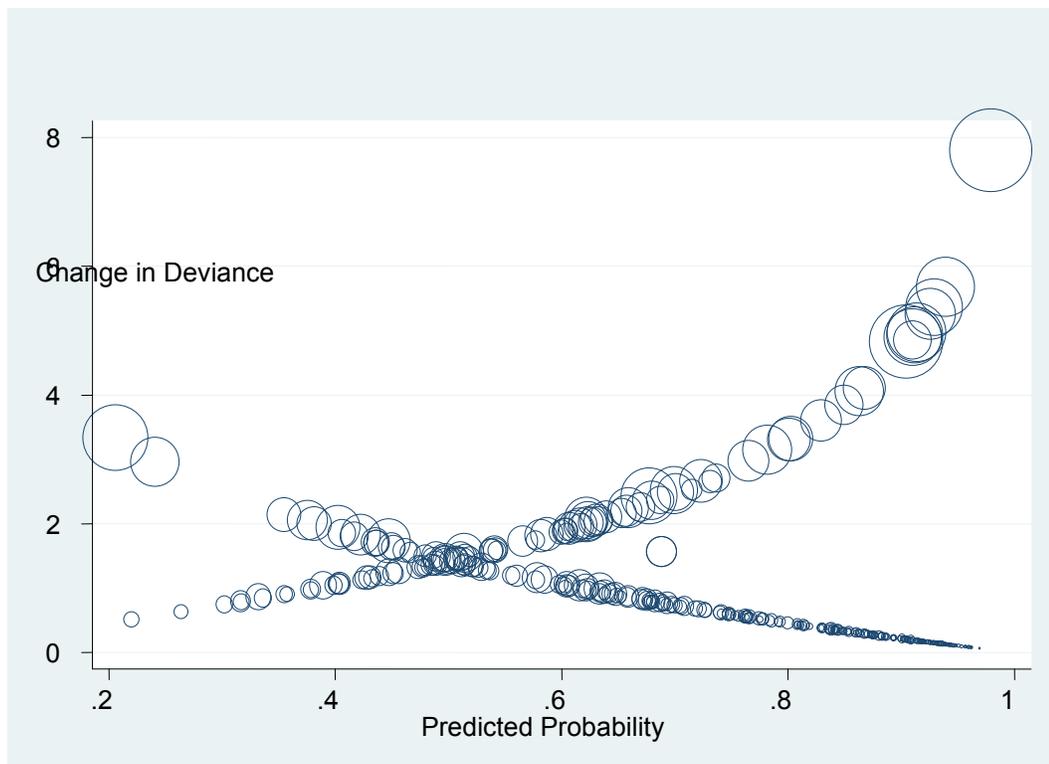


Figure 35 Change in deviance vs. predicted probability of logistic regression.

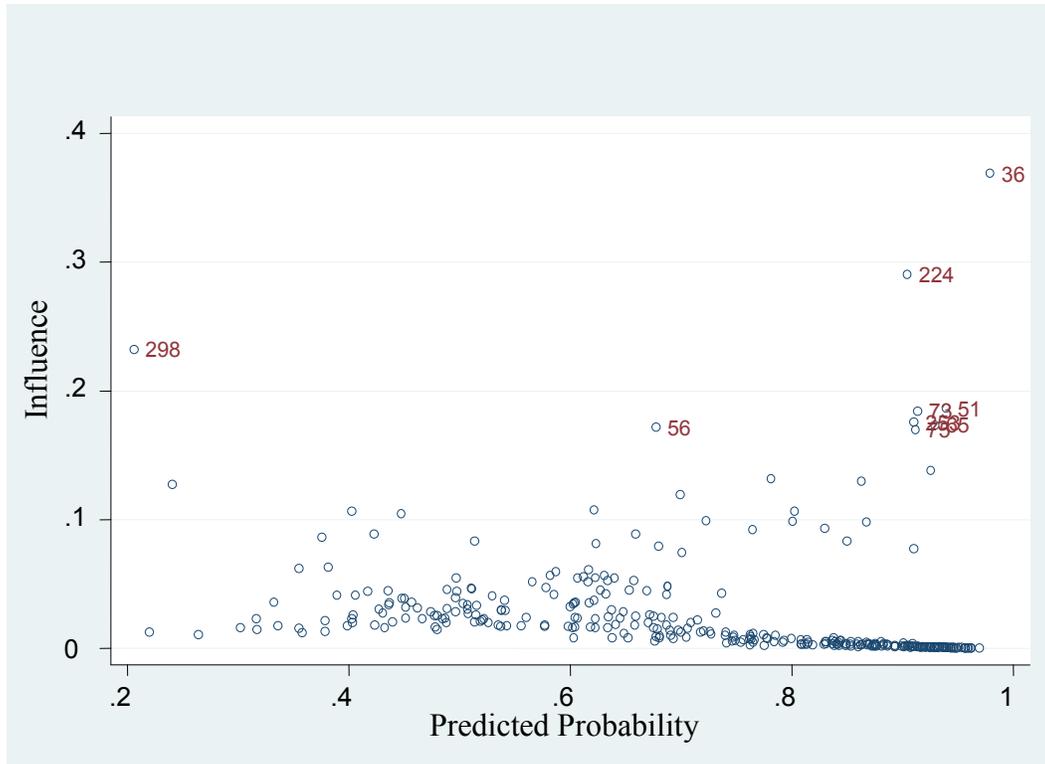


Figure 36 Predicted probability vs. influence displays pattern to identify most influential organization.

In order to investigate the influence on the model, I conducted the Logistic Regression without them to determine the effect. As seen in Table 45, the pseudo R-squared improves and both intensity and care input become significant when organization 36 is removed. However, the new significant values do not have practical significance. Therefore, no compelling theoretical or practical evidence exists to drop organization 36.

Table 45

Logistic Regression of Disability Best-Practices on Evaluation, Type of Organization, Percent Public Assistance, Size of the Organization, Intensity of Care, DCW Input into Care, Organizational Input, and DCW Integration without Organization 36

Variable	Disability Best-Practices in Training		
	Model 1 Odds Ratio N= 328	Model without Org 36 N= 327	95% CI
Evaluation	1.74*	1.20*	[1.04, 1.37]
Agingtype	.64	.64	[.37, 1.13]
Percent Public Assistance	1.42***	1.44***	[1.25, 1.66]
Organization Size	0.20	0.15	[.01, 2.40]
Intensity of Care	0.13	0.10*	[.01, 1.00]
DCW Input Into Care	1.00	1.00*	[1.00, 1.01]
DCW Integration	1.00	1.00	[.98,1.00]
Pseudo R ²	0.15	0.16	
LR chi2(7)	58.62***	64.23***	

Note: * p< .05 ** p<.01 *** p<.001

Organizations that Complete Some Disability Training

I used OLS regression again in order to explain the mechanisms operating in organizations that complete any Disability Best-Practice in Training. Table 46 shows the results of the regression of the organizations with *disabilityBPT* greater than zero on the same independent variables from the first model. Controlling for all other variables, in the data for 234 organizations that conduct some training in Disability content areas, the regression shows a statistically significant ($F = 4.19$, $p < .001$) positive relationship (Adjusted $R^2 = .09$) between Percent of Public Assistance (*ordpercentma*) and transformed Disability Best-Practices (*logdisabilityBPT3*). Given the coefficient of determination, adjusted $R^2 = .09$, 9% of the variability in Disability Best-Practices is explained by the regression model.

Table 46 displays the regression model which shows a statistically significant positive relationship between Y_i transformed Disability Best-Practices in Training ($Y_i = \logdisabilitybpt3$) and transformed Evaluation ($X_{i1} = evaluationplus8$), Type of Organization ($X_{i2} = agingtype$), Percent of Public Assistance ($X_{i3} = orgpercentma$), transformed Organization Size ($X_{i4} = \logplussizeraw15$), transformed Intensity of Care ($X_{i5} = invintensity5$), transformed Input into Care ($X_{i6} = squarecinput$), and transformed DCW Integration ($X_{i7} = squareintegration8$). The regression line is described by Y_i ($\logdisabilitybpt3$) = 2.85 + .05 X_{i1} + .32 X_{i2} + .15 X_{i3} + .20 X_{i4} + -.98 X_{i5} + X_{i6} - X_{i7} .

Table 46

Comparison of Regression of Disability Best-Practices on Evaluation, Type of Organization, Percent Public Assistance, Size of the Organization, Intensity of Care, DCW Input into Care, Organizational Input, and DCW Integration with and without Zero Best-Practice Organizations

Variable	Disability Best-Practices in Training		
	Disability BPT Model 2		95% CI
	<i>DisabilityBPT</i> Model 1 <i>B</i> N=328	<i>DisabilityBPT</i> Model 2 <i>B</i> N=234	
Constant	-0.46	2.98*	[1.22, 4.48]
Evaluation	0.14**	0.05	[-.02, .13]
Agingtype	-0.09	0.32	[-.02, .67]
Percent Public Assistance	0.32**	0.15***	[.08, .23]
Organization Size	0.44	0.20	[-1.30, 1.70]
Intensity of Care	-1.84*	-0.98	[-2.31, .35]
DCW Input Into Care	0.01*	0.00	[-.00, .01]
DCW Integration	-.00	-0.00	[-.00, .00]
R^2	0.22	0.11	
Adjusted R^2	0.20	0.09	
<i>F</i>	12.63**	4.17***	

In Figure 37, the Residuals versus Fitted Values plot for the regression model of Disability Best-Practices in Training suggests non-patterned spread of residuals, indicating homoskedasticity or no cause for concern about assumptions.

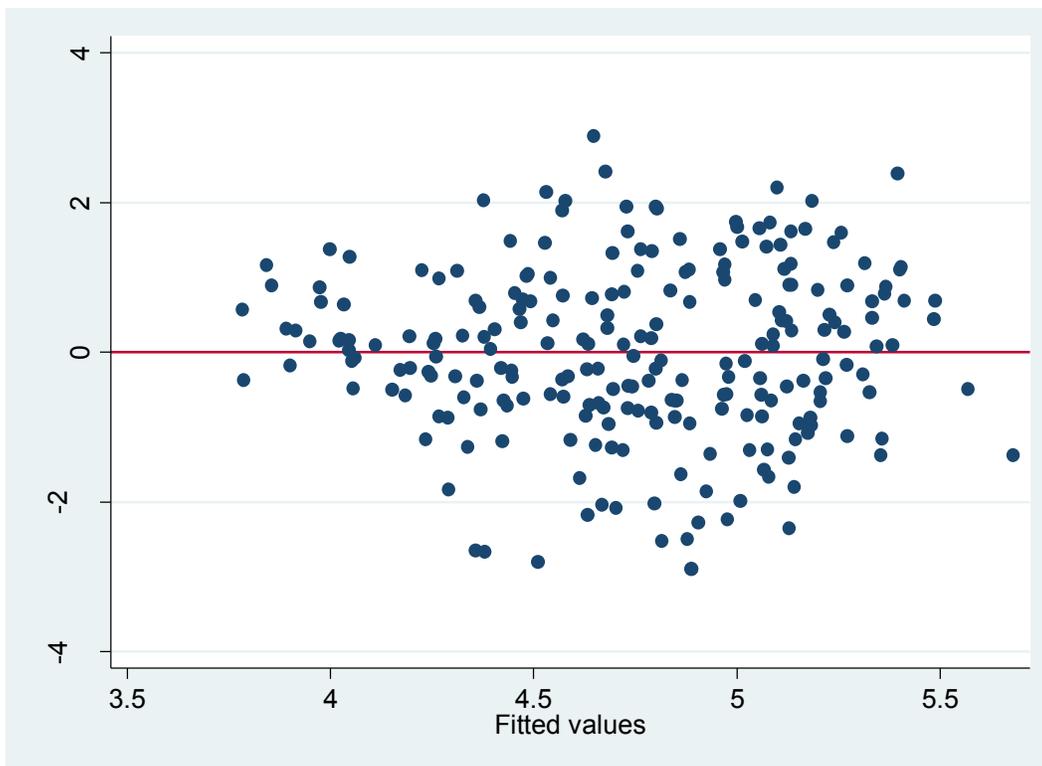


Figure 37 Residuals versus fitted values of organizations that complete some disability training.

Universal Best-Practices in Training

For the purpose of comparison, it seemed important to investigate the relationships between structural and cultural variables and Universal Best-Practices in Training, including: 1) person-centered care, 2) consumer-driven care, 3) need-driven behaviors, 4) sexuality, and 5) substance abuse. As seen in the exploratory factor analysis thoroughly explained in the methods section, the “universal” items have an eigen value over 1 and a moderately high alpha.

OLS regression modeling. Table 47 displays the regression model that indicates a statistically significant positive relationship between Y_i transformed Universal Best-Practices in Training ($Y_i = \text{sqrtuniversalbpt}$) and transformed Evaluation ($X_{i1} = \text{evaluationplus8}$), Type of Organization ($X_{i2} = \text{agingtype}$), Percent of Public Assistance

($X_{i3} = \text{orgpercentma}$), transformed Organization Size ($X_{i4} = \text{logplussizeraw15}$), transformed Intensity of Care ($X_{i5} = \text{invintensity5}$), transformed Input into Care ($X_{i6} = \text{squareinput}$), and transformed DCW Integration ($X_{i7} = \text{squareintegration8}$). The regression line is described by $Y_i (\text{sqrtUniversalBPT}) = 9.36 + .37X_{i1} + .98 X_{i2} + .19 X_{i3} + 4.87 X_{i4} + -.18 X_{i5} + .01 X_{i6} + .0 X_{i7}$. The F-statistic, based upon the sum of squares, is 6.93 with 8 and 319 degrees of freedom. Consequently, I reject the null hypothesis ($p < .001$). There is a very low probability that the F statistic would be greater if random samples were drawn from a population in which the null hypothesis is true.

Given the coefficient of determination, adjusted $R^2 = .11$, 11% of the variability of Universal Best-Practices in Training can be explained by the combination of variables in the model. The coefficients for each of the variables indicate the amount of change seen in Universal Best-Practices in Training given a one unit change in each particular variable. Evaluation, aging network organizations, Percent of Public Assistance, Organization Size and Care Input all have a positive significant ($p < .05$) relationship with Universal Best-Practices in Training.

For every unit of increase in transformed evaluation (evaluationplus8), there is a .37 increase in transformed Universal Best-Practices (sqrtuniversalbpt). For every increase in amount of aging network organizations (agingtype), there is a .98 increase in transformed Universal Best-Practices. For every unit of increase in percent of public assistance predicts a .19 increase in transformed Universal Best-Practices. For every unit increase in transformed Organization Size (logplussizeraaw15), transformed Universal Best-Practices increases by 4.87. A positive relationship exists between Input in Care and

Universal Best-Practices. However, for every unit increase in transformed Input (*squareinput*), the Universal Best-Practices only improve by .01.

Table 47

Regression Universal Best-Practices in Training on Evaluation, Type of Organization, Percent of Public Assistance, Intensity of care, Care Input and DCW Integration.

Variable	Best-Practices in Training Models			95% CI
	Universal Best-Practices Model			
	<i>AgingBPT Model B N=328</i>	<i>DisabilityBPT Model 2 B N=234</i>	<i>Universal BPT Model B N=328</i>	
Constant	69.96***	2.85*	9.36***	[5.62, 13.10]
Evaluation	1.27**	0.05	0.37***	[.20, .55]
Agingtype	5.16**	0.32	0.98*	[.20, 1.76]
Percent Public Assistance	-0.65	0.15***	0.19*	[.02, .37]
Organization Size	20.13*	0.20	4.87**	[1.30, 8.43]
Intensity of Care	31.76***	-0.98	-0.18	[-3.22, 2.86]
DCW Input Into Care	0.03	.00	0.01*	[.00, .02]
DCW Integration	0.06*	-.00	0.00	[-.01, .01]
R^2	0.20	0.12	0.13	
Adjusted R^2	0.19	0.09	0.11	
F	11.66***	4.19***	6.93***	

Regression diagnostics for Universal Best-Practices in Training. Just as with the other two models, it is important to determine if the assumptions of OLS have been met. Figure 38 shows the residuals versus fitted plot for the model. Based upon the straight line pattern in the bottom of the plot, the plot suggests a mild amount of heteroskedasticity in the model.

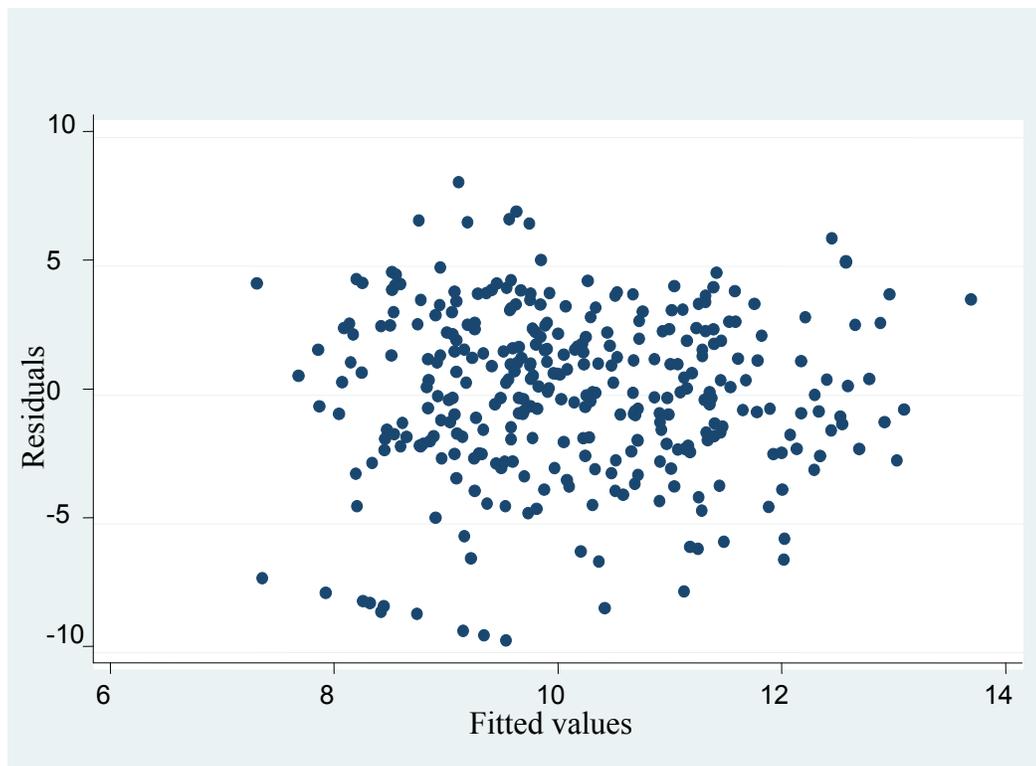


Figure 38 Residual versus fitted values plot of organizations completing universal training.

In order to uncover the reason for the heteroskedasticity, I examined the data for *sqruniversalbpt* and found 12 organizations with zero as their Universal best-practice score. To a lesser degree than in Disability Best-Practices, a percentage of organizations offer no training in Universal topic areas at all. Table 46 shows the result of the regression that includes only organizations with some training in Universal Best-Practice areas. In the column for Universal Best-Practices Model 2, evaluation practices and organization size are significant ($p < .05$) but the adjusted R-squared suggests that this model only explains 7% of the variance.

Table 48

Regression Universal Best-Practices in Training on Evaluation, Type of Organization, Percent of Public Assistance, Intensity of care, Care Input and DCW Integration for Organizations that Provide Some Universal Training

Variable	Best-Practices in Training Models				95% CI
	AgingBPT Model N=328		Universal Best-Practices Model N=328		
	DisabilityB PT Model 2 B N=234	Universal BPT Model B N=318	Universal BPT Model B N=318	Universal BPT Model B N=318	
Constant	69.96***	2.85*	9.36***	11.17	[7.83, 4.52]
Evaluation	1.27**	0.05	0.37***	.24**	[.078, .40]
Agingtype	5.16**	0.32	0.98*	.51	[-.19, .21]
Percent Public Assistance	-0.65	0.15***	0.19*	.14	[-.01, .30]
Organization Size	20.13*	0.20	4.87**	4.4**	[1.25, 7.59]
Intensity of Care	31.76***	-0.98	-0.18	0.89	[-1.85, 3.63]
DCW Input Into Care	0.03	.00	0.01*	0.007	[-.00, .02]
DCW Integration	0.06*	-.00	0.00	0.004	[-.00, .01]
R^2	0.20	0.12	0.13	0.09	
Adjusted R^2	0.19	0.09	0.11	0.07	
F	11.66***	4.19***	6.93***	4.35***	

Note: * p< .05 ** p< .01 *** p< .001

Testing of Hypotheses

Table 49 summarizes the independent variables in the final regression model in relation to each of the dependent variables. Controlling for all other variables, the various independent variables (evaluation, aging or disability network, percent public assistance, organization size, intensity of care, DCW input into care, and DCW integration) explain the most variance (R^2 adjusted = 19%) in best-practices in the Aging Best-Practices model. This table will be used in order to provide a detailed description to determine where the quantitative results fail or support the rejection of the null hypotheses.

Table 49
Independent Variables in Multivariate Analysis

Variables	Best-Practices in Training Models				
	<i>Agingbpt</i> OLS <i>Model</i> <i>B</i> <i>N=328</i>	<i>Disabilityb</i> <i>pt</i> OLS <i>Model 2</i> <i>B</i> <i>N=234</i>	<i>Disabilitybp</i> <i>t</i> LR Model Odds Ratio N=328	<i>Disabilitybp</i> <i>t</i> LR Model 2 without Org 36 N= 327	Universal OLS BPT Model 2 N=318
Constant	69.96***	2.85*			11.17
Evaluation	1.27**	0.05	1.74*	1.20*	.24**
Agingtype	5.16**	0.32	.64	.64	.51
Percent Public Assistance	-0.65	0.15***	1.42***	1.44***	.14
Organization Size	20.13*	0.20	0.20	0.15	4.4**
Intensity of Care	31.76***	-0.98	0.13	0.10*	0.89
DCW Input Into Care	0.03	.00	1.00	1.00*	0.007
DCW Integration	0.06*	-.00	1.00	1.00	0.004
R^2	0.20	0.12			0.09
Adjusted R^2	0.19	0.09			0.07
Pseudo R^2			0.15	0.16	
F	11.66***	4.19***			4.35***
Chi^2			58.62***	64.23***	

Note: * $p < .05$ ** $p < .01$ *** $p < .001$

Structural Aspects and Best-Practices in Training

Evaluation. Null Hypothesis 1: Evaluation practices are not related to the Best-Practices in Training Index scores. The quantitative results provide support for rejecting the null hypothesis. In all final regression equations for Aging, Disability, and Universal Best-Practices in Training, the coefficient on evaluation was significant (at least at the $p < .05$ level). For every unit increase in evaluation practices, controlling for all other variables, there is a 1.27 unit increase in Aging Best-Practices and a .24 unit increase in Universal Best-Practices. For every unit of increase in evaluation practices, an organization is 12% (or 1.2 times) more likely to use Disability Best-Practices.

Aging or Disability Network. Null Hypothesis 2: Whether an organization is part of the aging network (or not) has no bearing on the Best-Practices in Training Index

scores. The quantitative results support rejecting the null hypothesis in part. Aging network membership has a positive significant relationship ($p < .01$) with Aging Best-Practices in Training. Controlling for all other variables, as aging network membership rises, Aging Best-Practices improve by 5.16 units. Surprisingly, aging network membership has no relationship with Disability Best-Practices in Training or Universal Best-Practices in Training.

Percent of Public Assistance Payer Mix. Null Hypothesis 3: The percent of public assistance payments to an organization has no relationship with Best-Practices in Training. For Disability Best-Practices in Training, sufficient evidence exists to reject the null hypothesis. For Aging and Universal Best-Practices in training, the null hypothesis is not rejected. A significant positive relationship ($p < .001$) exists between percent of public assistance payments and Disability Best-Practices in every regression equation. Based upon the logistic regression reported in Table 42, controlling for all other variables, for every unit of increase in percent of public assistance payment, an organization is 15% (or 1.5 times) more likely to use Disability Best-Practices. In the OLS models with and without organization 36, controlling for all other variables, for every unit increase in percent of public assistance payment, there is a 1.42 unit increase in Disability Best-Practices.

Organization Size. Null Hypothesis 4: The size of an organization (total number of direct care workers in organization) has no relationship with Best-Practices in Training. Sufficient evidence exists to reject the null hypothesis for Aging Best-Practices in Training ($p < .05$) and Universal Best-Practices in Training ($p < .01$). Based upon the OLS regression model, controlling for all other variables, for every unit that size

increases, Aging Best-Practices in Training improves by 20.13 units and Universal Best-Practices in Training improve by 4.4 units. Moreover, when other variables are held constant, the conditional effects plot indicates that organization size influences Aging Best-Practices intensely until the size reaches approximately 60 DCWs. As seen in Figure 31, after about 60 DCWs, there is a leveling off of the influence of organization size on Best-Practices.

Intensity of Care. Null Hypothesis 5: The intensity of care has no relationship with Best-Practices in Training. Sufficient evidence exists to support rejection of the null hypothesis regarding intensity of care and Aging Best-Practices in Training. All other variables held constant, with every unit increase in the Intensity of Care, the model predicts an increase of 31.76 units ($p < .001$) in Aging Best-Practices. In Figure 31, the conditional effects plot shows that Intensity of Care predicts a climb in Aging Best-Practices until Intensity equals three. Between an Intensity score of one and three, Aging Best-Practices climb with a less steep slope. After a score of three on Intensity of Care, a leveling off occurs with the prediction of Aging Best-Practices. Intensity of care may also have a relationship with Disability Best-Practices but that is less substantiated. After the removal of organization 36, the odds ratio becomes significant. However, the model predicts that organizations with higher Intensity of Care are 10% less likely to have Disability Best-Practices in training.

Cultural Aspects

DCW Input into Care. Null Hypothesis 6: DCW Input into Care (*cinput*) has no relationship to Best-Practices in Training. Some evidence exists to suggest a rejection of the null hypothesis with regard to Disability Best-Practices. In the logistic regression

model of Disability Best-Practices, with the removal of organization 36, Input into Care has a positive significant relationship ($p < .05$) with Disability Best-Practices in Training. However, the value has no practical significance. Therefore, the null hypothesis cannot be rejected without a doubt.

Organizational Input. Null Hypothesis 7: DCW input into organizational decisions (*orginput*) has no relationship to Best-Practices in Training. In this case, the null hypothesis cannot be rejected. Organizational Input (*orginput*) variable was dropped from the regression model fairly early on because it was determined that the variable did not add to the model. Hamilton (1992) argues for parsimony of the model without leaving out an important variable. In this case, *orginput* only added complexity without any improvement in the model.

DCW Integration. Null Hypothesis 8: DCW integration into the organization has no relationship to Best-Practices in Training. There is some evidence to support rejecting the null hypothesis with regard to Aging Best-Practices in training. The coefficient on DCW integration is positive ($p < .05$) but very small (.06). Controlling for other variables, for every unit increase of DCW integration, Aging Best-Practices in Training increases by .06 units.

Interaction of Structure and Culture

Interaction hypotheses. Null Hypothesis 9: Structural and cultural characteristics of provider organizations do not interrelate in shaping training practices. No evidence supports rejecting the null hypothesis for any of the interactions between structural and cultural characteristics of provider organizations in shaping training practices.

Content Analysis of Open-Ended Responses

I used both the content of the response and the general magnitude of the responses in order to evaluate the relationship of structural/cultural issues and best-practices in training. In order to measure perceived needs and challenges, I asked responding organizations two open-ended questions: 1) “What are the 5 biggest challenges in delivering training to direct care service workers at your organization (e.g., technology, financial support, training materials, time, support from supervisors)?” 2) “What would you say are the top 5 learning needs of the direct care workers in your organization?”

Challenges

Scheduling and finances. As depicted in Table 50, the open-ended comments can be grouped according to emphasis. The two challenges most often highlighted concern scheduling and financial issues with training. These two items seem interrelated since administration elaborated on the problems with scheduling training for DCWs during their normal work day. Due to call-outs or lack of coverage on the floor, supervisors cannot have DCW attend training during their shift. Therefore, it becomes necessary to pay them over-time to attend training. Moreover, organizations often struggle to afford adequate materials and trainers.

DCW’s attitude. Administrators also perceive another prominent challenge to be DCW’s attitude and educational attainment. As one administrator suggested, it is challenging to “convince them they do not know it all.” The tone of this comment and many others seems antithetical to an adult learning philosophy that seeks to empower DCWs from an area of strength. Some of the respondent’s language suggests that

administration attributes challenges in training to the DCWs themselves or to the lack of support from external sources.

Regulatory requirements. From some facilities, another barrier to best-practices in training concerns the regulatory requirements. With categorization, an overall impression emerges that in the perception of the administration the Department of Public Welfare creates challenges to training with new training regulations. Very few comments focus on what administration could be doing better. As seen in Table 50, every variable in the regression equation, on both the dependent and independent side, was included in one way or another as a challenge in training delivery. Challenges mentioned by administration include content, method, frequency, duration, evaluation, intensity of care, finances, size, and cultural issues.

Table 50
Content Analysis of Administrative Perceptions of Five Biggest Challenges in Training Delivery to Direct Care Workers

Most Emphasis to Least Emphasis	Theme	Specific Quotations	Variable in Regression Equation
1 86/303 28.3% of first responses	Time and Scheduling Staff resources	Time off for staff to attend: scheduling “Time away from resident care” “Covering staff” “Minimizing pulling staff away from consumer” “Lack of flexibility in work schedule to accommodate training” “Trained people to provide coverage” “Hard to meet individual staff needs” Time to plan training: “Time to plan and implement topic” Time related to coordination: “Distance of workers from central	Best-Practices in Training: Duration and Frequency and structure: Intensity of Care

		location” “Hard to coordinate training times” “Hard to handle shifts/reschedule missed trainings”	
2	Financial resources	Overtime “No budget to pay overtime for workers to attend” “Paying overtime so they will come” Money for Materials or Trainer Financial support lacking for materials, trainer Money for technology-projector, computers Getting affordable speakers “more free trainings are needed”	Percent of medical assistance, Medicaid waiver and SSI as primary payment
3	Cultural	Issues with staff “Us-Them” Perceived by administration Problems with DCW attitude or motivation for training	
		Staff attitude and motivation “Staff’s attitude about training” DCWs “uncooperative” about training “compliance of staff not working” is a challenge” “unwillingness to attend training” “convincing them they don’t know it all” “DCW placing value on trainings” “apathy” “Direct Care Staff do not show interest” “Coverage-it is hard to cover training if we get call outs” “Differences in educational levels of employees” “Turnover” “ After work, they are too tired” “Many staff just don’t care to learn” “ Generation Y staff don’t understand”	
4	Issues with training itself: Lack of Trainers	Resources: “Do not have place to have training” “Quality of trainers to train” “lack of qualified trainers to come and go”	Structural Human and Physical Resources
5	Issues with location	Location: “Limited outside trainings in our area” “Very little training offered in our area” “Rural area with little options” “Transportation to training is a problem”	Structural Geography
6	Content	Challenged by content requirements	Best-

		<p>“Compliance with PA Dept of Welfare training requirements for Personal Care”</p> <p>“Mandated trainings sap time/ resources”</p> <p>“Unclear regulations”</p> <p>“Don’t like being prescribed what to do-prefer individual approach”</p> <p>“Diverse enough to encompass all”</p> <p>“Topics that hold attention of staff”</p> <p>Need for relevant current content</p> <p>Variety to relieve boredom</p> <p>Specialized training for pertinent topics</p>	Practices in content
7	Methods	<p>Need for Better Methods:</p> <p>Finding quality training materials</p> <p>Available training does not meet adult learning needs</p> <p>Creative learning approaches</p> <p>Poor quality of video tapes available</p> <p>“It’s hard to meet everybody’s needs”</p> <p>Many trainings are repetitive</p> <p>Technology:</p> <p>Comfort level of staff using technology</p> <p>Technology for keeping track of training</p>	Best-Practice in Training methods
8	Materials	<p>Resources for training</p> <p>Obtaining quality materials</p> <p>“finding updated material”</p> <p>Relevant materials</p>	Best-Practices in curricular materials
9	Differences in individual DCW needs	<p>Orientation vs. On-Going Training</p> <p>Overload during orientation</p> <p>On-going training is difficult</p> <p>“older staff feel that they already have the knowledge and do not need training”</p>	Best-Practices in content
10	Size of Facility	<p>Limitations of small size:</p> <p>“It is hard to provide all the trainings yourself when you are a small organization”</p> <p>“ being a small pch [personal care home]”</p> <p>“We are small-no staff development nurse.”</p>	Duration frequency Size
11	Issues with supervisors	<p>Support for Training:</p> <p>Supervisor support</p> <p>“Supervisors need to lead and set example”</p> <p>Support from department heads throughout facility</p>	Cultural
12	Issues with evaluation transfer	<p>Measuring Training Transfer:</p> <p>“Need for follow-up after training to make a real change”</p>	Evaluation

13	Intensity of care	“evaluate effectiveness” “measuring return on investment” “making caregivers implement trainings” “Acuity of facility limits time off floor” [for training]	Intensity of care
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Challenges sorted by aging best-practice score. I further categorized the responses by the organization’s best practice in training score for Aging Best-Practices and Disability Best- Practices. The mean score for Aging Best-Practices was 647.37 with a range of scores from 0 to 1871. When I sorted all the open-ended responses for the organizations with a score over 1000 on the Aging Best-Practices Index, I found similar challenges in the organizations among those who had high Aging Best-Practice scores. The best-practice organizations’ responses included the topic areas not seen in lower scoring organizations: 1) support of supervisors, 2) scheduling supervisors to attend trainings, 3) making the training relevant to DCW, and 4) outcomes evaluation.

Challenges sorted by disability best-practice score. Using the same sorting and categorizing procedure with the high Disability Best-Practice scores, the mean Disability Best-Practice score was 161.17 and the scores range from 0 to 936. When I compared the open-ended responses of the organizations that had high (score > 500) and low Disability Best-Practice scores (score < 100), I found little difference. Disability Best-Practice organizations with a high score appeared to indicate a slightly more positive organizational culture, such as the concern with “generalizing information learned at training” and “support from supervisors.”

Perception of Needs

The administrative perspective on the greatest needs in delivery of training to Direct Care Workers is summarized in Table 51. The content themes group well into four

content segments. First, many of the themes involve the need for training in resident-specific conditions such as dementia or mental health. High emphasis on the need for training exists in aging/gerontology and dementia. The second emerging theme from the list of open-ended comments concerns training in Universal care practices. The third most repeated theme concerns the inclusion of life skills training for DCWs. Finally, a few of the administrative comments involved methods or frequency in training. The vast majority of comments on “needs in training” concern need of “content.”

Table 51

Content Analysis: Administrative Perspective of Five Greatest Needs in Training Direct Care Workers

Emphasis	Theme	Content areas Matching Dependent Variable Factor Loadings
	Resident-specific conditions	
High	Aging/gerontology	Aging Best Practice
High	Alzheimer's/Dementia	Aging Best Practice
	Autism	Disability Best Practice
	Cerebral Palsy	Disability Best Practice
	Dementia and Down syndrome	Combination of Disability/Aging
	Dementia and developmental disabilities	Combination of Disability/Aging
	Depression	Aging Best-Practice
	Diabetes	Not covered specifically
	End-of-Life Care	Aging Best-Practices
	Fall prevention	Not covered specifically
	Incontinence care	Not covered specifically
	MR/MH diagnosis	Disability Best Practice
	Mental Health	Not covered specifically
	Universal Practice Issues	
	Abuse and resident rights	Not covered
	Activity Planning	Partially covered in Physical Activity
	Basic care skills	Not covered
	Beside manner	Universal Best Practice
	Community inclusion	Not covered
	Consumer-driven decision making	Universal Best Practice
High	Dealing with challenging resident client Behaviors	Universal Best Practice
	Empathy	Not covered specifically

High	Evidenced-based practices	Not asked specifically
	Health Promotion	Aging Best Practice
	CPR First Aide AED	Not covered
	Lifting, transfers, body mechanics	Not covered
	Medication Administration	Not covered
	Nutrition	
	Person-centered care	Universal Best Practice
	Resident Rights	Not covered
	Safety	Not covered
	Sexuality	Universal Best Practice
High	Substance Abuse	Universal Best Practice
	Understanding diversity	Not covered
	Life-Work Skills	
	Assertiveness	Not covered
	Balance Work and Home Issues	Not covered
	Being a team player/team work	Covered partially in cultural scale
	Conflict Resolution with staff, family, supervisor	Covered partially in cultural scale
	Dependability	Not covered
	Documentation (English as Second Language)	Covered partially in cultural Scale
	Etiquette and manners	Not covered
High	“How to be a responsible employable adult”	Not covered
	Interpersonal skills/communication	Not covered directly
	Leadership/Critical Thinking	Not covered directly
	Professionalism	Not covered
	Reading/writing English	Not covered
	Stress management	Not covered
	Technology (computer)	Not covered
	Time management	Not covered
	Methods	
	Hands-on	Covered in method categories
Materials	Covered in method categories	
High	Frequency	
	Need more frequent meetings	Covered in frequency question

Conclusion of Results

The results section contains a large amount of information concerning both the quantitative and qualitative analyses conducted in this research in order to evaluate the

hypotheses of the study. I summarize the results in sections on descriptive analysis, exploratory analysis, regression analysis, and hypothesis testing.

Descriptive Analysis

First, I described the organizations in the sample to understand the big picture of the organizational characteristics. Understanding the organizations' network, size, and participation in training provided a framework for determining further aspects to explore. A few issues stand out as noteworthy. Over one-third of the organizations have less than 20 DCWs employed. Moreover, more organizations report "intensity" of care related to serving residents with dementia rather than the physical aging issues typically associated with chronic health issues. Because of the populations served, the intensity measure may actually describe psychological workload just as much as physical workload. Second, early in the exploratory analysis, I saw indications that aging and disability network organizations had difference in training practices. Therefore, I completed a detailed descriptive analysis in order to learn about how both aging network organizations to disability network organizations facilitated training programs by frequencies of content, amount of sessions, duration of sessions, and method used. Overall, these analyses revealed that aging network organization pursue best-practices more frequently than disability network organizations. The perceived relevance of the content area to the staff may play a role in the decision-making about training practices.

Exploratory Analysis at the Univariate Level

In order to better understand the distributional shape before continuing multivariate analyses, I explored each variable on the univariate level. Prior to including the variable in the regression model, I used power transformations for almost every

dependent and independent variable. Table 37, a summary chart of the transformations helps identify names of variables and what they measure.

Regression Analysis

For the dependent variables Aging Best-Practices in Training and Universal Best-Practices in Training, I used ordinary least squares regression. In order to evaluate whether the assumptions for OLS were met, I used a series of regression diagnostics to evaluate the residuals, and assess concerns such as homoskedasticity, multicollinearity, and influence on variables and the model as a whole. For Aging Best-Practices in Training, the assumptions of OLS were supported. For Universal Best-Practices in Training, I identified heteroskedasticity as a problem. For Disability Best-Practices, I used Logistic Regression analysis in order to examine Disability Best-Practices as a dependent dichotomous variable. As a result of these analyses, it became clear that Aging Best-Practices, Disability Best-Practices and Universal Best-Practices operate very differently.

Aging best-practices. I found that as evaluation practices, number of aging network organizations, organization size, intensity of care, and DCW integration increase, the Aging Best-Practices in Training Index improves.

Universal best-practices. When including only organizations that do some training in Universal content area, a positive relationship exists with organization size and evaluation practices.

Disability best-practices. Without the 94 organizations that do no Disability Training, the OLS regression model indicates that as percent of public assistance payment increases, the Disability Best-Practices in Training Index improves. In the

logistic model with Disability Best-Practices, without a very influential outlier, a relationship exists between Disability Best-Practices and evaluation procedures, percent of public assistance, intensity of care, and input into care. However, little practical significance of the input into care or intensity of care exists. None of the interaction terms showed a significant relationship with Best-Practices in Training.

Conditional effects. Analysis of the conditional effects plots revealed several issues with Aging Best-Practices in Training: 1) As evaluation practices increase, Aging Best-Practices in Training improve linearly; 2) The conditional effects plot with Intensity of Care suggests that as the intensity of care increases between 0 and 3, Aging Best-Practices dramatically increase. After 3 units of intensity, the improvement to Aging Best-Practices levels off and does not grow as quickly with the increase in intensity.; 3) Aging Best-Practices increase exponentially as the size of the organization increases until about 60 DCWs. The size of the organization has less impact on improvement of the Aging Best-Practices beyond 60 employees; 4) Between three units and ten units of DCW integration, the increase in Aging Best-Practices is slower. After about 10 units of DCW integration, the increase in Aging Best-Practices is more pronounced with every unit of integration.

Null Hypotheses Rejected

Table 52 visually displays the predictors of Best-Practices in Training. Based upon the results presented above, I reject the null hypotheses regarding the influence of evaluation practices, type of facility, organization size, intensity of care, and DCW integration on Aging Best-Practices in training. Moreover, I reject the null hypotheses regarding the influence of evaluation, and percent public assistance on Disability Best-

Practices in training. Finally, I reject the null hypotheses regarding the influence of evaluation, organization size, intensity of care, and input into care on Universal Best-Practices in training. Evaluation practices remain the only predictor that shows a relationship with best-practices in every regression equation.

Table 52
Predictors of Best-Practices in Training

Variables	Best-Practices in Training Models				
	<i>Aging</i> OLS <i>Model</i> <i>B</i> N=328	<i>Disability</i> OLS <i>Model 2</i> <i>B</i> N=234	<i>Disability</i> LR Model Odds Ratio N=328	<i>Disability</i> LR Model 2 without Org 36 N= 327	Universal OLS BPT Model 2 N=318
Evaluation	*		*	*	*
Agingtype	*				
Percent Public Assistance		*	*	*	
Organization Size	*				*
Intensity of Care	*			*	
DCW Input Into Care					
DCW Integration	*				

Qualitative Analysis

The findings from the content analysis support the quantitative results. The contrast between best-practice organizations and those that score lower on the best-practice score is found in evaluation practices and supervisor support.

Challenges in training. Many of the same issues emerge in the open-ended comments as the quantitative data. A very few, probably those who value outcomes evaluation, comment on the challenge of good evaluation in the facility. According to the open-ended responses, the smaller size of an organization makes training challenges more acute. Perhaps an “economy of scale” exists in a larger facility in which more people would be available to teach and to cover while DCW attended a training session.

Intensity in care seems directly related to content areas listed. Intensity in care may have

a positive relationship with Best-Practices because the more the intense the care, the more training on the topic is perceived as “needed” or relevant. Finances emerge clearly as an important concern. Respondents seem concerned about paying money for new materials. The lack of time for training and problems with schedule dominates the answers. Scheduling problems also relate to duration. The administrator finds it easier to provide coverage for a 30 minute session than for half a day. More frequent training on different shifts would alleviate this problem but would cost even more in terms of human resources. Another common theme concerns comments that DCW express apathy with a poor attitude toward training. In part, the “us-them” sentiment, alienation between administration and DCW, emerges through their word choice. This “alienation” is the antithetical concept to DCW integration.

Needs in training. Administration perceives the highest needs in content to be aging, dementia, and behaviors. The majority of the comments focus on content areas. Other content areas mentioned include communication and team-building for DCWs. These content areas tie into input and integration in the organization. Only a very few respondents answer the open-ended question with attention to method and frequency. Not one respondent mentions duration. The majority of the respondents equate better training with more videos and materials or covering more content rather than innovative ways of assuring training transfer on-the-job.

CHAPTER V

DISCUSSION

Introduction

Using the conceptual model of social structure and personality framework as a theoretical guide, this study examined how organizational structure and culture relate to practices for training direct care workers in aging and disability network service provider organizations. The current “care gap,” created partially by organizational problems in retaining or recruiting adequate numbers of direct care workers (DCWs) in our country, indicates the significance of the research questions for organization leaders and policy-makers. In the coming years, precipitated by demographic changes, the “care gap” will only widen as available DCWs decrease and care needs increase. The empirical literature about service provider organizations (SPOs) attests to the relationship between DCW retention and training practices as well as structural and cultural dimensions. However, a paucity of research exists regarding the relationship between structural and cultural factors and best-practices in training of DCWs in SPOs. Therefore, this research proposed to fill this void by answering three research questions: 1) How are structural characteristics of service provider organizations related to best-practice in DCW training? 2) How are cultural characteristics of service provider organizations related to best-practice in DCW training? 3) How do the structural and cultural characteristics of service provider organizations interact to shape best-practice in DCW training?

Following these research questions, from a synthesis of the empirical and theoretical literature, I first delineated a list of best-practices in training DCWs. I operationalized the best-practices to formulate a best-practice index in order to quantify

the extent of best-practices in an organization. From a synthesis of the literature, I also described structural aspects of import including: evaluation, organization type, percent of public assistance, organization size, and intensity of care needs. To develop a scale measuring cultural aspects, I relied on several instruments already developed in the empirical literature. Through a review of the theoretical literature on organizational culture theory, interactionism, and conflict theory, I adapted the items to this particular context at an organizational level of analysis.

In answer to the question regarding the relationship of structural characteristics of SPOs and best-practices, I discovered the predictors of best-practices, depending on the type of best-practice include: evaluation practices, network-type, payer-mix, the organization's size, and intensity of care need. Answering the second research question, the respondent's perception of the DCWs input into care and DCW integration presented as the cultural predictors for best-practices in training. In response to the third research question, I found no interaction between structural and cultural variables in relation to best-practices in training.

Organizational Structure and Best-Practices in Training

The first research question this study examines concerns how structural characteristics of SPOs relate to best-practices in DCW training. The results indicate that the structural predictors of best-practices in training include: 1) the organization's level of evaluation of training; 2) the type of network the organization is in (Aging or Disability); 3) the percent of public assistance in the payer mix; 4) the size of the organization; and 5) the intensity of clients' care needs.

Evaluation Practices

In this study, regardless of the content-area of best-practice, an organization's level of evaluation predicts best-practices in training. In the measure of evaluation practices, higher order evaluation practices (Kirkpatrick & Kirkpatrick, 2006), such as outcomes evaluation, received a higher weighting than the process of collecting training reactions or attendance. Emerging from the qualitative comments, one of the main differences between lower and higher best-practice organizations involved a heightened awareness about the need for evaluation in the high best-practice organizations. For example, best-practice organizations shared the need to show a "return on investment" and "follow-up after training to see a change." Certainly, higher quality evaluation of training requires some expertise in methodology and theoretical understanding (Dionne, 1996). In order to complete an organizational learning needs assessment that translates back to changes in training, an organization needs a level of expertise, at some level of human resources. Kettner, Moroney, and Martin (1999) suggest four levels of need that should be assessed to inform an organization's training practice strategy: 1) normative need; 2) perceived need; 3) expressed need; and 4) relative need. In order to move past the normative need, or training specifications established by authority, an organization needs a person with expertise to unearth perceived and expressed needs. Moreover, understanding relative need requires the ability to compare training practices with other effective organizations in a bench-marking strategy (Keehley, Medlin, & MacBride, 1997).

Network of the Organization

The network of the organization predicts best-practices in training. Although membership in the aging network has a positive relationship with Aging Best-Practices, it does not have an inverse relationship with Disability Best-Practices. The reasons for this disparity involves the overall lack of disability training.

Lack of disability training. Relatively few organizations, even those in the disability network of providers (PDN), complete training on disability-specific topics. In fact, almost one-third (n=94) of all organizations in the sample do not cover the disability content at all. Even if they covered the content area, organizations, in short, did a poor job delivering training on developmental disabilities. With the exception of the “Mental Retardation” content area best-practice score, PDN did not score much higher on the other developmental disability focus areas such as “Autism Spectrum Disorder Best-Practices in Training,” or “Down syndrome Best-Practices in Training.” Moreover, PDN organizations scored several points lower on the best-practices training indicator than PAN on “Cerebral Palsy Best-Practices in Training.” In a recent study (Mabry & Kemeny, in press), found that current required training does not include many of the best-practice content areas. In the open-ended responses, administrative personnel expressed a high need for more training in the area of dementia, physical aging, and behaviors. Ironically, in the Providers of Aging Network (PAN) at least, these areas already have the highest content best-practice indicator scores. For Providers of Disability Network (PDN), a growing awareness exists of the need to promote staff development in physical aging and behavioral interventions. However, for administrative personnel in both

networks, training needs relating to specific developmental disabilities do not even register on their radar screen.

Funding Sources

A difference exists in funding mechanisms for client care between the disability and aging networks. First, a comparison of the two networks reveals that providers in the disability network (PDN) receive a higher mean percentage of public assistance payments ($m = .64$) than providers in the aging networks (PAN) ($m = .51$). In addition, more than double the PDN ($n = 18 / 126, 32.17\%$) receive 100% of their income from public assistance payments than PAN ($n = 65 / 202, 14.28\%$). Second, the majority of PDN receive payments through “waiver” funding, also known as the Medicaid Home and Community Based Waiver Program in Pennsylvania.

Within PAN, depending on the particular setting, organizations may receive a combination of “waiver funding” for adult day services or medical assistance payments for skilled nursing care. In PAN, further complexities of the funding structure exist. For example, medical assistance payments, a per diem rate, to skilled nursing organizations vary by regional area and vary by the mix of intensity of needs of clients. The amount of waiver payments concerns individual-level need for services. Therefore, since this study’s measure for payer-mix has more validity in the disability network, it seems appropriate that the percent of public assistance becomes a clearer predictor of best-practices in PDN.

Complexity and Scale

Organizational size can impact the amount of staff members who may be available for specialized training roles (Weber, 1946). A plot of the data manifests the

curvilinear relationship that organizational size has with best-practices. As the size goes up, best-practices improve dramatically, then level off at about 60 DCWs, as the number of DCWs continues to increase. From a resource perspective, smaller organizations cannot afford a staff member who devotes all her/his time to training. The smaller the organization, the more roles each staff member plays. As one organization explained, “it is hard to provide all the trainings yourself when you are a small organization.” The concept in micro-economics of economies of scale and scope (McGuillan, Moyer, & Harris, 2007) suggests that there are organization-level economies as the size increases. The ability to hire more specialized labor and to improve information gathering are two of the advantages to increasing size (McGuillan, Moyer, & Harris, 2007).

Intensity of Care

When viewed on a conditional plot, intensity of care shows a curvilinear relationship with best-practices. Controlling for other variables, as intensity of care increases, best-practices increase until intensity equals three, (or the point at which the number of clients with intense care needs triple the total number of clients). Until the point that most clients/residents in an organization have multiple care needs, “relevancy” for certain topics, such as physical aging or dementia, remain extremely high for staff, and administration provides training on the content area. To a certain point, the more relevant a current problem on the organizational level, the more likely it is to be offered by administration. Qualitative analysis of the open-ended responses also supports the idea that “relevancy” creates an awareness of a training need. Some respondents suggest the “relevancy” factor in that they offer certain trainings “as needed” or as “the need arises.” For example, 72.89% (n=239) of the organizations had at least one resident with

dementia but only 59% had at least one resident who is non-ambulatory. Based upon the findings in the open-ended comments, one of the most frequent “needs” experienced by respondents concerns the dementia content area. Although administration perceives it as a need, most organizations provide some training resources to teach the dementia content already. In the content-specific best-practice scores, *Dementiabpt* has the highest mean score ($m= 127.82$) for PAN and one of the higher scores for PDN ($m= 92.01$). It follows that as administration perceives the need in the facility, they find the resources for a training to inform DCWs and deal with problems.

On the other hand, as the Intensity of Care grows beyond three, the barriers to adequate scheduling and coverage for training manifest themselves. After a certain point, Intensity of Care’s influence on Best-Practices levels off because of the stress and time constraints related to caring for residents/clients with acute physical and emotional needs. One respondent explains, “acuity [of clients/residents] in the facility limits the time off floor.” After the value of intensity rises beyond three, suggesting organizations who serve individuals with multiple intense needs (dementia, bedfast, non-ambulatory), best-practices do not climb at as a rapid pace. These findings imply that at a certain intensity level, the time and complexity of care creates a barrier to training delivery. The direction of influence remains unclear in this case: 1) Is it the stress from intense care needs that decelerate the improvement in best-practices in care or 2) Is there a cyclical aspect in which the stress of intense care needs limit time for training and the lack of training makes intense care needs more stressful after a certain point? No matter the direction, a relationship certainly exists between intense care and best-practices that levels off when care needs get extensively complex.

Organizational Structure and Resources for Training

Structural components, or material resources of the work situation, combine to influence Best-Practices. When synthesizing both the quantitative and qualitative findings concerning each hypothesis about structure (evaluation, network type, percent of medical assistance, organization size, and intensity of care), several overarching concepts emerge that explain the structural influence on best-practices. These concepts include: human, time, and financial resources as well as the relationship with the external environment. Since structural predictors do not influence the Aging Best-Practice index and Disability Best-Practice index in exactly the same way, an explanation of these differences require a nuanced understanding of structural components.

Human Resources

Human resources, related to several of the structural variables, have relevance to training practices. The availability of quality personnel impacts evaluation practices. Moreover, organization size influences the amount and quality of training personnel available. The amount and expertise of individual staff members devoted to training may impact the quality.

Initially, I expected that organizational size would have an inverse relationship with best-practices related to structural complexity. However, empirical research identifies a more complex relationship between size and managerial effectiveness (Scott, 2003). Research grounded upon Weber's (1946) original concept of bureaucracy found that organizational size contributes to structural complexity (Hall, Johnson, & Haas, 1967). On the other hand, application of managerial economics suggests that size increases the scale of operations to allow for more efficiencies in an organization

(McGuigan, Moyer, & Harris, 2007). Blau (1970) reconciles the contradiction by arguing that increasing size only increases complexity if the heterogeneity of the work tasks increase. As long as the work-task remains homogeneous, size improves organizational efficiencies. The measure of organizational size in this study reflected only a homogeneous work task, direct care work. We only collected information about DCWs. On the survey, we did not ask organizations to provide the amount of total employees. DCWs tasks remain fairly homogeneous throughout the organization. Otherwise, we do not know about differentiation of tasks in the organization.

Yukl's (2006) organizational theory echoes this situational complexity as he considers the work task, the situation, and the leader in determining effectiveness. In this study, due to the ability of larger facilities to afford human resource support, I suggest increasing size of the DCW population improves best-practices to a certain point. Sixty DCWs does not seem like an insurmountably complex number of staff to manage. However, organizations with approximately 60 staff may have human resources devoted to training.

In a larger organization, a devoted training person may provide: 1) more alternatives for content-offerings; 2) increased opportunities for shorter duration training; 3) more frequent trainings; and 4) a comprehensive training strategy complete with quality evaluation. Training quality suffers and training efforts become fragmented when the person responsible for training has many other job tasks. A "compliance-only" mentality arises in organizations where "training coordinators" have many competing issues for their attention.

Time Available for Training

Time for training, a theme that emerged from the qualitative analysis, relates to the quantity of human resources. Time also has a relationship to intensity of care, the acuity of the clients/residents in the organization. Beyond the “compliance training” aimed at meeting regulations that varies by setting, administration prioritizes additional staff development based on decision-making. In a sort of informal “cost-benefit analysis” that administrators participate in everyday, relevancy to organizational problems translate to a willingness to provide time for that training topics. The qualitative analysis of the open-ended comments provides a depth of understanding of administration’s perceptions. The lack of time available for training due to client need as well as scheduling issues create barriers to quality training. At a very high level of intense care needs, clients need more constant attention from DCWs. If DCWs receive training “off the floor,” coverage of the clients’ needs during training sessions becomes problematic. The other alternative concerns over-time pay, or time and a half, for staff to attend training. Another component of scheduling training involves staffing patterns. If the organization has high absenteeism or turnover rates, scheduling staff development becomes almost impossible for administration. High absenteeism and turnover creates the need to hire current DCW for over-time to provide coverage for client needs, leaving less staff time and money for staff development. At the same time, turnover generates a higher need for orientation training sessions for new employees rather than in-depth training on best-practice areas.

Funding Available for Training

According to the qualitative findings of this study, the lack of available funding can limit best-practices. Several respondents commented that they “lack funding” for -

staff development. Organizational size and percent of public assistance in the payer-mix may impact funding available for training. Financial support typically impacts trainer time, materials, and training technologies. As mentioned above, as the organization size increases, economies of scale in the organization may make more money available for staff development. Furthermore, the payer-mix of an organization may influence the financial resources available for training. Originally, I expected that as the percent of public assistance payments increased that Best-Practices would decrease. I based this hypothesis on the fact that skilled nursing facilities receive a lower per diem rate for individuals on medical assistance than those on private pay. However, no unifying system of payer-mix actually exists in the aging network as a whole, creating a complex situation. On the other hand, Disability Best-Practices index shows improvement as the percent of public assistance increases. Perhaps Aging network organizations that receive a higher percent of public assistance have more exposure to individuals with developmental disabilities, creating a higher relevance for training on disability content areas. Moreover, the primary funding source's close relationship to regulatory requirements for training may have more influence on training practices than the payer-mix itself. Although organizational size may afford more resources and certain regulatory requirements apply pressure, investing financial resources of an organization into staff development ultimately rests on the administration's priorities.

External Environment

Another aspect that characterizes the material structure of the organization (Scott, 2003) concerns the external environment. The external environment, including the differences in stakeholders and networks, impacts best-practices in training. In the

qualitative comments, administrative comments reveal a priority of content over methods in staff development. When asked about pressing needs in training, respondents overwhelmingly list content issues.

External stakeholders. One obvious reason that administration focuses on content over method concerns the process of evaluation by external stakeholders, such as the surveyors from the Department of Aging. These evaluations examine whether the organizations offer required training, not the quality of the training. Therefore, external pressure exists only to substantiate DCWs attendance at training on specific content rather than to show outcomes from the staff development program as a whole. Moreover, no positive motivational incentive for training in best-practices exists; the organization receives a deficiency only without proof of covered content. External stakeholders do not ask for outcomes evaluation tied to training. With limited resources, an organization's leader may choose to use financial resources in ways that please external stakeholders rather than seek the best quality staff development.

Summary. Structural components, material resources in the organization, include human, time, financial resources and relations with the external environment. These resources relate to best-practices in training in varied ways. Evaluation practices, organization size, and intensity of care have a positive relationship with best-practices to a certain point. Qualitative analysis of the administration's comments confirm that financial decisions play an important role in staff development practices. However, in this study, the quantitative measure of financial resources, payer-mix, did not sufficiently measure the aspect of finances related to organizational resource allocation decision-making. The manner in which each of the structural variables influence organizational

resources and interactions with the external environment complement an understanding of the complex relationships between structure and best-practices in training.

Organizational Culture and Best-Practices in Training

The second research question addressed in this study concerns how cultural characteristics of service provider organizations relate to best-practice in DCW training. In general, the cultural predictors for best-practices in training are the respondent's perception of the DCW input into care and DCW integration. The dimensions of DCW input into care and integration involve supervisor respect for DCW input and decision-making.

Opportunities for Decision-Making

In a health care setting, invitation, attendance, and participation of DCWs at goal-setting conferences, called "care conferences" or "individual service planning" reveals the administration's value of DCW knowledge or expertise with regard to the individual client. DCW invitation and participation at care planning meetings seems antithetical to a high reliance on the medical model and professional expertise. If a person in administration has a "medical model" perspective on training, scientific expertise and credentials in care decisions also seem most important. The supervisor's behavior may reflect the belief that the "expert" knows best with no need to seek the input of the DCW (West, Griffith, & Iphofen, 2007). Input into Care showed a positive relationship with Disability Best-Practices but no relationship with Aging Best-Practices. In a scan of the Aging Best-Practice concepts, most concepts concern physical health or clinical concepts. Perhaps organizations with high Aging Best-Practice scores also increased involvement with the medical model culture. In contrast, many of the Disability-practice areas are

related to a social model. Based upon the “medicalization” concept which suggests an over-emphasis on the medical model (Delmouzou, 2008), the subtle effect of these values in an organization may create either a barrier to DCW’s input into care or an opening for DCW decision-making.

DCW Integration into the Organization

DCW integration concerns the DCW’s lack of conflict, involvement, and support in the environment. DCW’s involvement, support, and respect in an organization predicts Best-Practices in Training. The more often DCWs have positive relationships in the organization, the more likely that the administration will be made aware of the DCWs true learning needs. Otherwise, the administration makes training decisions somewhat removed from DCW’s development needs. Kirkpatrick & Kirkpatrick (2006) consistently reinforce the crucial role of involving the “trainee” in the process.

Integration also involves supervisor support. The more support supervisors show for staff development, the more successful the logistics of training. In the qualitative results, only the organizations which scored high on best-practices indicated an awareness of the need for supervisor support for training. Instead of perceiving the DCW as capable of only “bed and body work” (Gubrium, 1973), in an organization with supervisor support, supervisors treat DCW as integral parts of the team. Inherent in the concept of integration, exists the idea of creating “community” between supervisors and DCWs. Orloff (2006) calls these “valued resources” (p. 73), such as respect and time, for any level in the organization. Supervisor support might extend to issues of scheduling and coverage in order to make training attendance realistic for individual DCWs. Since the 1960s, empirical studies (Likert, 1967) have linked organizational effectiveness and

positive relationships in the workplace including: 1) decision-making and control (Hatton et al., 2001; Schmid, 2002; Strouse et al., 2003); and 2) opportunities for an exchange of information among equals (Irvine et al., 1999; Pillemer et al., 1998; Zimmerman et al., 1992).

Opportunities to Gain Power through Information

Organizations that score low on best-practices in training either do not include certain content areas or simply present the content without utilizing best-practices in delivery. In contrast, organizations that score high on best-practices attempt to empower DCW with new information and by the process of delivering that information. Cook & Yanow (1993) and Schein (1992) equate orientation training with acculturation. The content chosen and the manner of delivery determine the new DCW's introduction to beliefs and values in the organization. Schein (1992) finds culture manifest in symbols and rituals in an organization. Formal acculturation occurs through training on policy and procedures provided during orientation. Informal acculturation occurs in the relationship-building during the session. The values and beliefs of the organization manifest themselves in the on-going training practices. By involving staff in decision-making about their own needs for staff development, administration allows the DCW to have some power and control.

Conflict

In a fairly large body of the open-ended comments about challenges to training, respondents describe an "us-them" culture in which administration perceives the DCW attitudes and lack of motivation as a barrier to training implementation. One respondent describes her/his relationship with DCWs as a challenge to "convince them that they

don't know it all." Other comments also echo this alienation between the administration and the DCW. Trying to convince DCWs that they "don't know it all," seems antithetical to participant-centered training, driven by adult learning theory. This "us-them" mentality also suggests an expert-referent (Macheracher, 2006) power differential based on knowledge. Bourdieu (1980) describes these power differentials or inequities as deeply internalized and accepted by both the DCW and the administration. The information sharing and the decision-making process in an organization reveals the most about power differences (Pfeffer, 2005).

The Role of Culture in Training DCWs

The theoretical dialectic of conflict and integration, suggested by early theorists such as Durkheim (1933) and Marx (1975), undergird an explanation of the relationship of best-practices in training and the DCW's input into care decisions and integration into the organization. Internal social conflict within organizations, often initiated during orientation through informal and formal acculturation, manifests itself through lack of respect and interest in the DCW's individual needs, experience, and abilities.

Administration's values and beliefs undergird both decisions about staff development and other policies of the organization such as DCW involvement in care conferences or organizational decisions.

If an organization's culture places a high value on DCWs uniqueness as individuals and worthwhile team members, then training practices consistent with that culture reflect participant-centeredness in staff development. Further specific questions would aid a more complete picture of the organizational culture: 1) Are DCWs perceived as peers with nurse educators? 2) Are they seated in a circle or is it lecture-seating? 3) Is

their experience respected? 4) Are they asked to participate in the interaction or is it a passive experience with DVD or computer-based expert? 5) Is the intent of the training to be compliance or is the intent development and growth? 6) Are the DCWs asked about their interests and learning needs? 7) Is there a one-size fits all training or is there flexibility to accommodate multiple needs within the organization?

Participant-centered training, synonymous with best-practices in training, accommodates: 1) DCWs' need for shorter duration but more frequent; 2) adult learning needs through methods; and 3) content that informs and equips DCW to think critically and make decisions.

Interaction between Structural and Cultural Variables to Predict Best-Practices

The third research question of this study focused on how structural and cultural characteristics of service provider organizations might interact in order to shape best-practices in DCW training. No evidence of statistical interactions between structural and cultural variables appeared in the models tested to predict best-practices in training DCWs. I attribute the reason that structure and culture showed no interaction to the fact that the measure of culture measured only a narrow area of organizational culture. Schein (1992) argues that an outsider must examine the particular organization for primary and secondary mechanisms in order to understand culture. Schein asks broader questions concerning how leaders react to crisis, criteria for rewards, and recruitment techniques. The 20-item culture survey narrowly focused on their perceptions of DCW decision-making, involvement, and support. The narrow focus limits the possibility for interaction with structural components.

Implications for Practice

On an individual organizational level, these findings suggest various implications for practice in an individual organization. Many of the changes can occur through heightened awareness of supervisors and administration. However, organizational-level values clarification may improve best-practices in training. Individual organizations can improve DCW training by first implementing a comprehensive evaluation process.

Evaluation Process

The evaluation process should include testing of the transfer of training on the job as well as other organizational outcomes. Effective evaluation of training outcomes includes a comparison of certain measures of knowledge, skill, and resident/client status before and after training (Kirkpatrick & Kirkpatrick, 2006). Moreover, needs assessments provide opportunities for determining the particular training needs of staff. The needs assessment measures DCW perceptions and expressions of learning needs (Innes, 2000; Kettner, Morney, & Martin, 1999; Kirkpatrick & Kirkpatrick, 2006).

Training Specifications

If training delivery consists of shorter more frequent sessions, “coverage” for training may become less costly and stressful to administration. Shorter, more frequent sessions with on-the-job coaching provides more success with sustained behavior change in DCWs (Morgan & Konrad, 2008; Burgio et al., 2001). On-the-job mentoring and coaching allows for gradual transfer of knowledge and skill with practice in an authentic situation. Moreover, on-the-job training allows for more individualization to the need of the staff member. For more experienced DCW, on-going training should have a different content and format from orientation. During orientation, DCWs have less experience to

draw upon and more need for new information (Kemeny, 2007, Unpublished qualitative study with DCW). Experienced DCWs need training that allows them to draw from their unique experiences and interact with new materials to solve problems on the job. Peer-mentoring programs that use the more experienced DCW to provide hands-on training for orientees has some past success (Pillemer et al., 2003).

Supervisor Support

Prior to starting any new DCW training initiative, buy-in from supervisors, prior to training, assures supervisor support during and after the training (Morgan & Konrad, 2008). Supervisor support becomes essential to transfer of training after an information intensive session. In best-practice situations, the supervisor follows-up after training with on-the-job coaching to help DCW apply learning. By engaging the supervisors in the training process, they incorporate new knowledge and skills into their on-going observation, feedback, and goal-setting with DCWs. In this way, the organization moves from offering isolated training sessions to a strategic staff development plan.

Administrators also need buy-in. From a top down perspective, a decision to allocate resources for a staff development system involves more than complying with regulations. Ultimately, staff development becomes an organizational culture change initiative to improve retention and recruitment of DCWs.

Values Clarification

In order to create a culture that supports DCWs as individuals who can grow, learn, and provide input into care decisions, the organization may need to engage in some self-conscious values clarification. Most supervisors believe that they respect and value

staff. However, various leadership exercises or group clarification sessions may heighten awareness to ingrained beliefs that create barriers to the best-practices training process.

Application to Public Policy

On a state and national level, given the significance of quality training to closing the “care gap,” policy-makers should prioritize efforts to support best-practices in training. One public policy agenda concerns a heightened awareness of the need for staff development strategies rather than regulated “staff training.” This strategy includes a best-practices hub that supports networks, specific resources for smaller organizations, resources for bridging between networks, and modifications to external stakeholders’ evaluation procedures for organizations.

Best-Practice Hub

Currently, training resources remain extremely fragmented. Creating a shared “hub” where organizations can access and share resources, such as curricula and evaluation tools, might efficiently provide greater coherence and enhance quality in training. One reason behind the fragmentation concerns the differences in departments of state governments that license different types of organizations. For example, the training resource for Adult Day Care programs (in the aging network) is limited to a DVD, offered through the Pennsylvania Adult Day Care Association. Many providers in the disability network have an opportunity to purchase a computer-based training package at lower cost from a state contract with College of Direct Support. Other disability network providers rely on state-supported Health Care Quality Units for trainers and programming. Aging network providers have less support to find appropriate curricula and trainers. A “hub” for best-practices in training DCWs would promote less duplication

of effort by different state departments and individual organizations. The “hub” would be a center for sharing best-practices across networks, sharing needs-assessments protocols for individualizing staff development programs, and providing expertise in evaluation of training programs. This study found a relationship between higher order evaluation practices and best-practices in training. However, very few organizations make use of the potential of evaluation for improving staff development efforts.

Resources for Smaller Organizations

Smaller organizations, especially with less than 60 direct care workers, need a separate strategy. Smaller organizations need more than electronic and paper resources. They may also benefit from sharing traveling “trainers” that come to their organizations. Individual supervisors of these small organizations may need specialized training in staff development. By sharing resources, an opportunity exists to benefit from economies of scale that larger organizations take for granted. Sharing resources between facilities in close proximity might provide an opportunity for the adult educator to visit the organization often and understand the specific concerns and conditions of the organization. Improved monitoring of web-applications might also be advantageous.

Resources for Bridging the Gap between Networks

Although many of the individuals aging with developmental disabilities transition to aging network organizations, little expertise is shared between the two networks. In the federal requirements for nursing homes, the guidelines even specify that persons planning activities and social gatherings must incorporate the needs of individuals with a developmental disability. However, almost one-third of the

organizations offered no content about developmental disability during self-reported training sessions.

External Stakeholders and Rewards

External stakeholders, such as the Department of Health surveyors, need a more proactive approach toward strategizing for best-practices in staff development. In addition to citing an organization for deficiencies in the regulations pertaining to training, surveyors ought also to have a way to commend an organization with best-practices in training as evidenced by client and staff outcomes.

More than deficiencies. A deficiency-based system promotes “compliance-only” thinking which may even create a barrier to a best-practice standard. Stakeholders must begin by defining important resident/client and staff outcomes for staff development. The current Nursing Home compare indicators only provide information about physical outcomes of residents in nursing homes. Surveyors should use social climate indicators and indicators of positive staff outcomes on-the-job. Providing positive incentives for best-practice organizations might provide motivational incentive for organizations to develop a strategic staff development plan.

Input into care. Policy makers and individual leaders in service provider organizations need awareness about the positive benefits of improving the opportunities for DCW to attend care conference. Increasing DCW involvement has implications for quality of care for the resident. Moreover, the by-product of DCW involvement in the care conference may improve the organizational culture overall. Laschinger, Finegan, & Shamian (2001) found that DCW involvement in care planning conferences improved organizational commitment. While it is not a robust finding in this study, the relationship

between input into care conferences and Best-Practices in Training suggests leaders of organizations and policy-makers should consider a mechanism for promoting participation of DCWs in care conferences. Currently, for many DCWs, the role remains only “bed and body work” (Goffman, 1965) rather than decision-making.

Integration. Policy-makers also need to consider efforts to help aging and disability network organizations understand and clarify their own organizational culture. A first step involves the decision to offer opportunities for quality supervisor and administrator training. Many nurse supervisors do not have training in supervision, staff development, or mentoring. By changing supervisor behavior, DCW integration may be improved. However, a “bottom-up” strategy, working with the DCWs to promote self-advocacy and empowerment could improve the organizational culture.

Limitations of the Research

Cross-sectional design

The cross sectional design of this study creates a limitation in terms of suggesting cause and effect relationships. Since the time order between independent and dependent variables cannot be established, then I cannot draw conclusions about cause and effect. Although all the potential causes of spuriousness, based upon the review of the literature, were ruled out, in such a complex situation, other spurious variables may exist.

Self-report

The survey asks respondents to self-report the practices of the organization. Self-report surveys are subject to social desirability bias (Monette, Sullivan, & DeJong, 2005). If the respondent has concerns about competition with other facilities or looking good in the eyes of the state regulators, this might affect the accuracy of the responses. On the

other hand, many administrators wrote down very authentic comments under needs and challenges. Our decision to make the survey completely anonymous and assure the respondents of their anonymity assisted in the respondents comfort level.

Response rate

A response rate of 10% is relatively low, although typical (Babbie, 2003). The surveys were originally sent to a universal sample of all licensed organizations in the state of Pennsylvania. Therefore, the results are reasonably representative of the population. When we looked at the representation of the types of organizations geographically and by setting (e.g., assisted living, skilled nursing home), the sample remained relatively proportional to the types of organizations in the state of Pennsylvania.

Generalizability

Only providers in the state of Pennsylvania were surveyed. This research cannot be generalized beyond the state of Pennsylvania. Based on a comparison grid of training regulations and practices in other states, Pennsylvania has similarities with training practices and regulations in other states of a similar size (Mabry & Kemeny, in press).

Directions for Future Research

To strengthen effective staff development of DCWs in order to meet the needs of the growing aging-disability population, some opportunities for further research include: 1) improved understanding of the ways that DCWs and administrators view training; 2) the role of evaluation in developing and delivering training; 3) and the effectiveness of different approaches to training.

DCW-Administration Agreement

Previous studies on DCW training asked DCWs directly about their perception of training. For example, Zimmerman et al. (2007) asked administrators to choose five DCWs for an interview. This research asked administration for their perspectives on DCW training. Significant research questions to understand the role of structure and culture and best-practice in training include: To what extent do administration and DCWs agree in their perceptions about training content? To what extent do administration and DCW agree about DCW training methods?

DCW Training and Evaluation

A significant research avenue involves an investigation into evaluation practices and training. In this study, evaluation practices became a predictor for best-practices in training. Research on the specifics of evaluation practices and their relationship to training practices may be beneficial. No comprehensive research exists in the area of evaluation and training practices among service provider organizations. Do organizations that promote higher level evaluation, also have better training practices? Do organizations that involve DCW in the evaluation process have better training practices? What can be done to improve evaluation practices in smaller organization who do not have the human resource support?

Comparative Effectiveness Research

Research on the comparative effectiveness of various training delivery methods would contribute to the body of knowledge. Administrators spend a lot of money on DVDs, computer-based training modules, and curricula. Although DCW say that they prefer shorter, hands-on, and more frequent training (Ejaz et al., 2001), scant research

exists that tests different types of training delivery. If the content of the training were constant, which combined method of delivery promotes better DCW outcomes in terms of reaction, knowledge, skills, and transfer to the job? With this question, a quasi-experimental design would encompass comparison groups and provide some isolation to test the effectiveness of the interventions.

CHAPTER VI

CONCLUSION

Introduction

The overall goal in this meso-level research study concerned the relationship of structural and cultural aspects of an organization to best-practices in training. Many empirical studies describe investigations on the relationship between the macro-components in organizations and individual-level outcomes for direct care workers. No known research investigates the macro-components of structure and culture in relationship to the meso-level processes of training practices. Based on an extensive literature review, I created a best-practice index for measuring the extent to which an organization uses best-practices in training. Three research questions organized the study: 1) the relationship of structural variables to best-practices in training; 2) the relationship of cultural variables to best-practices in training; and 3) the interaction of structural and cultural variables in relationship to best-practices in training. The results of the study have some important implications for leadership of individual organizations as well as policy-makers.

Overall, organizations that serve aging individuals with and without developmental disabilities can take some steps to improve Best-Practices in Training without a huge outlay of financial resources. Policy-makers that represent and monitor multiple organizations also can make positive contributions to Best-Practices in Training for direct care workers. Ultimately, effective and relevant training assists organizations to retain DCW and save the financial drain of recruiting, hiring and orienting new workers. Most of the practical changes related to structural and cultural variables that influence

best-practices in training involve the exercise of leadership from administration and policy-makers to effectively use the resources already in place.

For the individual organization to become more participant-centered in training, the results of the study suggest: 1) moving from a compliance-focused culture to a best-practice training culture; 2) moving from content-focused to method-focus strategy; 3) assessing and individualizing staff development strategy ; 4) using evaluation effectively to improve training; and 5) changing the location and facilitation of training processes. For the policy-makers and other stake holders, I recommend: 1) creating a positive incentive system for best-practices in training; 2) creating opportunities for information sharing between aging and disability networks; and 3) reducing redundancy of overlapping departments and committees that support these two groups.

Implications for Organizational Leaders

Compliance to Best-Practice Focus

Administrators in the aging and disability networks need to first raise their awareness of the best-practices in training. Administrators need an opportunity to learn the components of best-practices in training. If a leader works up through the ranks of the organization, he/she may not know anything different than current practice. In addition, service provider organizations (SPO) are the most heavily regulated industry in the United States. It is not surprising that many administrators start with the regulations as a basis for the staff development plan. Once awareness of best-practices has improved, the organization's leader must set the priority of human, time, and financial resources toward best-practices.

Content to Method Focus

The results of the qualitative work of this study suggest that many administrators focus on the content of training rather than training delivery. If organizations turned their strategizing toward a method focus, the content requirements would be satisfied. Many of the administrators suggested that training must be relevant to the DCWs. One way of introducing relevancy concerns the use of interactive and reflective techniques in training. Rather than just presenting the content through lecture, DVD, or video, the adult learner has an opportunity to interact with the material. The process of interacting with the material and drawing upon experience, assists the adult participant to learn more (Macharacher, 2006). Moreover, the training session itself indicates that the organization respects and values the DCW as a person.

Individualizing Staff-Development

“One size fits all” does not work for training practices. A variety of differences in staff learning needs exist. The process of assessing each person’s development needs should already be part of the staff evaluation system. The process can include self-evaluation. Many times staff performance review and staff development strategy exist in silos, isolated from each other. However, the two administrative functions should go hand in hand. In staff development plans, one of the most critical problems involves treating new employees and experienced employees as if they have the same needs. An individualized approach allows for individual strengths and learning needs. From an in-depth meaningful performance review process, the training content needs emerge that fit the particular organization’s needs.

Evaluation Practices

This research strongly suggests a need for training evaluation and the usefulness to improve training practices. Evaluation practices should have a cyclical aspect in which the data from evaluation is used for continual improvement. In an organization, DCWs, as participants should be intimately involved in the evaluation by giving input and shaping future training practices. Another predictor of best-practices, more objective assessment of training outcomes for clients/residents or the organization serves to promote overall staff development.

Changing the Location of Training

Organizational leaders in aging and disability networks juggle limited financial resources every day. A staff development strategy with huge financial cost lacks feasibility. Instead of focusing on expert-instructors, current technology, and classrooms, “teaching on the floor” improves quality and keeps cost low. Instead of removing the DCW from the resident creating problems with scheduling and over-time, more effort should be made to provide hands-on training. Communication and behavioral techniques can rarely be taught well in a lecture. By seeing the approach, a DCW can learn faster. Moreover, more efficient use of experienced staff to mentor the newer DCW proves beneficial to both parties.

Implications for Policy-Makers and Stakeholders

Creating a Positive Incentive System for Best-Practices in Training

Policy-makers can improve best-practices in training in general by providing a motivational incentive for organizations to improve their training. The deficiency-focus provoked through yearly inspections creates a compliance-culture in organizations.

Incentives should be given for positive outcomes for staff, residents/clients, and organizational improvement. For example, work climate indicators or staff commitment surveys may indicate the staff's intention to stay employed. Moreover, organizations should be rewarded for using an evaluation process to improve staff development.

Creating Opportunities for Information Sharing

Aging and Disability Network providers have important information to share with each other. Instead of trying to bring them together to hear expert-speakers, it would be better to set up local networks where resources for best-practices could be shared. Organizational leaders might trade-off as peer-reviewers to help each other improve organizational effectiveness in staff development.

Reducing Redundancy In Support Offices

In the current financial situation, a strategy that requires policy-makers to spend money has no feasibility. However, by creatively researching the various resources for training support in various state offices and combining efforts may create both efficiency and effectiveness. Part of the divide between the disability and aging network providers involves the differences in regulators and funding sources. To start, streamlining the process of licensing would provide more commonality for the organizations in question.

Conclusion

A crisis exists for organizations who hire direct care workers (DCW). In the next twenty years, the "care gap," a lack of DCWs to meet the care needs of individuals who are aging, will only increase. Retention measures remain a large part of the strategy to close the "care gap." DCW cite lack of quality training as one of their number one stressors and reasons for leaving their organization (Ejaz et al., 2008). Therefore, "best-

practices in training” constitutes a pertinent topic to organizational leaders, family stakeholders, and policy-makers. Creation of a Best-Practices in Training Index is one of the more transportable contributions of this study. The index, developed with data from over 300 organizations, includes all types of licensed providers serving individuals who are aging.

Another important contribution of the study involves a focus on participant-centeredness. Current training practices have a compliance- and content-focus rather than participant-focus. Creative strategies to improve the participant focus include: 1) more evaluation of training processes; 2) methodology that improves participant involvement and learning; 3) creative facilitation with on-the-job training, coaching, and peer mentoring. Many of the findings of this study challenge current practices. Very few organizations achieved a high best-practice in training score. Aging and disability network organizations need support from policy-makers and each other as the paradigm shifts from compliance-focused expert-led “training” to individualized participant-focused staff development strategy.

REFERENCES

- Abramovitz, M. (1996). *Regulating the lives of women: Social welfare policy from colonial times to present*. Boston, MA: South End Press.
- Allen-Burge, R., Stevens, A. B., & Burgio, L. D. (1999). Effective behavioral interventions for decreasing dementia-related challenging behavior in nursing homes. *International Journal of Geriatric Psychiatry, 14*, 213-232.
- American Association of Retired Persons AARP (2007). *Comparing aging experiences in U.S. and Denmark*. Retrieved on June 22, 2007, from <http://www.aarp.org/>.
- American Health Care Association (AHCA) (2003). *Results for the 2002 AHCA survey of nursing staff vacancy and turnover in nursing homes*. Washington, DC: Author.
- Anderson, R.A., Corazzini, K.N., & McDaniel, R.R. (2004). Complexity science and the dynamics of climate and communication: Reducing nursing home turnover. *The Gerontologist, 44*(3), 378-388.
- Aneshensel, C.S., Pearlin, L.I., Mullan, J. T., Zarit, S.H., & Whitlach, C.J. (1995). *Profiles in caregiving: The unexpected career*. San Deigo, CA: Academic Press.
- Angrosino, M.V. (1998). *Opportunity house: Ethnographic stories of mental retardation*. Walnut Creek: Altamira Press.
- Arc of PA (2009). *Waiting list*. Retrieved on June 2, 2009, at www.thearc.org.
- Arthur, W., Bennett, W., Edens, P.S., & Bell, S.T. (2003). Effectiveness of training in organizations: A meta-analysis of design and evaluation features. *Journal of Applied Psychology, 88*(2), 234-245.
- Aylward, S., Stolee, P., Keat, N., & Johncox, V. (2003). Effectiveness of continuing educational interventions in long-term care. *The Gerontologist, 43*, 259-271.

- Babbie, E. (2004). *The Practice of Social Research*. (11th Edition). Belmont, CA: Wadsworth.
- Baltes, M. M., & Carstensen, L. L. (1999). Social-psychological theories and their applications to aging: From individual to collective. In V. L. Bengtson, J.-E. Ruth, & K. W. Schaie (Eds.), *Handbook of theories of aging* (pp. 209–226). New York: Springer.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1-26.
- Berger, P., & Luckmann, T. (1966). *The social construction of reality: A treatise in the sociology of knowledge*. New York; Doubleday.
- Bishop, C.E., Squillace, M.R., Meagher, J., Anderson, W.L., & Wiener, J.M. (2009). Nursing home work practices and nursing assistants' job satisfaction. *The Gerontologist*, 49(5), 611-622.
- Blau, P.M., & Schoenherr, R.A. (1971). *The structure of organizations*. New York: Basic Books.
- Boettcher, I. F., Kemeny, B., DeShon, R.P., & Stevens, A.B. (2004). A system to develop staff behaviors for person-centered care. *Alzheimer's Care Quarterly*, 5(3), 188-196.
- Bostwick, J., Rantz, M.J., Flesner, M., & Riggs, C. (2006). Systematic review of studies of staffing and quality in nursing homes. *Journal of the American Medical Directors Association*, 7, 366-376.
- Bourdieu, P. (2002). Structures, habitus, practices. In C. Calhoun, J. Gerteis, J. Moody, S. Pfaff, K. Schmidt, & I. Virk (Eds.), *Contemporary Sociological Theory* (pp.276-

- 289). Malden, MA: Blackwell. (Reprinted from P. Bourdieu, [*The logic of practice*] by R. Nice (Trans.), 1980, *Le Sens Pratique*, Stanford University Press.
- Bowers, B., Esmond, S., & Jacobson, N. (2003). Turnover reinterpreted: CNAs talk about why they leave. *Journal of Gerontological Nursing*, 29(3), 36-43.
- Braun, K.L., Cheang, M., & Shigeta, D. (2005). Increasing knowledge, skills, and empathy among direct care workers in elder care: A preliminary study of an active-learning model. *The Gerontologist*, 45(1), 118-125.
- Brody, E. (1996). Agents without principals: The economic convergence of the nonprofit and for-profit organizational forms. *New York Law School Review*, XL(3), 457-536.
- Brooker, D. (2007). *Person-centered dementia care: making services better*. London: Jessica Kingsley Publishers.
- Brookfield, S. (2006). Self-directed learning: A critical review of research. *New Directions for Adult and Continuing Education*, 1985(25), 5-16.
- Brown, S.L. (2002). Nonprofit ownership and quality in Medicaid's longterm care program for people with developmental disabilities. *Journal of Health and Human Services Administration*, 25(3), 315-341.
- Buettner, L., & Fitzsimmons, S. (2003). *Dementia practice guideline for recreational therapy: Treatment of disturbing behaviors*. Alexandria, VA: American Therapeutic Recreation Association.
- Burgio, L.D., Allen-Burge, R., Roth, D.L., Bourgeois, M.S., Dijkstra, K., Gerstle, J,

- Jackson, E., & Bankester, L. (2001). Come talk with me: Improving communication between nursing assistants and nursing home residents during care routines. *The Gerontologist, 41*(4), 449- 460.
- Burgio, L.D., Stevens, A., Burgio, K.L., Roth, D.L., Paul, P., & Gerstle, J. (2002). Teaching and maintaining behavior management skills in the nursing home. *The Gerontologist, 42*, 87-496.
- Burton, R. M., & Obel, B. (2005). Technology as a contingency factor. In J.M. Shafritz, J.S. Ott, and Y.S. Jang (Eds.), *Classics of Organization Theory* (pp.239-248, 6th ed.) Belmont, CA: Wadsworth. (Reprinted from Strategic organizational diagnosis and design: Developing theory for application (2nd ed.), pp.224-234 by R.M.Burton and B. Obel, 1998, Boston: Kluwer Academic).
- Campbell, M. (2007). Staff training and challenging behavior: Who needs it? *Journal of Intellectual Disabilities, 11*(2), 143-156.
- Carmines, E. G., & Zeller, R.A. (1979). *Reliability and validity assessment*. Beverly Hills: Sage.
- Castle, N.G., Engberg, J., Anderson, R., & Men, A. (2007). The influence of staffing characteristics on quality of care in nursing homes. *Health Services Research, 42*, 1822-1847.
- Centers for Disease Control (CDC) (2003). *Public health and Aging: Trends in Aging*. Retrieved on June 10, 2009, from <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5206a2.htm>
- Center for Workforce Information and Analysis. (2004). *Pennsylvania Industry Employment*. Retrieved on June 16, 2009, from www.paworkstats.state.pa.us.

- Center for Rural Pennsylvania (2009). A 60 Year retrospective on Pennsylvania's Rural population. Retrieved on June 14, 2009 from www.ruralpa.org
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Thousand Oaks, CA: Sage.
- Chaput, J. (2002). Adults with Down Syndrome and Alzheimer's Disease: Comparison of Services Received in Group Homes and in Special Care Units. *Journal of Gerontological Social Work, 38(1)*, 197-211.
- Chatterjee, S., Hadi, A. S., & Price, B. (2000). *Regression analysis by example* (3rd Ed.). New York: John Wiley & Sons.
- Cohen, S., & Wills, T. (1985). Stress, social support, and buffering hypothesis. *Psychological Bulletin, 98(2)*, 310-357.
- Cohen-Mansfield, J., Marx, M.S., Regier, N. G., & Dakheel-Ali, M. (2009). The impact of personal characteristics on engagement in nursing home residents with dementia. *International Journal of Geriatric Psychiatry, 24*, 755-763.
- The College of Direct Support (2008). *Internet-based College for Direct Support Professionals*. Retrieved on April 25, 2008, from <http://www.collegeofdirectsupport.com/>
- Conger, J.A., & Kanungo, R.N. (1988). The empowerment process: Integrating theory and practice. *Academy of Management Review, 13*, 471-482.
- Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings*. Boston, MA: Houghton Mifflin Company.
- Cook, S.D., & Yanow, D. (1993). Changing organizational cultures. In J.M. Shafritz, J.S. Ott, and Y.S. Jang (Eds.), *Classics of Organization Theory* (pp.368-383, 6th ed.)

- Belmont, CA: Wadsworth. (Reprinted from S.D.N. Cook & D. Yanow, Culture and Organizational learning, *Journal of Management Inquiry*, 2, 373-390. Thousand Oaks, CA: Sage).
- Coogle, C.L, Parham, I.A., Jablonski, R., & Rachel, J.A. (2007). The value of geriatric care enhancement training for Direct Care Workers. *Gerontology and Geriatric Education*, 28(2), 109-128.
- Davidson, P.W., Heller, T., Janicki, M.P., & Hyer, K. (2004). Defining a national health research and practice agenda for older adults with intellectual disabilities. *Journal of Policy and Practice in Intellectual Disabilities*, 1(1), 2-9.
- Davidson, P.W., Janicki, M.P., Ladrigan, P., Houser, K., Henderson, C.M., & Cain, N.N. (2003). Associations between behavior disorders and health status among older adults with intellectual disability, *Aging & Mental Health*, 7(6), 424-430.
- Dawson, S.L. (2007). *Recruitment and retention of paraprofessionals: A presentation to The Institute of Medicine's Committee on the Future of Health Care Workforce for Older Americans*. Retrieved February 20, 2009, from http://www.directcareclearinghouse.org/download/Dawson_IOM_6-28-07.pdf
- Delmaouzou, E. (2008). Narrative and cultural construction of illness and healing. *Medical Anthropology Quarterly*, 16(3), 380-281.
- Dionne, P. (1996) Evaluation of training activities: A complex issue involving different stakes. *Human Resource Development Quarterly*, 7(3), 279-286.
- Dobson, S., Carey, L. Conyers, I., Upadhyaya, S., & Raghavan, R. (2004). Learning about touch: An exploratory story to identify the learning needs of staff. *Journal of Learning Disabilities*, 8(2), 113-119.

- Doka, K.J. & Lavin, C. (2003). The paradox of ageing with developmental disabilities: Increasing needs, declining resources. *Ageing International*, 28(2), 135-154.
- DuBois, D. L., Holloway, B. E., Valentine, J. C., & Cooper, H. (2002). Effectiveness of mentoring programs for youth: A meta-analytic review. *American Journal of Community Psychology*, 30, 157-197.
- Durkheim, E. (1933). *The division of labor in society*. New York: Free Press.
- Ejaz, F.K., Noelker, L.S., Menne, H.L., & Bagaka, J.G. (2008). The impact of stress and support on direct care worker's job satisfaction. *The Gerontologist*, 48(1), 60-70.
- Evans, L.K., Strumpf, N.E., Allen-Taylor, S.L., Capezuti, E., Maislin, G., & Jacobsen, B. (1997). Clinical trial to reduce restraints in nursing homes. *Journal of American Geriatrics Society*, 45, 675-681.
- Felce, D., Jones, E., Lowe, K., & Perry, J. (2003). Rational resourcing and productivity: relationships among staff input, resident characteristics, and group home quality. *American Journal of Mental Retardation*, 108, 161-172.
- Felce, D., Lowe, K., & Jones, E. (2002). Staff activity in supported housing services. *Journal of Applied Research in Intellectual Disabilities*, 15, 388-403.
- Follett, M.P. (2005). The giving of orders. In J. M. Shafritz, J.S. Ott, Y.S. Jang (Eds.), *Classics of organization theory* (6th ed., pp.152-158). Belmont, CA: Thomson Wadsworth. (Reprinted from *Scientific foundations of business administration* by H.C. Metcalf, Ed., 1926, Baltimore: Williams & Wilkins.)
- Forbat, L. (2006). An analysis of key principles in valuing people. *Journal of Intellectual Disability*, 10(3), 249-260.
- Freeman, R., Smith, C., Zarcone, J., Kimbrough, P., Tieghi-Benet, M., Wickham, D.,

- Reese, M., & Hine, K. (2005). Building a statewide plan for embedding positive behavior support in human service organizations. *Journal of Positive Behavior Interventions*, 7(2), 109-119.
- Fulmer, R.M., Gibbs, P., & Keyes, B. (1998). The second generation learning organizations: New tools for sustaining competitive advantage. *Organizational Dynamics*, 27(2), 6-20.
- Garrison, D.R. (1992). Critical thinking and self-directed learning in adult education: An Analysis of responsibility and control. *Adult Education Quarterly*, 42(3), 136-148.
- Gatz, M. & Zarit, S.H. (1999). A good old age: Paradox or Possibility. In V. L. Bengston, & K. W. Schaie (Eds.), *Handbook of theories of aging* (pp.396-416). New York: Springer Publishing Company.
- Gaventa, J. (1980). *Power and Powerlessness: Quiescence and Rebellion in the Appalachian Valley*. Urbana, IL: University of Illinois Press.
- George, L.K. (2006). Perceived quality of life. In R.H. Binstock & L.K. George (Eds.), *Handbook of aging and social sciences* (6th ed., pp.321-333). San Diego, CA: Academic Press.
- Gertler, P. J. & Kuan, J.W. (2008). *Are nonprofits efficient? A test using hospital market values*. (2002, August). Retrieved on June 6, 2008, from <http://www.papers.ssm.com>
- Giarusso, R., Mabry, J.B., & Bengston, V.L. (2001). The aging self in social contexts. In R.H. Binstock & L. K. George (Eds.), *Handbook of aging and the social sciences* (4th.Ed., pp.295-312), San Diego: Academic Press.

- Giarusso, R., Mabry, J.B., & Bengston, V.L. (2001). The aging self in social contexts. In R.H. Binstock & L. K. George (Eds.), *Handbook of aging and the social sciences* (4th.Edition, 295-312), San Diego: Academic Press.
- Gieselman, J.A., Stark, N. and Farruggia, M.J. (2000). Implications of the situated learning model for teaching and learning nursing research. *The Journal of Continuing Education in Nursing*, 31(6), 263-268.
- Gliem, J.A. & Gliem, R. R. (2003). *Calculating, interpreting, and reporting Cronbach's Alpha*. Midwest Research to Practice Conference in Adult, Continuing, & Community Education. Retrieved February 26, 2010, from <https://scholarworks.iupui.edu>.
- Goffman, E. (1961). *Asylums: Essays on the social situation of mental patients and other inmates*. New York: Anchor Books.
- Goffman, E. (1963). *Stigma: Notes on management of spoiled identity*. New York: Simon & Schuster, Inc.
- Goldstein, I.L. & Ford, J.K. (2002). *Training in organizations: Needs assessment, development, and evaluation*. (4th ed.). Belmont, CA: Wadsworth.
- Grabowski, D.C., Angelelli, J.J., & Gruber, J. (2007). *Nursing home quality as a public good*. Retrieved July 29, 2007, from https://www.bu.edu/econ/seminars/health/spg05/Grabowski_BU_paper.pdf.
- Grant, L., Potthoff, S.J., & Olson, D. (2001). Staffing and administrative issues in special care units. *Alzheimer's Care Quarterly*, 2(3), 22-27.
- Gruss, V., McCann, J.J., Edelman, P., & Farran, C.J. (2004). Job stress among nursing Home certified nursing assistants: Comparison of empowered and nonempowered

- work environments. *Alzheimer's Care Quarterly*, 5(3), 207-216.
- Gubrium, J.F. (1975). *Living and dying at murray manor*. New York: St. Martin's Press.
- Haber, C. (2005). Historical perspectives on aging. In R.H. Binstock & L.K. George (Eds.), *Handbook of aging and social sciences* (6th ed., pp.60-73). San Diego, CA: Academic Press.
- Hall, R. H., Johnson, N. J. & Haas, J. E. (1967). Organizational size, complexity, and formalization. *American Sociological Review*, 32(6), 903-912.
- Hamilton, L.C. (1992). *Regression with graphics: A second course in applied statistics*. Belmont, CA: Wadsworth.
- Hamilton, L. C. (2006). *Statistics with STATA*. Belmont, CA: Thomson.
- Harahan, M., Keifer, K., Johnson, A., Guiliano, J., Bowers, B., & Stone, R. (2003). *Addressing shortages in the direct care workforce: The recruitment and retention practices of California's not-for-profit nursing homes, continuing care retirement communities, and assisted living facilities*. Washington, DC: IFAS.
- Haraway, D.L., & Haraway, W.M. (2005). Analysis of the effect of conflict-management and resolution training on employee stress at a healthcare organization. *Research and Perspectives on Healthcare*, 83(4), 11-17.
- Harris-Kojetin, L., Lipson, D., Fielding, J., Kiefer, K., & Stone, R. (2004). *Recent findings on frontline long-term care workers: A research synthesis 1999-2003*. Washington, DC: U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation.
- Hatton, C., Emerson, M., Rivers, H., Mason, R., Swarbick, L., Mason, R., Kiernam, C., Reeves, D., & Alborz, A. (2001). Factors associated with intended staff turnover

- and job search behavior in services for people with intellectual disability. *Journal of Intellectual Disability Research*, 45(3), 258-270.
- Hatton, C., Rivers, M., Mason, H., Emerson, E., Kiernan, C., Reeves, D., & Alborz, A. (1999). Organizational culture and staff outcomes in services for people with intellectual disabilities. *Journal of Intellectual Disability Research*, 43(3), 206-218.
- Hatton, C., Emerson, E., Rivers, M., Mason, H., Swarwick, R., Mason, L., Kiernan, C., Reeves, D., & Alborz, A. (2001). Factors associated with intended staff turnover and job search behavior in services for people with intellectual disabilities. *Journal of Intellectual Disability Research*, 45, 258-270.
- Hayward, M.D., & Zhang, Z. (2001). Demography of aging: A century of global change. In R.H. Binstock & L.K. George (Eds.), *Handbook of aging and social sciences* (5th ed., pp. 70-85). San Diego, CA: Academic Press.
- Hegeman, C., Hoskinson, D., Munro, H. Maiden, P., & Pillimer, K. (2007). Peer mentoring in long-term care: Rationale, Design, and Retention. *Gerontology & Geriatrics Education*, 28(2), 77-90.
- Heller, T. (2004). Aging with developmental disabilities: Emerging models for promoting health, independence, and quality of life. In B.J. Kemp and L. Mosqueda (eds.), *Aging with a disability: What the clinician needs to know* (pp.213-237). Baltimore: John Hopkins Press.
- Henderson, J.N., & Vesperi, M.D. (2005). *The culture of long term care: Nursing home ethnography*. Westport, CT: Bergin & Garvey.
- Hewitt, A., & Larson, S. (2007). The direct support workforce in community supports to

individuals with developmental disabilities: Issues, implications, and promising practices. *Mental Retardation and Developmental Disabilities Research Reviews*, 13, 178-187.

Hollinger-Smith, L., & Ortigara, A. (2004). Changing culture: Creating a long-term impact for a quality long-term care workforce. *Alzheimer's Care Quarterly*, 5(1), 60-70.

House, J.S. (1981). Social structure and personality. In M. Rosenberg & R.H. Turner (Eds.), *Social psychology sociological perspectives* (pp.525-561). New York: Blair Books.

Illich, I. (2003). Medical nemesis. *Journal of Epidemiology and Community Health*, 57, 919-922.

Innes, A. (2000). *Training and development for dementia care workers*. London: Jessica Kingsley Publishers.

Innstrand, S. T., Espnes, G.A., & Mykletun, R. (2004). Job stress, burnout, and job satisfaction: An intervention study for staff working with people with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 17, 119-126.

Institute for Future of Aging Services (IFAS) (2007). *Better Jobs Better Care Issue Brief*.

Retrieved on June 10, 2009, from www.bjbc.org

Institute for the Future of Aging Services (IFAS) & the Paraprofessional Healthcare Institute (PHI). (2005). *Workforce strategies No.3. The role of training in improving the recruitment and retention of direct care workers in long-term care*. Washington, DC: Author.

- Institute on Medicine (2008). *Retooling an Aging America: Building the Health Care Workforce*. Retrieved on April 25, 2008, from <http://phinational.org/archives/iom-report-%e2%80%9cmajor-step-forward%e2%80%9d-for-dcws/>.
- Irvine, D., Leatt, P., Evans, M., & Baker, R. G. (1999). Measurement of staff empowerment within health service organizations. *Journal of Nursing Measurement, 7(1)*, 79-96.
- Jervis, L. (2002). Working in and around the chain of command: Power relations among nursing staff in urban nursing homes. *Nursing Inquiry, 9(1)*, 12-23.
- Johnson, R.W., Toohey, D., & Wiener, J.M. (2007). Meeting the long-term needs of the Baby boomers: How changing families will affect paid helpers and institutions. *The Retirement Project Discussion Paper Series, The Urban Institute*. Retrieved on June 23, 2007, from www.urban.org/url.cfm?ID=311333 – 36k.
- Kane, R.A., Lum, T.Y., Cutler, L.J., Degenholtz, H.B., & Tu, T.C. (2007). Resident outcomes in small-house nursing homes: A longitudinal evaluation of the initial Green House programs. *Journal of the American Geriatrics Society, 55*, 832-839.
- Keehley, P., Medlin, S., MacBride, S., & Longmire, L. (1997). *Benchmarking for best practice in the public sector*. San Fransico: Jossey-Bass.
- Kettner, P. M, Moroney, R. M., & Martin, L. L. (1999). *Designing and managing programs: An effectiveness –based approach* (2nd Ed.). Thousand Oaks, CA: Sage.
- Kemeny, B. (2007). *Staff perceptions of physical activity and aging with a*

developmental disability, health promotion, and training effectiveness.

Unpublished manuscript, Department of Sociology, Indiana University of Pennsylvania, Indiana, PA.

- Kemeny, B., Boettcher, I., DeShon, R., & Stevens, A. (2006). Utilizing Experiential Techniques for Staff Development: Liking, Learning, Doing. *Journal of Gerontological Nursing*, 32(8), 9-14.
- Kidd, J.R. (1973). *How adults learn*. New York: Association Press.
- Kirkpatrick, D.L., & Kirkpatrick, J.D. (2006). *Evaluating training programs: The four levels (3rd Ed)*. San Francisco: Berrett-Koehler Publishers, Inc.
- Kitwood, T. (1997). *Dementia reconsidered: The person comes first*. Buckingham: Open University Press.
- Knowles, M.S. (1990). *The adult learner: A neglected species (4th ed.)*. Houston, TX: Gulf.
- Krahn, G.L., Putman, M., Drum, C.E., & Powers, L. (2006). Toward a national agenda for research. *Journal of Disability Policy Studies*, 17(1), 18-27.
- Krause, J.S., & Adkins, R. (2004). Methodological issues. In B.J. Kemp and L. Mosqueda (eds.), *Aging with a disability: What the clinician needs to know (pp.237-262)*. Baltimore: John Hopkins Press.
- Kuokkanen, L., Suominen, T., Rankinen, S., Kukkurainen, M.L., Savikko, N., & Doran, D. (2007). Organizational change and work-related empowerment. *Journal of Nursing Management*, 15, 500-507.

- Lakin, K.C., & Stancliffe, R.J. (2007). Residential supports for persons with intellectual and developmental disabilities. *Mental Retardation and Developmental Disabilities Research Reviews, 13*, 151-159.
- Larkin, B.G. & Burton, K.J. (2008). Evaluating a case study using Bloom's Taxonomy of Education. *AORN Journal, 88(3)*, 390-403.
- Laschinger, H.K., Finegan, J., & Shamian, J. (2001). The impact of workplace empowerment, organizational trust on staff nurses' work satisfaction and organizational commitment. *Health Care Management Review, 26(3)*, 7-23.
- Lawrence, P. R. & Lorsch, J. W. (1967). Differentiation and integration in complex organizations. *Administrative Sciences Quarterly, 12(1)*, 1-47.
- Leger-Krall, S. (2001). *Identity work in individuals with early alzheimer's disease* (Doctoral dissertation). Retrieved from UMI (No. 3039792). Ann Arbor, MI: ProQuest Information and Learning.
- Leon, J. Marainen, J., & Marcotte, J. (2001). *A Report to Pennsylvania Intra-Governmental Council on Long Term Care. In their own words: Pennsylvania's frontline workers in long term care*. Retrieved on June 26, 2007, from <http://www.bjbc-pa.org/pdf/researchpub/InTheirOwnWordsindd.pdf>
- Lewin, K. (1936). *Principles of topological psychology*. New York: McGraw Hill.
- Likert, R. (1967). *The human organization*. New York: McGraw-Hill.
- Lin, S.L., & Hsieh, A.T. (2002). Constraints of task identity on organizational commitment. *International Journal of Manpower, 23(2)*, 151-165.
- Lin, J.D., Lee, T.N., Yen, C.F., Loh, C.H., Hsu, S.W., Wu, J.L., & Chu, C. M. (2009). Job strain and determinants in staff working in institutions for people with

- intellectual disabilities in Taiwan: A test of the job demand-control-support model. *Research in Developmental Disabilities, 30*, 146-157.
- McCarron, M., Gill, M., McCallion, P., & Begley, C. (2005). Health co-morbidities in ageing persons with Down syndrome and Alzheimer's dementia. *Journal of Intellectual Disability Research, 49*(7), 560-566.
- McCarron, M., & McCallion, P. (2005). A revised stress and coping framework for staff carers of persons with intellectual disabilities and dementia. *Journal of Policy and Practice in Intellectual Disabilities, 2*(2), 139-148.
- McColl, M. (2004). Family and caregiver issues. In B.J. Kemp and L. Mosqueda (eds.), *Aging with a disability: What the clinician needs to know (pp.68-87)*. Baltimore: John Hopkins Press.
- McGuigan, J., Moyer, R., & Harris, F. (2007). *Managerial economics: Applications, strategies, and tactics with economic applications*. Mason, OH: Thomson South-Western.
- McKenzie, K., Paxton, D., Patrick, S., Matheson, E., & Murray, G.C. (2000). An Evaluation of the impact of a one-day challenging behavior course on the knowledge of health and social care staff working in learning disability services. *Journal of Intellectual Disabilities, 4*, 153.
- McKenzie, K., Sharp, K., Paxton, D., & Murray, G.C. (2002). The impact of training and staff attributions on staff practice in learning disability services: A pilot study. *Journal of Intellectual Disabilities, 6*, 239-251.

- McLeod, J.D., & Lively, K. (2003). Social structure and personality. In Delamater, J. (Ed.), *Handbook of social psychology*, New York: Kluwer Academic/Plenum Publishers.
- Mabry, J. B., & Kemeny, E. (In press). Training on aging with developmental disabilities for direct care workers in Pennsylvania. *Center for Rural Pennsylvania*.
- Maas, M.L., Specht, J.P., Buckwalter, K.C., Gittler, J., & Bechen, K. (2008). Nursing home staffing and training recommendations for promoting older adults' quality of care and life. *Research in Gerontological Nursing*, 1(2), 123-133.
- Mackeracher, D.(2004). *Making sense of adult learning* (2nd ed.).Toronto: University of Toronto Press.
- Mansell, J., Beadie-Brown, J., Welton, B., Beckett, C., & Hutchinson, A. (2008). Effect of service structure and organization on staff care practices in small community homes for people with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 21, 398-413.
- Martin, J. (1992). *Cultures in organizations: Three perspectives*. Oxford: Oxford University Press.
- Martin, J. (2002). *Organizational culture: Mapping the terrain*. Thousand Oaks, CA: Sage. As reprinted in Shafriz, J.M., Ott, J.S., & Jang, Y.S. (2005). *Classics of organization theory* (6th ed.). Belmont, CA: Wadsworth.
- Marx, K. (1975). Classes. In C.Calhoun, J. Gerteis, J. Moody, S. Pfaff, K. Schmidt, & I. Virk (Eds.), *Classical Sociological Theory* (pp.75-77). Malden, MA: Blackwell. (Reprinted from K. Marx and F. Engels, *Collected Works*, Volume 6. pp.870-1, by R. Dixon et al.(trans), 1975, International Publishers.

- Mastracci, S.H., Newman, M.A., & Guy, M.E., (2006). Appraising emotion work: Determining whether emotional labor is valued in government jobs. *The American Review of Public Administration*, 36(2), 123-138.
- Maxwell, J. A. (2005). *Qualitative research design: An interactive approach*. Thousand Oaks: Sage.
- Mead, G.H. (1934). *Mind, self and society*. Chicago: University of Chicago Press.
- Menne, H.L., Ejaz, F.K., Noelker, L.S., & Jones, J.A. (2007). Direct care workers' recommendations for training and continuing education. *Gerontology & Geriatrics Education*, 28(2), 91-108.
- Mertens, D. M. (2007). Transformative paradigm. *Journal of Mixed Methods Research*, 1(3), 212-225.
- Merton, R.K. (2005). Bureaucratic structure and personality. In J.M. Shafritz, J.S. Ott, and Y.S. Jang (Eds.), *Classics of Organization Theory* (pp.103-112, 6th ed.) Belmont, CA: Wadsworth. (Reprinted from *Social theory and social structure* by R.K. Merton, 1957, New York: The Free Press.)
- Monette, D.R., Sullivan, T.J., & DeJong, C.R. (2005). *Applied social research: A tool for the human services* (6th ed.). Belmont, CA: Thomson.
- Morgan, J.C., Haviland, S., Woodside, A., & Konrad, T. (2007). Fostering supportive learning environments in long-term care: The case of Win A Step Up. *Gerontology & Geriatrics Education*, 28, 55-75.
- Morgan, J.C., & Konrad, T.R. (2008). A mixed-method evaluation of a workforce development intervention for nursing assistants in nursing homes: The case of Win A Step Up. *The Gerontologist*, 48, 71-79.

- Mosqueda, L. (2004). Physiological changes and secondary conditions. In B.J. Kemp and L. Mosqueda (eds.), *Aging with a disability: What the clinician needs to know* (pp.35-48). Baltimore: John Hopkins Press.
- National Clearinghouse on the Direct Care Workforce (2007). *Best practices*. Retrieved July 1, 2007 from <http://www.directcareclearinghouse.org/practices/index.jsp>.
- Ng, T.W.H., Butts, M.M., Vandenberg, R.J., DeJoy, D.M., & Wilson, M.G. (2006). Effects of management communication, opportunity for learning, and work schedule flexibility on organizational commitment. *Journal of Vocational Behavior*, 68, 474-489.
- Noel, M., Pearce, G., & Metcalf, R. (2000). The effect of educational and staffing interventions on the CNA workforce. *Journal of the American Medical Director's Association*, 1, 241-247.
- Noelker, L.S., & Ejaz, F.K. (2001). *Final Report: Improving work settings and job outcomes for nursing assistants in skilled care facilities*. The Margaret Blenker Research Center of the Benjamin Rose Institute funded by and prepared for the Cleveland Foundation and the Retirement Research Foundation.
- Office of Management and Budgets (OMB). (2009). *Determining rural counties*. Retrieved on June 19, 2009 from www.ers.usda.gov/RuralDefinitions/PA.pdf.
- Orloff, A. (2006). Gender in the welfare state. *Annual Review of Sociology*, 22, 51-78.
- Ostwald, S. K., Hepburn, K.W., Caron, W., Burns, T., & Mantell, R. (1999). Reducing caregiver burden: A randomized psychoeducational intervention for caregivers of persons with dementia. *The Gerontologist*, 39(3), 299-309.
- Parker, V.A., & Geron, S.M. (2007). Cultural competence in nursing homes: Issues and

implications for education. *Gerontology & Geriatrics Education*, 28(2), 37-54.

Parsons, S., Daniels, H., Porter, J., & Robertson, C. (2006). Resources, staff beliefs and organizational culture: Factors in the use of information and communication technology for adults with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 21, 19-33.

Parsons, S., Simmons, W., Penn, K., & Furlough, M. (2003). Determinants of satisfaction and turnover in nursing assistants in a state-wide survey. *Journal of Gerontological Nursing*, 29(3), 51-58.

Parsons, S., Daniels, H., & Robertson, C. (2008). Resources, staff beliefs, and organizational culture: Factors in the use of information and communication technology for adults with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 21, 19-33.

Pennsylvania Department of Aging (2006). *April 2006 Newsletter*. Retrieved on July 26, 2007, from www.aging.state.pa.us

Pennsylvania Department of Health (2009). *Health care facility ownership and licensing*. Retrieved on June 18, 2009, from <http://www=188&Q=200791&healthPNavCtr=&TNID=4597#>

Pennsylvania Department of Public Welfare (2009). *Regulation implementation*. Retrieved on June 18, 2009, from <http://www.dpw.state.pa.us/PartnersProviders/longtermliving>

Pennsylvania Waiting List Campaign (2009). *Current waiting list*. Retrieved on June 2, 2009, from <http://www.pawaitinglistcampaign.org/>

- Petry, K., Maes, B., & Vlaskamp, C. (2007). Support characteristics associated with the quality of life of people with profound intellectual and multiple disabilities: The perspective of parents and direct support staff. *Journal of Policy and Practice in Intellectual Disabilities, 4*(2), 104-110.
- Pfeffer, J. (2005). Understanding the role of power in decision-making. In J.M. Shafritz, J.S. Ott, Y.S. Jang (Eds.), *Classics of Organizational Theory* (6th ed., pp.289-303). Belmont, CA: Thomson Wadsworth. (Reprinted from *Power in organizations*, pp.1-32, by J. Pfeffer, 1981, Marshfield, MA: Pittman.)
- Pietro, M.J. S. (2002). Training nursing assistants to communicate effectively with persons with Alzheimer's disease: A call for action. *Alzheimer's Care Quarterly, 3*(2), 157-164.
- Pillemer, K., Hegeman, C.R., Albright, B., & Henderson, C. (1998). Building bridges between families and nursing home staff: The partners in caregiving program. *The Gerontologist, 38*, 499-503.
- Pillemer, K., Sutor, J., Henderson, C., Meador, R., Shultz, I., Robison, J., & Hegeman, C. (2003). A cooperative communication intervention for nursing home staff and family members of residents. *The Gerontologist, 43*, 96-106.
- Polisher Research Institute (2001). *Pennsylvania's Intra-Governmental Council on Long-Term Care: Pennsylvania's frontline workers in long term care*. Philadelphia: Philadelphia Geriatric Center. Retrieved on July 15, 2007 from http://www.PA_LTC_Workforce_Report.pdf
- Post, S.G. (2002). Down syndrome and Alzheimer's disease: Defining a new ethical horizon in dual diagnosis. *Alzheimer's Care Quarterly, 3*(3), 215-224.

- Quadagno, J., & Reid, J. (1999). The political economy perspective in aging. In V.L. Bengtson, & K.W. Schaie, *Handbook of theories of aging* (pp.344-360). New York: Springer Publishing Company.
- Rose, R., David, G., & Jones, C. (2003). Staff who work with people who have intellectual disabilities: The importance of personality. *Journal of Applied Research in Intellectual Disabilities, 16*, 267-277.
- Rosko, M. D. (1999). Impact of internal and external environmental pressures on hospital inefficiency. *Health Care Management Science, 2*(2), 63-74.
- Rousseau, D. M. (1998). Why workers still identify with organizations. *Journal of Organizational Behavior, 19*, 217-233.
- Ryff, C.D., Marshall, V.W., & Clarke, P.J. (1999). Linking the self and society in social gerontology: Crossing new territory via old questions. In C.D Ryff & V.W. Marshall (Eds.), *The Self and Society in Aging Processes* (pp.3-42). New York: Springer Publishing.
- Sabat, S. (2002). Surviving manifestations of selfhood in Alzheimer's Disease: A case study. *Dementia, 1*(1), 25-36.
- Schaefer, J.A., & Moos, R. H. (1996). Effects of work stressors and work climate on long-term care staff's job morale and functioning. *Research in Nursing and Health, 19*, 63-73.
- Schaefer, A.W. (1981). *Women's reality*. New York: Winston Press.
- Schmeekle, M., & Bengtson, V.L. (1999). Conclusions from a longitudinal study: Cross-national perspectives. [Review of the journal article Successful Aging]. *Contemporary Gerontology, 5*(3), 87-90.

- Schmid, H. (2002). Relationships between organizational properties and organizational effectiveness in three types of nonprofit human service organizations. *Public Personnel Management, 31*(3), 377-395.
- Scott, W. R. (2003). *Organizations: Rational, natural, and open systems*. Upper Saddle River, NJ: Prentice Hall.
- Schein, E.H. (1992). *Organizational culture and leadership*. San Francisco: Jossey-Bass.
- Selznick, P. (2005). Foundation of the theory of organization. In J.M. Shafritz, J.S. Ott, and Y.S. Jang (Eds.), *Classics of Organization Theory* (pp.103-112, 6th ed.) Belmont, CA: Wadsworth. (Reprinted from Foundation of the theory of organization. *American Sociological Review* 13, 25-35 by P. Selznick, 1948.)
- Settersten, R.A. (2005). Aging and the life course. In R.H. Binstock & L.K. George (Eds.), *Handbook of aging and social sciences* (6th ed., pp.3-17). San Diego, CA: Academic Press.
- Skirrow, P., & Hatton, C. (2007). Burnout amongst direct care workers in services for adults with intellectual disabilities: A systematic review of research findings and initial normative data. *Journal of Applied Research in Intellectual Disabilities, 20*, 131-144.
- Squillace, M.R., Reimsberg, R.E., Harris-Kojetin, L.D., Bercovitz, A., Rosenoff, E., & Han, B (2009). The national nursing assistant survey: Improving the evidence base for policy initiatives to strengthen the certified nursing assistant workforce. *The Gerontologist, 49*(2), 185-197.
- Steis, M.R., & Fick, D.M. (2008). Are nurses recognizing delirium? A systematic review. *Journal of Gerontological Nursing, 34*(9), 43-48.

- Stone, R., & Weiner, J.M. (2001). *Who will care for us? Addressing the long-term care workforce crisis*. Washington, DC: Urban Institute and the Institute for the Future of Aging Services.
- Stott, A.L., Brannon, S.D., Vasey, J., Dansky, K.H., & Kemper, P. (2007). Baseline management practices at providers in Better Jobs Better Care. *Gerontology & Geriatrics Education*, 28(2), 17-37.
- Strouse, M.C., Carroll-Hernandez, T.A., Sherman, J.A., & Sheldon, J.B. (2003). Turning over turnover: The evaluation of a staff scheduling system in a community-based program for adults with developmental disabilities. *Journal of Organizational Behavior Management*, 23(2/3), 45-63.
- Strouse, M.C., Carroll-Hernandez, T.A., Sherman, J.A., & Sheldon, J.B. (2003). Turning over turnover: The evaluation of a staff scheduling system in a community-based program for adults with developmental disabilities. *Journal of Organizational Behavior Management*, 23(2/3), 45-63.
- Strydom, A., Hassiotis, A., King, M., & Livingston, G. (2009). The relationship of dementia prevalence in older adults with intellectual disability to age and severity of ID. *Psychological Medicine*, 39, 13-21.
- Thaw, J., & Wolfe, S.F. (1986). The direct care worker: A socio-cultural analysis. In J. Thaw & A. J. Curvo (Eds.), *Developing responsive services: New perspectives on residential treatment*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Thomas, K.W., & Velthouse, B.A. (1990). Cognitive elements of empowerment. An interpretive model of intrinsic task motivation. *Academy of Management Review*, 15, 666-681.

- Thompson, L. (2004). Functional changes affecting people aging with disabilities. In B.J. Kemp and L. Mosqueda (eds.), *Aging with a disability: What the clinician needs to know* (pp.102-129). Baltimore: John Hopkins Press.
- Tsiantis, J., Diareme, S., Dimitrakaki, C., Kolaitis, A., Flios, S., Christogiorgos, S., Weber, G., Salvador-Carulla, L., Hillery, J., & Costello, H. (2004). Care staff awareness training on mental health needs of adults with learning disabilities. *Journal of Learning Disabilities*, 8, 221-233.
- Tukey, J. W. (1977). *Exploratory Data Analysis*. Reading, MA: Addison-Wesley.
- Tulane University (2009). *Analysis and data cleaning*. Retrieved on October 30, 2009 at <http://www.tulane.edu/~panda2/Analysis2/datclean/dataclean.htm#ageheap>
- U.S. Department of Health and Human Services, Health Resources and Services Administration (DHHS) (2004). *Nursing aides, home health aides, and related health care occupations—National and local workforce shortages and associated data needs*. Retrieved on May 28, 2009, from <http://ftp.hrsa.gov/bphr/nationalcenter/RNandHomeAides.pdf>
- Vittoria, A. K. (1998). Preserving selves: Identity work and dementia. *Research on Aging*, 20(1), 91-136.
- Waldron, M., Hasson, F., Kernohan, W.G., Whittaker, D., & McClaughlin, D. (2008). Evaluating education in palliative care with link nurses in nursing homes. *British Journal of Nursing*, 17(17), 1078-1083.
- Weber, M. (1946). The distribution of power within the political community: Class, status, party. In C.Calhoun, J. Gerteis, J. Moody, S. Pfaff, K. Schmidt, & I. Virk (Eds.), *Classical Sociological Theory* (pp.206-215). Malden, MA: Blackwell.

- (Reprinted from M. Weber, *Max Weber: Essays in Sociology*, (pp.180-193) by H. Gerth and C. W. Mills (trans), Oxford University Press.
- Weiner, J.M., Squillace, M.R., Anderson, W.L., & Khatutsky, G. (2009). Why do they stay? Job tenure among certified nursing assistants in nursing homes. *The Gerontologist*, *49*(2), 198-210.
- Weisbrod, B.A. (1998). The nonprofit mission and its financing: Growing links between nonprofits and the rest of the economy. In B.A. Weisbrod (ed.), *To profit or not to profit: The commercial transformation of the nonprofit sector* (pp.1-25) Cambridge, England: Cambridge University Press.
- West, E.A., Griffith, W.P., & Iphofen, R. (2007). A historical perspective on the nursing shortage. *Medsurg Nursing*, *16*(2), 124-130.
- White, C., Holland, E., Marsland, D., & Oakes, P. (2003). The identification of environments and cultures that promote the abuse of people with intellectual disabilities: A review of the literature. *Journal of Applied Research in Intellectual Disabilities*, *16*(1), 1-10.
- Woodward, A. (2009). Engaging Frontline workers in times of organizational change. *Public Administration Review*, *Jan/Feb*, 25-28.
- Yeatts, D.E., & Seward, R.R. (2000). Reducing turnover and improving health care in nursing homes: The potential effects of Self-managed work teams. *The Gerontologist*, *40*(3), 358- 363.
- Yetman, M.H., & Yetman, R.J. (2002). *The effect of nonprofits' taxable activities on the supply of private donations*. Conference Presentation.
- Yukl, G. (2006). *Leadership in Organizations* (6th ed.). Upper Saddle River, NJ: Pearson-

Prentice Hall.

Zimmerman, M., Israel, B., Schultz, A., & Checkoway, B. (1992). Further explorations in empowerment theory: an empirical analysis of psychological empowerment.

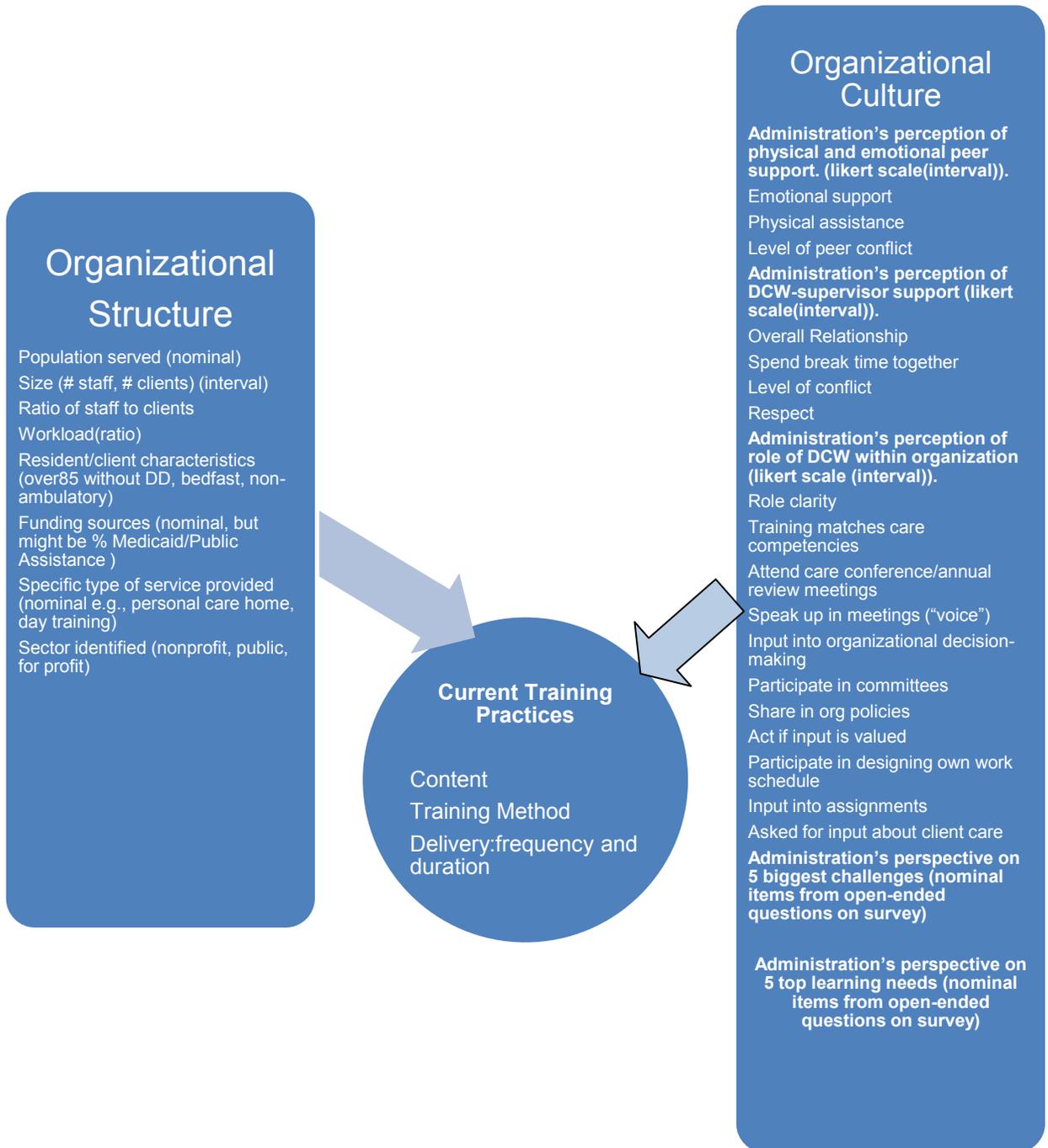
American Journal of Community Psychology, 20(6), 707-727.

Zimmerman, S., Williams, C.S., Reed, P.S., Boustani, M., Preisser, J.S., Heck, E., & Sloane, P.D. (2005). Attitudes, stress, and satisfaction of staff who care for

residents with dementia. *The Gerontologist, 45(1), 96-105.*

APPENDIX A

Social Structure and Personality Framework Applied to Organization



APPENDIX B

Table B1 Summary of Evidence-Based “Best Practices” From Review of the Literature

<u>National/State Initiatives</u>	<u>Best Practice</u>	<u>Research Method and Findings</u>	<u>Reference</u>
<p>College of Direct Support Web-based training modules</p> <p>Used statewide in Connecticut Kansas Oklahoma Mississippi Montana Pennsylvania South Dakota Tennessee Virginia Agencies in 13 other states also use curriculum</p> <p>*In MR/DD Network</p>	<p>On-line Training for DCWs and supervisors (over 50,000 learners enrolled). Developed with national subject matter experts.</p> <p>No Aging Curriculum currently available although national leaders state it is under development.</p> <p>1.Topics focus on all ages include: -Safety at home and in community -Maltreatment of vulnerable adults and children -Supporting healthy lives -Individual rights and choice -Community inclusion -Positive behavior support -Documentation -You’ve got a friend -Professionalism -Intro to Developmental Disabilities -Teaching people with DD -Cultural Competence -Medication support -Person-centered planning -Personal and self-care -Employment supports -Functional assessment(behavior) -Working with families and support networks -Training for supervisors of DCW</p> <p>2. Each module includes post test, portfolio, and on-the-job competency checklist</p>	<ol style="list-style-type: none"> 1. Category C 2. No systematic evaluation in peer-review journals 3. Evaluation briefs on website suggest: -University of Minnesota is currently conducting evaluation using randomly selected respondents. -Preliminary data from DCW and supervisors suggest: -CDS is a useful training tool -DCW suggest that CDS improved job Performance -Supervisors believe that DCW are better prepared for a variety of situations 	<p>www.collegeofdirectsupport.com</p>

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<p>DCW Development Intervention University of North Carolina-CH and NC Department of Health</p>	<p>1. Continuing education by on-site trainers (33 hours) -Infection Control -Team work -Dementia Care -Interpersonal skills 2. Compensation for participating in education modules 3. Supervisory training for frontline supervisors 4. Retention contracts for bonus or wage increase upon completion of the course. 5. Coaching supervision training inseparable from DCW training. 6. Translation of learning to practice necessitates: -antecedent culture change -address learner characteristics -booster sessions</p>	<p>1. Category B/Category Q 2. Longitudinal quasi-experimental design supplemented by qualitative assessments. Semi-structured interview and survey compared 8 program NH and 10 comparison facilities. 3. At 3 months post, participants differed from controls: -better nursing care and supportive leadership scores -greater improvement in team work -stronger ratings of career/financial rewards 4. Focus groups with supervisors and DCWs. - 70% said less likely to leave - 75% better job satisfaction 5. Turnover reductions in 6 of 8 settings</p>	<p>Morgan & Konrad (2008). Morgan, Haviland, Woodside, & Konrad (2007).</p>
<p>“Win A Step Up” (NC) Program implemented in 84 facilities *In Aging Network</p>			
<p>DCW supervisors (NC) Coaching Supervision</p>	<p>Coaching Supervision developed by Paraprofessional Healthcare institute to teach supervisors how to encourage and enable problem-solving among staff -active listening -self-management -self-awareness -self-presentation</p>	<p>1. Category D 2. Measured only as part of the above study. No separate research study evaluates this curriculum in isolation (only in combination with DCW training modules).</p>	<p>Morgan & Konrad (2008). Morgan, Haviland, Woodside, & Konrad (2007). Paraprofessional Healthcare Institute(2008).</p>
<p>*In Aging network</p>			

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<p>Institute for Positive Behavior Support</p>	<p>1. 12 month training in positive behavior support (person-centered planning and functional behavioral assessment):</p> <ul style="list-style-type: none"> -online instruction to disseminate conceptual information - interactive field-based activities allow transfer of training -portfolio development (each participant builds a case study) <p>2. Train facilitators who build capacity in their region of the state</p> <p>3. Free access to online resources and instruction at various levels of complexity-adjust to geographical constraints</p>	<ol style="list-style-type: none"> 1. Category D 2. Curriculum based upon a thorough literature review 3. Currently being evaluated by University of Kansas in both adults and children 	<p>Freeman, Smith, Zarccone, Kimbrough, Tieghi-Benet, Wickham, Reese, & Hine (2005).</p>
<p>(University of Kansas and Kansas Department of Social and Rehab. Services) *in MR/DD network</p>			
<p>Initiatives in 5 states:</p>	<p>Pennsylvania <i>Workforce issues group</i> findings:</p> <ul style="list-style-type: none"> -low wages are only one factor contributing to retention -extent to which DCW are respected and given input into decisions as well as training opportunities are just as important as wages <p><i>Direct care workforce initiative</i></p> <ul style="list-style-type: none"> -funds for training along with other monetary incentives <p><i>Kaleidoscope Initiative</i></p>	<ol style="list-style-type: none"> 1. Category D Initiatives were not systematically evaluated 2. Work group found: <ul style="list-style-type: none"> -No shared agenda between stakeholders -Both policy and practice changes are needed -Requires collaboration among providers, workers, consumer groups, and public agencies -Collaboration is needed between nursing homes, residential and home care -State agencies often work independently rather than together on a workforce issue 	<p>U.S. Department of Health and Human Services (2003).</p>
<p>Pennsylvania California Wisconsin North Carolina</p>			

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Massachusetts

*Presbyterian Home of Moshannon Valley
Southwestern Partnership on Aging
 10 counties
 *Aging Caregiver Training Curriculum
Lancaster County Workforce Investment Board
 *Training for Frontline Supervisors
Delaware County Workforce Development Board
 *90 hour training-life skills training

-Even the most promising initiatives are not integrated into state budgets, but are operated from discretionary funds
 -*Nothing in the report mentioned best practices with regard to training DCW for working with individuals aging with DD*

California: Caregiver Training Initiative

-N. Rural Training and Employment Consortium to develop a continuum of health care education opportunities; works with community colleges' occupational programs
 -Regional Health Occupations training resource centers
 Collaboration between community colleges and employers

1. Category D
 2. Not peer-reviewed. Report on website only. Center for Health Policy and Program Evaluation at the University of Wisconsin-Madison conducted independent evaluation:
 - Wellspring meshes clinical training with culture change initiatives.
 - Better quality of life for residents and better quality of work environment for staff.

Wisconsin

-Wellspring Alliance
 -Wisconsin Alzheimer's Institute of the University of Wisconsin Medical School Training (145 staff from 40 facilities)
 *WETA education and training plus mentoring/coaching on the job.

1. Category D
 2. No report of evaluation available

Massachusetts

-Extended Career Ladder Initiative
 Workplace education for retention

Wellspring Innovative Solutions
www.wellspringis.org

Ryan Engle

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including skill development, specialization, and culture change initiatives (funds partnerships between DCW facilities and educational settings)

North Carolina

-Win A Step Up (see above)

Boston University: Cultural Competence

Creating Solutions: Handling culturally complex situations in long-term care

1. Category D
2. No report of evaluation available

Center for Organization, Leadership, and Management Research
School of Public Health
Boston University
Boston, MA
rlengle@bu.edu

1. Category D
2. No report of evaluation available
Endorsed by 2 Area Agency on Aging

Dolly Fleming
Community of Vermont Elders
dolly@vermontelders.or

CareWell**Vermont Demonstration Project**

4 modules

- Providing care
- Developing caregivers
- Providing safety
- Building relationships

Category D

1. No report of evaluation available

Diane Menio
menio@carie.org

CARIE:**Center for Advocacy for the Rights and Interests of the Elderly****Pennsylvania Demonstration Project Universal Core Competency Manual**

6 modules

- Person-centered
- Relationship focused
- Direct care
- Based upon adult learning principles

1. Category C
2. Reported on BJBC website
3. Single group post evaluation of program: 94% DCW said that they were more likely to remain on the job based on the program.

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Robert Wood Johnson Foundation
Beyond Basics in Dementia Care Vermont Demonstration Project
 12 hour-3 Session-pathology of dementia
 -managing behavior-managing the environment

Dolly Fleming
 Community of Vermont Elders
 dolly@vermontelders.org

Better Jobs Better Care Initiative
Iowa Caregivers Association: Leadership and Mentoring
 One day leadership program
 Mentoring Curriculum

Tools and Curricula

<http://www.bjbc.org>
LEAP (Learn, Empower, Achieve, Produce)
 2 part module
 Trains supervisors and charge nurses
 Trains DCW in person-centered care, mentoring, leadership, and career building.
 Emphasis on the 3 Rs of Retention Relationships, Respect, Recognition

1. Category C
2. Evaluated in 14 LTC organizations
3. Pre-experimental study with no comparison groups
4. Pre-post comparison revealed significant increases in work empowerment, leadership effectiveness, job satisfaction and work effectiveness.
5. Researchers suggest the program can be easily integrated into existing staff development

Di Findley
 Iowa CareGivers Association
 Des Moines, Iowa
difindley@iowacaregivers.org

*Primarily in Aging Network
Team-Building Training for DCW Leadership Training for Supervisors
 5 one hour modules
 Theory of Org Culture
 Communication
 Teamwork and Practice

1. Category D
2. No report of evaluation available.

Hollinger-Smith & Ortigara (2004).

Only One of the initiatives included one session from the

MatherLifeways Institute on Aging

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MR/DD perspective

www.matherlifeways.com

Professional Care Management Institute

Brad Levan

www.p-c-m-i.org

Local Studies- Focus on Content

Behavior Management skills

*Aging Network

Training in:
 1. Behavior skills training program for DCWs
 2. Staff motivational system for supervisor

1. Category A
2. Randomized clinical trial of 88 residents in two urban nursing homes
3. Formal staff management system was more effective than conventional supervision in maintaining outcomes

Burgio, Stevens, Burgio, Roth, Paul, & Gerstle (2002).

Challenging Behaviors

*MR/DD Network

1. Challenging behaviors
 2. 8 hour course

1. Category A
2. Comparison control group who did not receive training
3. Findings: DCW who received training improved knowledge significantly more than those that did not receive training.
4. Knowledge was sustained at 3 and 6 month post training.
5. Replication study: found improvement in staff behaviors as well as knowledge.

McKenzie, Paxton, Patrick, Matheson, & Murray (2000).

McKenzie, Sharp, Paxton, & Murray (2002).

Communication Skills Training

Training in use of

Training in communication

1. Category B
2. Quasi-experimental Non-equivalent Comparison group
3. Trained CNAs talked more, used positive statements more frequently, and tended to

Burgio, Allen-Burge, Roth, Bourgeois, Dijkstra, Gerstle, Jackson, and Bankester (2001).

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memory Books

*Aging Network

increase the number of specific instructions given to residents. Changes in staff behavior did not increase in an increase in total time giving care to residents. Maintenance of CNAs behavior change was found two months after research staff exited the facility.

Dementia

Thorough needs assessment to discern training needs for DCW

Behaviors

Family-relations

Cultural

Competence

*Aging Network

- Category Q
Qualitative (interviews with DCW)
- 2. Topics desired in training:
 - how to deal with residents with dementia
 - how to deal with combative residents
 - how to deal with difficult family members
 - dealing with racism from families and residents.

Noelker, & Ejaz, (2001).

Mental Health

Training in mental health

*MR/DD Network

Knowledge, attitude

Raise awareness of dual diagnosis

Educate in best practice guidelines on assessment and caring issues

1. Category C
2. Pre-experimental design
3. Pre-post comparison revealed that both community-based and institutional settings improved knowledge and attitudes concerning mental health
4. Only institutional staff had significant improvement in practice post training

Tsiantis, Diareme, Dimitrakaki, Kolaitis, Christogiorgos, Weber, Salvador-Carulla, Hillary, & Costello (2004).

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Peer Mentoring	6 hr training in how to be a peer mentor	1. Category B Nonequivalent Comparison	Hegeman, Hoskinson, Munro, Maiden, and Pillimer (2007)
*Aging Network	1. What is a mentor?	2. First Study Delayed comparison design with 16 facilities (10 intervention/6delayed).	
	2. Tools for mentoring	Intervention showed improvement in	
	3. Communication	retention	
	4. Compassion	3. Second Study 15 facilities-3 groups	
	5. Attitude 6. Leadership	4. Initial increase in retention, then slight decrease	
	Training in:		
Person-Centered Care	1. Knowledge of dementia	1. Category C	Boettcher, Kemeny, DeShon, & Stevens, (2004).
*Aging Network	2. Person-centered care	2. Pre-experimental design	
	3. Communication skills	3. Post knowledge scales revealed	
	4. Skills for individualizing care	Knowledge retention(2 months post) 73% retention rate;	
	5. Knowledge of and skills for responding to need-driven behavior	4. Pre-post comparison of behavioral observation scale showed improvement in person-centered behaviors to residents (transfer of training on the job),	
	6. Skills related to team work, conflict resolution		
	28 hours Training in	1. Category C	
		2. Evaluated using 5 different instruments	
		3. 48 different home care agencies	
		4. Combined data from 2 different groups, 2	

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	Problem-solving	different years	Coogle, Parham, Jablonski, & Rachel
Problem-Solving	Communication	5. Reactions were positive 6. Perception of self-efficacy	(2007).
*Aging/Home Care	Stress Management		
	Used network of real-time videoconferencing		
Touch:	A study to determine the learning needs of DCWs	1. Category Q 2. Qualitative study: focus groups 3. Themes: Staff want to learn more about using touch within and outside of care	Dobson, Carey, Conyers, Upadhyaya, & Raghavan (2004).
*MR/DD Network			
Training linked to organizational variables	Training on SCU-Longitudinal study	1. Category C All staff increased their knowledge during the study period 2. For non-RN nursing staff, experimental group members were more satisfied with their professional preparation than the non-RN staff on the integrated unit. 3. RNs were significantly more satisfied with their preparation whether they were on the SCU or not, perhaps because their work setting reinforced acquired knowledge. 4. Satisfaction and lower absenteeism may related to level of training.	Maas, Buckwalter, Swanson, & Mobily, (1994).
* Aging Network			
Stress	Psycho-educational training:	1. Category A Randomized controlled study	Ostwald, Hepburn, Caron, Burns, & Mantell (1999).
Reducing caregiver	Use stress mediation model in an approach to caregiver training. This	2. Multidimensional mediation may be needed	

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burden/stress *Aging Network	psycho-educational training was developed for <i>family</i> caregivers, but may have implications for DCWs.	to improve outcomes in a fundamentally stressful situation: - personal resources for caregiving (knowledge, skill, belief in abilities) - external resources for caregiving, especially the organization of others to support the caregiver	
Supervisors Team-building Motivation Leadership skills *Aging Network	Training for supervisors of DCW	1. Category Q 2. Qualitative: focus groups with DCWs and supervisors to determine training needs.	Noelker & Ejaz, (2001).
Work Teams Self-managed (SMWT) *Aging Network	Training in decision making process: -clarify -identify all possible solutions -weigh the strengths and weaknesses -selection	1. Category Q Interviewed high and low productivity teams. SMWTs were found to reduce employee turnover and increase job satisfaction. 2. Researchers suggest this may be because the decisions made by SMWT are more effective since the persons making the decisions are the persons most	Yeatts & Seward (2000).

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knowledgeable about the work.

3. Staff reported higher levels of self-esteem and more desire to continue current job after implementation of SMWT.

Local Studies: Focus on Method

<p>Essential methods in dementia care</p>	<p>Role playing with immediate feedback, On-the-job training Motivational systems</p>	<ol style="list-style-type: none"> 1. Category A 2. Randomized clinical trial of 88 residents in two urban nursing homes 	<p>Burgio, Stevens, Burgio, Roth, Paul, & Gerstle, (2002).</p>
<p>Experiential Techniques</p>	<p>Role plays On the job training Interactive discussion Homework practice</p>	<ol style="list-style-type: none"> 1. Category C Multi-method, pre-experimental 2. Staff reported 2 months post: - high ratings of experiential and interactive techniques -perceived high levels of transfer to work 	<p>Kemeny, Boettcher, DeShon, & Stevens, (2006).</p>
<p>Interactive Techniques, Boosters</p>	<p>5 min lectures Role Plays Case Studies</p>	<ol style="list-style-type: none"> 1. Category B-nonequivalent comparison 2. Retention rates improved as a result of the training and program that followed 	<p>Hegeman, Hoskinson, Munro, Maiden, and Pillimer (2007)</p>

APPENDIX B

Situating Learning	<p>Learner is a “cognitive apprentice” who learns through imitation and practice in cooperative, authentic activity.</p> <p>Learn through practice, correction by masters, reflection, and self-instruction.</p>	<ol style="list-style-type: none"> 1. Category Q 2. Qualitative study to teach nurses about research <p>Key Themes:</p> <ul style="list-style-type: none"> Reflection Collaboration Coaching Practice Self-Learning 	Gieselman, Stark, & Farruggia (2000).
Staff motivational system accompanied training	Motivated staff to use the communication techniques learned and the memory books	<ol style="list-style-type: none"> 1. Category B 2. One study used non-equivalent comparison group 3. Category A 4. One study was randomized control study 	<p>Burgio, Allen-Burge, Roth, Bourgeois, Dijkstra, Gerstle, Jackson, & Bankester, (2001).</p> <p>Burgio, Stevens, Burgio, Roth, Paul, & Gerstle, (2002).</p>
<p>Training Relevance</p> <p>More hands-on training</p> <p>Adult learning principles</p>	<p>Out of these findings, they developed:</p> <p>Dementia Care Specialist Certificate program.</p> <p>Train the trainer Program for DCWs to train others in facility Cleveland, Ohio</p> <p>Combined with</p> <p>Community College management training for supervisors</p>	<ol style="list-style-type: none"> 1. Category Q <p>Qualitative (interviews conducted with DCW)</p> <ul style="list-style-type: none"> -Most common complaints: too much classroom time and not enough clinical time -needs to be geared to the adult learner do not prefer lectures and videos - interactive -recognize literacy issues -include DCWs in planning -allow opportunities for home study -give time off to attend with pay, offer in-house rather than having to go off-site -flexibility: fewer hours, offered more 	Noelker, & Ejaz,(2001).

APPENDIX B

often, before shift /not after shift)

1. Category D
2. Descriptive study with large sample from 5 Ohio Counties. Interviews with 644 DCW staff from 49 LTC organizations(SNF, Assisted Living, and Home care) Menne, Ejaz, Noelker, & Jones (2007).

APPENDIX C. SURVEY QUESTIONNAIRE

**Assessment of Training on Aging with Developmental Disabilities
for Direct Care Workers in Pennsylvania**

SURVEY

Thank you for taking the time to complete this questionnaire. Please answer the following questions about your facility/organization/agency. Your responses are **confidential**. **The information that you provide will be reported only as part of a summary** of all service providers to give us a better picture of current training of direct care workers in Pennsylvania. **Your assistance and cooperation are greatly appreciated!**

1. In what **county** of Pennsylvania is your organization located?

2. Please indicate the best description of **your organization?** (*Please check only one from each column.*)

<u>Type of Organization</u>	<u>Sector</u>
<input type="checkbox"/> Personal Care Home	<input type="checkbox"/> Nonprofit
<input type="checkbox"/> Assisted Living	<input type="checkbox"/> For-profit
<input type="checkbox"/> Home Health Care	<input type="checkbox"/> Government
<input type="checkbox"/> Adult Day Care	
<input type="checkbox"/> Residential Care/Group Home	
<input type="checkbox"/> Vocational Rehabilitation	
<input type="checkbox"/> Day Training Program	
<input type="checkbox"/> MR Supports Coordination	
<input type="checkbox"/> Intermediate Care Facility	
<input type="checkbox"/> Skilled Nursing Home	
<input type="checkbox"/> Other, please specify:	

STAFF DEVELOPMENT OF DIRECT CARE WORKERS

3. **How many** residents/clients/consumers do you currently serve? _____

(Data from your last weekly or monthly census number is fine.)

4. Of the residents/clients/consumers identified in #3, please list the **number** of who are:

(A person can be counted in more than one category.)

(a) individuals who do not have a developmental disability over age 85 _____

(b) individuals with a developmental disability over age 60 _____

(c) individuals who are non-ambulatory, with or without assistive device _____

(d) individuals who do not leave the bed for more than an hour a day _____

(e) individuals who have a diagnosis of dementia _____

5. Please list the **number** of residents/clients/consumers by primary payment mechanism:

(a) Private Pay _____

(b) Medicare _____

(c) Medical Assistance _____

(d) Medicaid Waiver _____

(e) SSI _____

(f) Private Insurance _____

STAFF DEVELOPMENT OF DIRECT CARE WORKERS

The following questions specifically pertain to the Direct Care Workers or front-line staff (nursing assistants, home health aides, resident support staff, etc.) employed by your organization.

6. How many direct care workers does your organization/agency/facility employ?

Full-time _____

Part-time _____

7. Please list the **number** of direct care workers who are:

(a) Younger than age 25 _____

(b) Age 26-35 _____

(c) Age 36-45 _____

(d) Age 46-55 _____

(e) Age 56-65 _____

(f) Age 65 + _____

8. In regard to direct care workers in your facility/agency/organization:

The average length of employment of direct care workers in months is: _____

The average number of newly hired direct care workers per year is:

9. Please list the **number** of direct care workers who are:

Race/Ethnicity

Men

Women

African-American/Black

STAFF DEVELOPMENT OF DIRECT CARE WORKERS

Hispanic/Latino(a)	_____	_____
Caucasian/White	_____	_____
Asian/Asian American	_____	_____
Other	_____	_____

10. **How many** direct care worker hours are used to staff your organization/agency/facility in a typical day?

Direct Care Workers		
<u>Shift</u>	<u>Hours Per Shift</u>	<u>Per Shift</u>
Days	_____	_____
Evening	_____	_____
Nights	_____	_____
Other	_____	_____

11. Please circle the **frequency** of the behaviors, described below, among workers at your organization, using the following response options: **Never (N) Rarely (R) Sometimes (S) Frequently (F) Very Frequently (VF)**

N R S F VF

STAFF DEVELOPMENT OF DIRECT CARE WORKERS

Direct care workers emotionally support each other in resident/client/consumer care.	N	R	S	F	VF
Direct care workers get physical assistance in resident/client/consumer care from their co-workers.	N	R	S	F	VF
Direct care workers support residents/clients/consumers who may be (or become) uncooperative or angry.	N	R	S	F	VF
Direct care workers experience conflict with each other.	N	R	S	F	VF
Direct care workers and their supervisors get along in this organization.	N	R	S	F	VF
Direct care workers and their supervisors sit with each other during a meal or snack break.	N	R	S	F	VF
Direct care workers express uncertainty about their role.	N	R	S	F	VF
Direct care workers must do tasks in resident/client/ consumer care for which they have no specific training.	N	R	S	F	VF
Direct care workers have conflict with supervisors over resident/client/consumer care issues.	N	R	S	F	VF
Direct care workers comment that supervisors respect them.	N	R	S	F	VF
Direct care workers are invited to participate in care conference/annual review meetings.	N	R	S	F	VF
Direct care workers attend care conference/annual review meetings.	N	R	S	F	VF
Direct care workers speak up in meetings.	N	R	S	F	VF
Direct care workers' input is considered in organizational decision-making.	N	R	S	F	VF
Direct care workers participate on committees to help improve the quality of the care.	N	R	S	F	VF

STAFF DEVELOPMENT OF DIRECT CARE WORKERS

Direct care workers rarely have anything to share about organizational policies.	N	R	S	F	VF
Direct care workers act as if their input is valued.	N	R	S	F	VF
Direct care workers participate in making their schedule.	N	R	S	F	VF
Direct care workers have input into making their assignments.	N	R	S	F	VF
Supervisors ask direct care workers for input about residents'/clients'/consumers' care.	N	R	S	F	VF

STAFF DEVELOPMENT OF DIRECT CARE WORKERS

12. The following items ask about **training of Direct Care Workers** at your facility/organization/agency.

Content Area	Is this content covered?	How often is content on this topic provided?	How much time is spent on this content each time presented?	What methods are used in training to deliver this content? <i>(Please check only those that apply.)</i>
Dementia (and related diagnoses such as Alzheimer's Disease and/or multi-infarct dementia)	<input type="checkbox"/> Yes <input type="checkbox"/> No (If no, please skip the items to the right of this box and go on to the next content area.)	<input type="checkbox"/> Orientation only <input type="checkbox"/> Once a month <input type="checkbox"/> Every quarter <input type="checkbox"/> Every 6 months <input type="checkbox"/> Once a year <input type="checkbox"/> Every other year <input type="checkbox"/> Other	<input type="checkbox"/> 1 to 30 minutes <input type="checkbox"/> 31 to 60 minutes <input type="checkbox"/> 61 minutes to half-day <input type="checkbox"/> All day <input type="checkbox"/> More than one day <input type="checkbox"/> Other	<input type="checkbox"/> Classroom <input type="checkbox"/> Hands-on demonstrations <input type="checkbox"/> Reflective learning <input type="checkbox"/> Homework/Practice <input type="checkbox"/> Coaching on site <input type="checkbox"/> Interactive or experiential learning (case studies, scenarios or role plays) <input type="checkbox"/> Video or DVD <input type="checkbox"/> Self-taught (such as reading information) <input type="checkbox"/> Other methods, please specify <hr/>
	<input type="checkbox"/> Yes	<input type="checkbox"/> Orientation	<input type="checkbox"/> 1 to 30	<input type="checkbox"/> Classroom

STAFF DEVELOPMENT OF DIRECT CARE WORKERS

Delirium (acute episodes of confusion and variation in consciousness)	<input type="checkbox"/> No (If no, please skip the items to the right of this box and go on to the next content area.)	<input type="checkbox"/> only <input type="checkbox"/> Once a month <input type="checkbox"/> Every quarter <input type="checkbox"/> Every 6 months <input type="checkbox"/> Once a year <input type="checkbox"/> Every other year <input type="checkbox"/> Other	<input type="checkbox"/> minutes <input type="checkbox"/> 31 to 60 minutes <input type="checkbox"/> 61 minutes to half-day <input type="checkbox"/> All day <input type="checkbox"/> More than one day <input type="checkbox"/> Other	<input type="checkbox"/> Hands-on demonstrations <input type="checkbox"/> Reflective learning <input type="checkbox"/> Homework/Practice <input type="checkbox"/> Coaching on site <input type="checkbox"/> Interactive or experiential learning (case studies, scenarios or role plays) <input type="checkbox"/> Video or DVD <input type="checkbox"/> Self-taught (such as reading information) <input type="checkbox"/> Other methods, please specify <hr/>
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Content Area	Is this content covered?	How often is content on this topic provided?	How much time is spent on this content each time presented?	What methods are used in training to deliver this content? <i>(Please check only those that apply.)</i>
Depression	<input type="checkbox"/> Yes <input type="checkbox"/> No (If no, please skip the items to the right of this box and go on to the next content area.)	<input type="checkbox"/> Orientation only <input type="checkbox"/> Once a month <input type="checkbox"/> Every quarter <input type="checkbox"/> Every 6 months <input type="checkbox"/> Once a year <input type="checkbox"/> Every other year <input type="checkbox"/> Other	<input type="checkbox"/> 1 to 30 minutes <input type="checkbox"/> 31 to 60 minutes <input type="checkbox"/> 61 minutes to half-day <input type="checkbox"/> All day <input type="checkbox"/> More than one day <input type="checkbox"/> Other	<input type="checkbox"/> Classroom <input type="checkbox"/> Hands-on demonstrations <input type="checkbox"/> Reflective learning <input type="checkbox"/> Homework/Practice <input type="checkbox"/> Coaching on site <input type="checkbox"/> Interactive or experiential learning (case studies, scenarios or role plays) <input type="checkbox"/> Video or DVD <input type="checkbox"/> Self-taught (such as reading information) <input type="checkbox"/> Other methods, please specify <hr/>
Physical aspects of aging	<input type="checkbox"/> Yes <input type="checkbox"/> No (If no,	<input type="checkbox"/> Orientation only <input type="checkbox"/> Once a	<input type="checkbox"/> 1 to 30 minutes <input type="checkbox"/> 31 to 60	<input type="checkbox"/> Classroom <input type="checkbox"/> Hands-on demonstrations

STAFF DEVELOPMENT OF DIRECT CARE WORKERS

<p>(bones, skin, muscles, organs, eyes, ears)</p>	<p>please skip the items to the right of this box and go on to the next content area.)</p>	<p>month <input type="checkbox"/> Every quarter <input type="checkbox"/> Every 6 months <input type="checkbox"/> Once a year <input type="checkbox"/> Every other year <input type="checkbox"/> Other</p>	<p>minutes <input type="checkbox"/> 61 minutes to half-day <input type="checkbox"/> All day <input type="checkbox"/> More than one day <input type="checkbox"/> Other</p>	<p><input type="checkbox"/> Reflective learning <input type="checkbox"/> Homework/Practice <input type="checkbox"/> Coaching on site <input type="checkbox"/> Interactive or experiential learning (case studies, scenarios or role plays) <input type="checkbox"/> Video or DVD <input type="checkbox"/> Self-taught (such as reading information) <input type="checkbox"/> Other methods, please specify <hr/></p>
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STAFF DEVELOPMENT OF DIRECT CARE WORKERS

Content Area	Is this content covered?	How often is content on this topic provided?	How much time is spent on this content each time presented?	What methods are used in training to deliver this content? <i>(Please check only those that apply.)</i>
Health promotion (nutrition and/or exercise, preventing secondary conditions)	<input type="checkbox"/> Yes <input type="checkbox"/> No (If no, please skip the items to the right of this box and go on to the next content area.)	<input type="checkbox"/> Orientation only <input type="checkbox"/> Once a month <input type="checkbox"/> Every quarter <input type="checkbox"/> Every 6 months <input type="checkbox"/> Once a year <input type="checkbox"/> Every other year <input type="checkbox"/> Other	<input type="checkbox"/> 1 to 30 minutes <input type="checkbox"/> 31 to 60 minutes <input type="checkbox"/> 61 minutes to half-day <input type="checkbox"/> All day <input type="checkbox"/> More than one day <input type="checkbox"/> Other	<input type="checkbox"/> Classroom <input type="checkbox"/> Hands-on demonstrations <input type="checkbox"/> Reflective learning <input type="checkbox"/> Homework/Practice <input type="checkbox"/> Coaching on site <input type="checkbox"/> Interactive or experiential learning (case studies, scenarios or role plays) <input type="checkbox"/> Video or DVD <input type="checkbox"/> Self-taught (such as reading information) <input type="checkbox"/> Other methods, please specify <hr/>
Physical activity (incorporating	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Orientation	<input type="checkbox"/> 1 to 30 minutes	<input type="checkbox"/> Classroom <input type="checkbox"/> Hands-on demonstrations

STAFF DEVELOPMENT OF DIRECT CARE WORKERS

exercise in recreational activities of a physical nature into the resident's/client's/consumer's day)	(If no, please skip the items to the right of this box and go on to the next content area.)	<input type="checkbox"/> only <input type="checkbox"/> Once a month <input type="checkbox"/> Every quarter <input type="checkbox"/> Every 6 months <input type="checkbox"/> Once a year <input type="checkbox"/> Every other year <input type="checkbox"/> Other	<input type="checkbox"/> 31 to 60 minutes <input type="checkbox"/> 61 minutes to half-day <input type="checkbox"/> All day <input type="checkbox"/> More than one day <input type="checkbox"/> Other	<input type="checkbox"/> Reflective learning <input type="checkbox"/> Homework/Practice <input type="checkbox"/> Coaching on site <input type="checkbox"/> Interactive or experiential learning (case studies, scenarios or role plays) <input type="checkbox"/> Video or DVD <input type="checkbox"/> Self-taught (such as reading information) <input type="checkbox"/> Other methods, please specify <hr/>
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STAFF DEVELOPMENT OF DIRECT CARE WORKERS

Content Area	Is this content covered?	How often is content on this topic provided?	How much time is spent on this content each time presented?	What methods are used in training to deliver this content? <i>(Please check only those that apply.)</i>
Need-driven behaviors (such as verbal or physical aggression, repetitive vocalizations, and anxious movements)	<input type="checkbox"/> Yes <input type="checkbox"/> No (If no, please skip the items to the right of this box and go on to the next content area.)	<input type="checkbox"/> Orientation only <input type="checkbox"/> Once a month <input type="checkbox"/> Every quarter <input type="checkbox"/> Every 6 months <input type="checkbox"/> Once a year <input type="checkbox"/> Every other year <input type="checkbox"/> Other	<input type="checkbox"/> 1 to 30 minutes <input type="checkbox"/> 31 to 60 minutes <input type="checkbox"/> 61 minutes to half-day <input type="checkbox"/> All day <input type="checkbox"/> More than one day <input type="checkbox"/> Other	<input type="checkbox"/> Classroom <input type="checkbox"/> Hands-on demonstrations <input type="checkbox"/> Reflective learning <input type="checkbox"/> Homework/Practice <input type="checkbox"/> Coaching on site <input type="checkbox"/> Interactive or experiential learning (case studies, scenarios or role plays) <input type="checkbox"/> Video or DVD <input type="checkbox"/> Self-taught (such as reading information) <input type="checkbox"/> Other methods, please specify <hr/>
Sexuality	<input type="checkbox"/> Yes <input type="checkbox"/> No (If no,	<input type="checkbox"/> Orientation only <input type="checkbox"/> Once a	<input type="checkbox"/> 1 to 30 minutes <input type="checkbox"/> 31 to 60	<input type="checkbox"/> Classroom <input type="checkbox"/> Hands-on demonstrations

STAFF DEVELOPMENT OF DIRECT CARE WORKERS

	<p>please skip the items to the right of this box and go on to the next content area.)</p>	<p>month</p> <p><input type="checkbox"/> Every quarter</p> <p><input type="checkbox"/> Every 6 months</p> <p><input type="checkbox"/> Once a year</p> <p><input type="checkbox"/> Every other year</p> <p><input type="checkbox"/> Other</p>	<p>minutes</p> <p><input type="checkbox"/> 61 minutes to half-day</p> <p><input type="checkbox"/> All day</p> <p><input type="checkbox"/> More than one day</p> <p><input type="checkbox"/> Other</p>	<p><input type="checkbox"/> Reflective learning</p> <p><input type="checkbox"/> Homework/Practice</p> <p><input type="checkbox"/> Coaching on site</p> <p><input type="checkbox"/> Interactive or experiential learning (case studies, scenarios or role plays)</p> <p><input type="checkbox"/> Video or DVD</p> <p><input type="checkbox"/> Self-taught (such as reading information)</p> <p><input type="checkbox"/> Other methods, please specify</p> <hr/>
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STAFF DEVELOPMENT OF DIRECT CARE WORKERS

Content Area	Is this content covered?	How often is content on this topic provided?	How much time is spent on this content each time presented?	What methods are used in training to deliver this content? <i>(Please check only those that apply.)</i>
End-of-life care and decision-making	<input type="checkbox"/> Yes <input type="checkbox"/> No (If no, please skip the items to the right of this box and go on to the next content area.)	<input type="checkbox"/> Orientation only <input type="checkbox"/> Once a month <input type="checkbox"/> Every quarter <input type="checkbox"/> Every 6 months <input type="checkbox"/> Once a year <input type="checkbox"/> Every other year <input type="checkbox"/> Other	<input type="checkbox"/> 1 to 30 minutes <input type="checkbox"/> 31 to 60 minutes <input type="checkbox"/> 61 minutes to half-day <input type="checkbox"/> All day <input type="checkbox"/> More than one day <input type="checkbox"/> Other	<input type="checkbox"/> Classroom <input type="checkbox"/> Hands-on demonstrations <input type="checkbox"/> Reflective learning <input type="checkbox"/> Homework/Practice <input type="checkbox"/> Coaching on site <input type="checkbox"/> Interactive or experiential learning (case studies, scenarios or role plays) <input type="checkbox"/> Video or DVD <input type="checkbox"/> Self-taught (such as reading information) <input type="checkbox"/> Other methods, please specify <hr/>
Person-centered care (allowing the individual's needs, abilities,	<input type="checkbox"/> Yes <input type="checkbox"/> No (If no, please skip the items to the right of this box and	<input type="checkbox"/> Orientation only <input type="checkbox"/> Once a month <input type="checkbox"/> Every quarter	<input type="checkbox"/> 1 to 30 minutes <input type="checkbox"/> 31 to 60 minutes <input type="checkbox"/> 61 minutes to half-day	<input type="checkbox"/> Classroom <input type="checkbox"/> Hands-on demonstrations <input type="checkbox"/> Reflective learning

STAFF DEVELOPMENT OF DIRECT CARE WORKERS

<p>and routines to dictate care)</p>	<p>go on to the next content area.)</p>	<p><input type="checkbox"/> Every 6 months</p> <p><input type="checkbox"/> Once a year</p> <p><input type="checkbox"/> Every other year</p> <p><input type="checkbox"/> Other</p>	<p><input type="checkbox"/> All day</p> <p><input type="checkbox"/> More than one day</p> <p><input type="checkbox"/> Other</p>	<p><input type="checkbox"/> Homework/Practice</p> <p><input type="checkbox"/> Coaching on site</p> <p><input type="checkbox"/> Interactive or experiential learning (case studies, scenarios or role plays)</p> <p><input type="checkbox"/> Video or DVD</p> <p><input type="checkbox"/> Self-taught (such as reading information)</p> <p><input type="checkbox"/> Other methods, please specify</p> <hr/>
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Content Area	Is this content covered?	How often is content on this topic provided?	How much time is spent on this content each time presented?	What methods are used in training to deliver this content? (Please check only those that apply.)
<p>Consumer-driven model (resident/client/consumer is in control of decision-making)</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>(If no, please skip the items to the right of this box and go on to the next content area.)</p>	<p><input type="checkbox"/> Orientation only</p> <p><input type="checkbox"/> Once a month</p> <p><input type="checkbox"/> Every quarter</p> <p><input type="checkbox"/> Every 6 months</p> <p><input type="checkbox"/> Once a year</p> <p><input type="checkbox"/> Every other year</p> <p><input type="checkbox"/> Other</p>	<p><input type="checkbox"/> 1 to 30 minutes</p> <p><input type="checkbox"/> 31 to 60 minutes</p> <p><input type="checkbox"/> 61 minutes to half-day</p> <p><input type="checkbox"/> All day</p> <p><input type="checkbox"/> More than one day</p> <p><input type="checkbox"/> Other</p>	<p><input type="checkbox"/> Classroom</p> <p><input type="checkbox"/> Hands-on demonstrations</p> <p><input type="checkbox"/> Reflective learning</p> <p><input type="checkbox"/> Homework/Practice</p> <p><input type="checkbox"/> Coaching on site</p> <p><input type="checkbox"/> Interactive or experiential learning (case studies, scenarios or role plays)</p> <p><input type="checkbox"/> Video or DVD</p> <p><input type="checkbox"/> Self-taught (such as reading information)</p> <p><input type="checkbox"/> Other methods, please specify _____</p>
<p>Mental Retardation or Intellectual Disability</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>(If no, please skip the items to the right of this box and</p>	<p><input type="checkbox"/> Orientation only</p> <p><input type="checkbox"/> Once a month</p> <p><input type="checkbox"/> Every quarter</p>	<p><input type="checkbox"/> 1 to 30 minutes</p> <p><input type="checkbox"/> 31 to 60 minutes</p> <p><input type="checkbox"/> 61 minutes to half-day</p>	<p><input type="checkbox"/> Classroom</p> <p><input type="checkbox"/> Hands-on demonstrations</p> <p><input type="checkbox"/> Reflective learning</p>

STAFF DEVELOPMENT OF DIRECT CARE WORKERS

	<p>go on to the next content area.)</p>	<p><input type="checkbox"/> Every 6 months</p> <p><input type="checkbox"/> Once a year</p> <p><input type="checkbox"/> Every other year</p> <p><input type="checkbox"/> Other</p>	<p><input type="checkbox"/> All day</p> <p><input type="checkbox"/> More than one day</p> <p><input type="checkbox"/> Other</p>	<p><input type="checkbox"/> Homework/Practice</p> <p><input type="checkbox"/> Coaching on site</p> <p><input type="checkbox"/> Interactive or experiential learning (case studies, scenarios or role plays)</p> <p><input type="checkbox"/> Video or DVD</p> <p><input type="checkbox"/> Self-taught (such as reading information)</p> <p><input type="checkbox"/> Other methods, please specify</p> <hr/>
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STAFF DEVELOPMENT OF DIRECT CARE WORKERS

Content Area	Is this content covered?	How often is content on this topic provided?	How much time is spent on this content each time presented?	What methods are used in training to deliver this content? (Please check only those that apply.)
Down syndrome	<input type="checkbox"/> Yes <input type="checkbox"/> No (If no, please skip the items to the right of this box and go on to the next content area.)	<input type="checkbox"/> Orientation only <input type="checkbox"/> Once a month <input type="checkbox"/> Every quarter <input type="checkbox"/> Every 6 months <input type="checkbox"/> Once a year <input type="checkbox"/> Every other year <input type="checkbox"/> Other	<input type="checkbox"/> 1 to 30 minutes <input type="checkbox"/> 31 to 60 minutes <input type="checkbox"/> 61 minutes to half-day <input type="checkbox"/> All day <input type="checkbox"/> More than one day <input type="checkbox"/> Other	<input type="checkbox"/> Classroom <input type="checkbox"/> Hands-on demonstrations <input type="checkbox"/> Reflective learning <input type="checkbox"/> Homework/Practice <input type="checkbox"/> Coaching on site <input type="checkbox"/> Interactive or experiential learning (case studies, scenarios or role plays) <input type="checkbox"/> Video or DVD <input type="checkbox"/> Self-taught (such as reading information) <input type="checkbox"/> Other methods, please specify <hr/>
Autism	<input type="checkbox"/> Yes <input type="checkbox"/> No (If no, please skip the items to the right of this box and go on to the next content area.)	<input type="checkbox"/> Orientation only <input type="checkbox"/> Once a month <input type="checkbox"/> Every quarter <input type="checkbox"/> Every 6 months <input type="checkbox"/> Once a year	<input type="checkbox"/> 1 to 30 minutes <input type="checkbox"/> 31 to 60 minutes <input type="checkbox"/> 61 minutes to half-day <input type="checkbox"/> All day <input type="checkbox"/> More than one day	<input type="checkbox"/> Classroom <input type="checkbox"/> Hands-on demonstrations <input type="checkbox"/> Reflective learning <input type="checkbox"/> Homework/Practice <input type="checkbox"/> Coaching on site <input type="checkbox"/> Interactive or experiential learning

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		<input type="checkbox"/> Every other year <input type="checkbox"/> Other	<input type="checkbox"/> Other	<input type="checkbox"/> (case studies, scenarios or role plays) <input type="checkbox"/> Video or DVD <input type="checkbox"/> Self-taught (such as reading information) <input type="checkbox"/> Other methods, please specify <hr/>
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Content Area	Is this content covered?	How often is content on this topic provided?	How much time is spent on this content each time presented?	What methods are used in training to deliver this content? (Please check only those that apply.)
Cerebral Palsy	<input type="checkbox"/> Yes <input type="checkbox"/> No (If no, please skip the items to the right of this box and go on to the next content area.)	<input type="checkbox"/> Orientation only <input type="checkbox"/> Once a month <input type="checkbox"/> Every quarter <input type="checkbox"/> Every 6 months <input type="checkbox"/> Once a year <input type="checkbox"/> Every other year <input type="checkbox"/> Other	<input type="checkbox"/> 1 to 30 minutes <input type="checkbox"/> 31 to 60 minutes <input type="checkbox"/> 61 minutes to half-day <input type="checkbox"/> All day <input type="checkbox"/> More than one day <input type="checkbox"/> Other	<input type="checkbox"/> Classroom <input type="checkbox"/> Hands-on demonstrations <input type="checkbox"/> Reflective learning <input type="checkbox"/> Homework/Practice <input type="checkbox"/> Coaching on site <input type="checkbox"/> Interactive or experiential learning (case studies, scenarios or role plays) <input type="checkbox"/> Video or DVD <input type="checkbox"/> Self-taught (such as reading information) <input type="checkbox"/> Other methods, please specify _____
Substance Abuse/Misuse	<input type="checkbox"/> Yes <input type="checkbox"/> No (If no, please skip the items to the right of this box and go on to the next content area.)	<input type="checkbox"/> Orientation only <input type="checkbox"/> Once a month <input type="checkbox"/> Every quarter <input type="checkbox"/> Every 6 months <input type="checkbox"/> Once a year	<input type="checkbox"/> 1 to 30 minutes <input type="checkbox"/> 31 to 60 minutes <input type="checkbox"/> 61 minutes to half-day <input type="checkbox"/> All day <input type="checkbox"/> More than one day	<input type="checkbox"/> Classroom <input type="checkbox"/> Hands-on demonstrations <input type="checkbox"/> Reflective learning <input type="checkbox"/> Homework/Practice <input type="checkbox"/> Coaching on site <input type="checkbox"/> Interactive or experiential learning

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		<input type="checkbox"/> Every other year <input type="checkbox"/> Other	<input type="checkbox"/> Other	(case studies, scenarios or role plays) <input type="checkbox"/> Video or DVD <input type="checkbox"/> Self-taught (such as reading information) <input type="checkbox"/> Other methods, please specify _____
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13. How does your organization **evaluate the effectiveness of training** of direct care workers?

(Please check only those that apply.)

- Attendance at training
- Knowledge testing
- Reaction/opinion/satisfaction questions at the end of training
- Observation and assessment of behaviors on the job
- Measuring outcomes for clients/residents/consumers
- Measuring organizational outcomes (such as staff satisfaction, turnover)

14. What are the **5 biggest challenges in delivering training** to direct care service workers at your organization (e.g., technology, financial support, training materials, time, support from superiors)?

1. _____

2. _____

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3.

4.

5.

15. What would you say are the **top 5 learning needs** of the direct care workers in your organization?

1.

2.

3.

4.

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5. _____

Is there anything else that you would like to add regarding the training of direct care service workers?

Thank you for your participation in this study!

Please return this survey, **along with copies of your training materials**, in the return envelope provided **no later than June 10, 2008**. We greatly appreciate your assistance.