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**IMPROVING LONG-TERM CARE MANAGEMENT PRACTICES AND DIRECT
CARE WORKER ORGANIZATIONAL COMMITMENT**

A Dissertation in

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by

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ABSTRACT

Research Objective. High turnover of direct care workers is one of the biggest challenges in the long-term care industry today. Several types of management practices, such as staff training, professional development, career advancement opportunities, and work redesign, have been linked to employee organizational commitment. Previous studies show organizational commitment is associated with lower employee turnover. This study provides several contributions to the existing literature by filling gaps in previous research and resolving same-source bias. Testing relationships between direct care worker organizational commitment and management practices will expand on the existing long-term care organizational literature, which is primarily descriptive. Further, investigating the impact of each type of setting on this relationship is a new contribution to this body of literature. Methodologically, the use of separate respondents for organizational and direct care worker-level data reduces same-source bias between the organizational-level predictor variables and the direct care worker-level outcome variables (Fedor, Caldwell, & Herold, 2006).

Study design. This analysis contains data from a panel of 76 clinical managers and 911 direct care workers who completed both waves of the Clinical Manager and Direct Care Worker Surveys used in the evaluation of the Better Jobs Better Care (BJBC) demonstration. The Clinical Manager Survey measures the work design, direct care worker training and development, and supervisor training management practice variables. The Direct Care Worker Survey contains items used to measure organizational commitment and demographics. Two types of research designs are used in this study. First, cross-sectional analyses, using baseline responses, investigate the relationship between baseline management practices and organizational commitment. Then, a one-group pretest-posttest design, examines whether

changes in management practices change organizational commitment. Several types of linear regression techniques including ordinary least squares (OLS) and logistic regression with robust estimation are used to analyze the data.

Results. In the cross-sectional analysis, greater use of feedback is associated with direct care workers recommending the organization for a job and thinking about quitting less often. Supervisor participation in a greater number of training programs and having direct care workers participation in career ladder programs is also related to direct care workers recommending the organization for a job. Staff participation in a greater number of staff training programs is also related to direct care workers being less likely to leave their job in the next year. Being a nursing facility and having staff development and training programs is also linked with direct care worker organizational commitment. However, including interactions only improved the models marginally. The only consistent relationship in the cross-sectional and longitudinal analyses is the association of supervisor training with direct care workers recommending the organization for a job.

Conclusion/Implications. Findings suggest aspects of both work design and staff training and development practices are related to direct care worker organizational commitment. For long-term care policy makers and administrators, who are concerned about increasing direct care worker retention, this study offers empirical evidence to formulate policies that improve management practices in these areas.

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EPIGRAPH

“But the manifestation of the Spirit is given to each one for the profit *of all*: for to one is given the word of wisdom through the Spirit, to another the word of knowledge through the same Spirit, to another faith by the same Spirit, to another gifts of healings by the same Spirit, to another the working of miracles, to another prophecy, to another discerning of spirits, to another *different* kinds of tongues, to another the interpretation of tongues. But one and the same Spirit works all these things, distributing to each one individually as He wills.”

1 Corinthians 12: 7-11

CHAPTER 1

INTRODUCTION TO THE PROBLEM

The existing and future shortage of direct care workers in the long-term care industry stems from projected increases in the elderly population, high turnover, and projected decreases in the traditional pool of this workforce. The elderly population in the United States is projected to grow from 13 million in 2000 to 27 million in 2050, which will significantly increase the demand for health and long-term care services (Assistant Secretary for Planning and Evaluation [ASPE], 2004; Squillace, Remsburg, Bercovitz, Roseoff, & Branden, 2006). Progress in medical technology has increased the life expectancy, thereby increasing the number of people with chronic health conditions and creating a higher demand for long-term care services (Chernichovsky & Markowitz, 2004).

By 2010, an additional 1.2 million direct care workers (i.e. certified nursing assistants, home health aides, nursing aides, etc.) will be needed to account for the increasing demand for long-term care services (ASPE, 2004). Findings from the National Nursing Assistant Survey indicate that nursing facilities experience, on average, a 71% annual turnover rate of nursing assistants (Squillace, Remsburg, Bercovitz, Roseoff, & Branden, 2006). The traditional direct care worker population, women between 25 and 50 years of age without a post-secondary education, is decreasing, making it difficult to meet the expected demand (ASPE, 2004).

This dissertation will test if a significant relationship exists between direct care worker organizational commitment and management practices known to be associated with commitment. Direct care workers provide 80-90% of hands-on care and assist with intimate care needs such as bathing, toileting, and dressing (Banaszak-Holl & Hines, 1996). High turnover of direct care workers affects quality of care by decreasing the continuity of care (Castle &

Engberg, 2005; Castle, Engberg, & Men, 2007; Schnelle, Simmons, Harrington, Cadogan, Garcia, & Bates-Jensen, 2004). Further, long-term care service recipients associate quality care with the direct care workers who provide these services (Sikorska-Simmons, 2006).

Direct care workforce retention continues to be one of the biggest challenges facing long-term care organizations and policy makers. The federal government through the Centers for Medicare and Medicaid Services (CMS) has identified this as a leading policy concern for state-level Quality Improvement Organizations (QIOs). QIOs are directed to assist nursing homes in improving the experience of care by monitoring staff satisfaction and turnover of certified nursing assistants (CNAs) (Centers for Medicare and Medicaid Services [CMS], 2005). This research may provide continuous quality improvement programs with evidence that process redesign, through improving management practices, is linked to direct care worker organizational commitment.

Substandard practices, such as poor direct care worker work design, lack of training for supervisors of direct care workers, and inadequate training and professional development opportunities for direct care workers, contribute to retention issues (Harris-Kojetin, Lipson, Fielding, Keifer, & Stone, 2004). Direct care workers ordinarily know when an organization's procedures are producing poor outcomes (Tang, Robertson, & Lane, 1996) and quality of care (Bowers & Becker, 1992). Bowers and Becker (1992) found some direct care workers quit because they were not able to provide quality care to the residents and clients they served. Management practices typically focus on promoting compliance with rules and regulations rather than developing psychological commitment to the organization (Tang et al., 1996).

Long-term care administrators need more than job satisfaction or commitment to the profession from direct care workers; they need organizational commitment to reduce turnover.

Therefore, organizational commitment of direct care workers is an important outcome to measure. Providing knowledgeable supervisors to lead and manage direct care workers appropriately, affording opportunities for career advancement, offering discretionary power through work design, and training for direct care workers may increase organizational commitment, leading to decreased turnover and increased continuity of care. Work design and training will also allow direct care workers to adapt to changes in their residents and clients, thereby improving quality of care.

CHAPTER 2

LITERATURE REVIEW

Background

The long-term care industry serves people who suffer from chronic conditions or disabilities that impair their physical or cognitive function. A majority of the clients are over 65 years old and, depending on the severity of their physical or cognitive impairments, will likely use at least one type of long-term care setting during their lifetimes (Kemper, 1992). Nursing facilities, assisted-living facilities, and home care agencies offer different types of services. Nursing facilities generally provide 24-hour nursing care and offer therapy services to residents who are medically stable but cannot remain in their homes. Assisted-living facilities assist people who cannot remain in their homes but do not need 24-hour nursing care. Housekeeping, meal preparation, and laundry services are usually provided in this setting. Typically, nursing and assisted-living facilities are in one building or on one campus (Evashwick, 2005; Stone, 2006). In contrast, home care services are provided within a client's home. Home care agencies provide care to "homebound" clients. Homebound eligibility is defined as "able to leave home only with great difficulty" (General Accounting Office [GAO], 2002, p.1).

In long-term care settings, direct care workers provide assistance with bathing, dressing, transferring, housekeeping, and feeding. Typical job titles include nurse aide, home health aide, and personal care attendant; however, direct care workers are not limited to these job titles. Currently, direct care workers are in short supply, and future estimates for long-term care needs are growing disproportionately to the number of typical workers who occupy these jobs.

Retention of direct care workers in long-term care is an ongoing issue. One method of improving retention is to increase wages. However, federal and state budgets often limit

reimbursement to long-term care organizations. This places constraints on increasing wages and benefits for direct care workers in long-term care settings and directly affects the efforts of long-term care organizations to recruit, retain, and maintain direct care workers (Stone, 2006).

Another method of improving retention is to improve management practices within long-term care organizations. Several state agencies, organizations, and advocacy groups recognize the urgency of the direct care worker workforce crisis and have attempted to document best practices to retain direct care workers in long-term care (Brannon, Barry, Angelelli, Weech-Maldonado, 2005; GAO, 2002; Harris-Kojetin et al., 2004; ASPE, 2004; Squillace et al., 2006).

Few empirical research studies investigate the effects of management practices on direct care workers, and little research compares the types of settings within the long-term care continuum. Stone (2006) reports, “Most evidence has been derived from descriptive, qualitative studies conducted primarily in nursing homes” (p. 413). Harris-Kojetin et al. (2004) identified direct care worker factors associated with poor retention in long-term care as: inadequate training, lack of mentoring, little or no opportunities for continuing education and development within the position, and poor supervision. However, no studies investigate whether greater use of these management practices impacts direct care worker organizational commitment in the long-term care industry using separate respondents for organizational- and direct care worker-level data.

Additionally, no studies examine whether the type of long-term care setting influences this relationship. As long-term care settings differ in their physical structure and organizational hierarchy, specific types of management practices may be useful in one setting but not in another. This dissertation addresses two questions:

1. Are management practices previously shown to be associated with organizational commitment related to direct care workers' reported commitment?
2. Does the type of long-term care setting affect this relationship?

For long-term care administrators and policy makers, the results of this study may provide further empirical evidence that management practices are associated with direct care worker organizational commitment. This research may also help policymakers to formulate policies appropriate for each type of long-term care setting and help administrators choose management practices that are applicable to their settings, thereby increasing retention and continuity of care within their organization.

Theoretical Framework

The conceptualization of this study is based on Steers's (1977) organizational commitment model (Figure 1) and aspects of Hackman and Oldham's (1980) job characteristics theory and Salancik and Pfeffer's (1978) social information processing theory. Steers (1977) cited three reasons for studying organizational commitment: (1) commitment is a better predictor of turnover than job satisfaction, (2) highly committed employees perform better than less committed employees, and (3) commitment is a useful indicator of effectiveness of an organization. The definition of organizational commitment used in his study was "the relative strength of an individual's identification with and involvement in a particular organization" (p. 46). Since Steers's publication in 1977, several other definitions of organizational commitment have been used in prior research. However, the general underlying theme and the definition used in this dissertation is the "bond formed between the employee and the organization" (Humphreys, Brunsen, & Davis, 2005, p.121).

Findings from recent studies are consistent with Steers’s reasons for investigating organizational commitment. Commitment is linked to lower turnover behavior (Eby, Freeman, Rush, & Lance, 1999; Lum, Kervin, Clark, Reid, & Sirola, 1998) and is used as a proxy for retention in several studies on the direct care workforce in long-term care (Adadevoh, 2003; Dobbs, 1997; McKenzie, 2006; Sikorska-Simmons, 2005). Later work by Mowday, Steers, & Porter (1979) found that commitment was a more stable job outcome than job satisfaction to measure and was less likely to change based on momentary, day-to-day events.

One of Steer’s (1977) main objectives was to investigate “the process by which commitments are formed ... in organizational settings” (p. 46). His model had three antecedents of organizational commitment: personal characteristics, job characteristics, and work experiences (Figure 1).

Figure 1. Steers’s Antecedents and Outcomes of Organizational Commitment Model



Recent studies investigated the relationship between direct care worker personal characteristics and organizational commitment in long-term care (Parsons, Simmons, Penn, & Furlough, 2003; Sikorska-Simmons, 2005). These relationships differ based on the type of long-term care settings. In nursing facilities, Parsons et al. (2003) found direct care workers who were older, less educated, and employed at the organization for a long period of time were less likely to quit. However, in assisted-living facilities, Sikorska-Simmons (2005) reported direct care

workers with more education were more committed to their organization. Because these studies have established the relationship between direct care worker characteristics and commitment in long-term care, the focus of this dissertation is on the relationship between management practices and organizational commitment. However, personal characteristics are used as control variables in the analysis.

Job characteristics, such as the amount of feedback provided on the job, and work experiences, or a worker's feeling that he or she is an important part of the organization, modeled in Steers's (1977) study had a positive influence on organizational commitment. Steers's (1977) job characteristic measures included job challenge, opportunities for social interaction, and frequency of feedback provided on the job. Later, Hackman and Oldham (1980) developed the job characteristics theory, which emphasized that improving job outcomes, such as organizational commitment, is a result of improving an employee's motivation or psychological state. This theory declares that psychological states can be improved by increasing five job characteristics: skill variety, task identity, task significance, autonomy, and job feedback through work redesign (Hackman & Oldham, 1980). Findings from previous research show support for Hackman and Oldham's (1980) job characteristics model (Wall & Clegg, 1981). In a longitudinal study, including three waves of measurement, of blue collar packing and production workers in a confectionary company, decreased turnover followed changes in feedback, autonomy, and identity (Wall & Clegg, 1981).

When testing the validity of the entire job characteristics model, Johns, Xie, and Fang (1992) found first and second level utility company managers did not require all five job characteristics for positive job outcomes, such as decrease turnover cognitions. This dissertation does not have a measure for skill variety, but the remaining four characteristics included in this

study can be used to describe the management practices that enrich a direct care worker's work design. For example, task identity, through participation in care planning; task significance, through written or verbal communication with other direct care workers or their supervisors about their clients' care; autonomy, through flexible scheduling or flex time; and feedback are all direct care worker job characteristics that can be improved through management practices.

An employee's work experience in Steers's (1977) model was defined as "a major socializing force and...an important influence on the extent to which psychological attachments are formed with the organization" (p. 47). Previous work cited by Steers (1977) included group attitudes toward the organization, organizational dependability and trust, rewards or the realization of expectations, and perceptions of personal investment and personal importance to an organization as areas of work experience known to influence commitment.

Salancik and Pfeffer's (1978) social information processing theory expands on the work experience component of Steers's (1977) model by emphasizing that "one can learn most about individual behavior by studying the informational and social environment within which that behavior occurs and to which it adapts" (Salancik & Pfeffer, 1978, p. 226). In other words, people gather information about their work environment through interactions with others and from their own work experiences. Although previous direct care worker organizational commitment investigations did not use social information processing theory, direct care workers' social experiences and the information they receive through their work environments are influenced by management practices. Practices, such as highly visible training and education programs, effective orientation and socialization processes, effective leadership, and participation in decisions are all signals that employees are valuable to the organization (Robertson & Tang, 1995). Therefore, improving supervisor training and direct care worker

training and development practices may increase a direct care worker's organizational commitment.

Steers's (1977) model, the job characteristics theory (Hackman & Oldham, 1980), and the social information processing theory (Salancik & Pfeffer, 1978) are useful in analyzing the relationship between management practices and direct care worker organizational commitment. Although these theories were combined to test the effects of social environment and job characteristics on job satisfaction in a public works division (Pollock, Whitbred, & Contractor, 2000), the application of these theories to the long-term care industry's direct care workforce is a new contribution to the existing literature.

Prior Research

Several studies have investigated the use of management practices and direct care worker job outcomes in nursing facilities, assisted-living facilities, or home care agencies (Adadevoh, 2003; Banaszak-Holl & Hines, 1996; Bowers, Esmond, & Jacobson, 2003; Brannon, Zinn, Mor, & Davis, 2002; Castle, Engberg, Anderson, & Men, 2007; Feldman, 1993; Hegeman, 2005; McKenzie, 2006; Parsons et al., 2003; Sikorska-Simmons, 2005). However, no studies analyzed the association between management practices and direct care worker organizational commitment across three long-term care settings with a large sample of direct care workers and non-aggregated, organizational-level data.

A wide range of studies investigate the relationship between direct care worker turnover and management practices, and most are in nursing facilities (Banaszak-Holl & Hines, 1996; Brannon et al., 2002; Castle et al., 2007; Parsons et al., 2003). Parsons et al. (2003) found nurse aide turnover was correlated with dissatisfaction with work schedules, job freedom and flexibility, opportunities for career advancement, input into program of care, performance

feedback, supervisor support, and supervision competence and skills in nursing homes. This is consistent with Banaszak-Holl and Hines's (1996) nursing home study, which found that including nurse aides in care planning meetings significantly reduced turnover.

Results regarding direct care worker training are inconsistent in previous literature. Banaszak-Holl and Hines's (1996) study found hours of aide training did not significantly reduce turnover in nursing homes. However, Castle et al. (2007) found perceptions of aides' skills, the amount of training the aides had, and the chances of receiving more training were significantly related to turnover, thoughts about quitting and seeking employment at another organization.

Job factors were used in one aspect of a study by Brannon et al. (2002) as predictors of being a nursing facility with a very low or very high nurse aide turnover. Among the job factors used in this study, having supervisors trained in management predicted a lower likelihood of being a very low turnover facility. This is consistent with the study by Parsons et al. (2003), which found dissatisfaction with supervision was significantly related to turnover in nursing homes.

Direct care worker retention and intent to leave were also linked with management practices in nursing facilities. Hegemen (2005) found a significant increase in CNA retention in 11 nursing homes participating in the Growing Strong Roots peer mentoring program in New York. After controlling for CNA demographics and other management practices, Parsons et al. (2003) found CNAs who were dissatisfied with personal and professional growth and involvement in decisions on the job were the most likely to report intentions of leaving or plans to look for another job.

Direct care worker perceptions of management practices were also investigated in a qualitative study of 41 CNAs in three nursing facilities in the Midwestern area of the United

States. Bowers et al. (2003) found CNAs felt undervalued and unappreciated due to a range of organizational policies and practices, which included negative interactions with their supervisors and poor CNA training and orientation processes. However, none of the previous studies analyzed the influence of the type of long-term care setting on the relationship between management practices and turnover because only one type of setting was included in each study.

Only two studies investigated the relationship between management practices and commitment. In a small sample of 43 direct care workers in six assisted-living facilities, McKenzie (2006) found supervisory and human resource practices were significantly associated with direct care workers' reports of role competence and job commitment. Sikorska-Simmons (2005) found organizational culture, which was measured by an instrument containing six subscales measuring staff perceptions of teamwork, morale, information flow, supervision, involvement, and frequency of meetings, was related to organizational commitment in a study of assisted-living facility staff members who had daily contact with residents. However, both studies only included assisted-living facilities, not nursing facilities or home care agencies. Further, the outcome variable in McKenzie's (2006) study is job commitment, not organizational commitment. And Sikorska-Simmons's (2005) sample included nurse's assistants and a variety of other staff members, such as dietitians and housekeepers.

One study examined the relationship between management practices and direct care worker job satisfaction in two types of long-term care settings (Friedman, Daub, Cresci, & Keyser, 1999). Friedman et al. (1999) investigated the relationship between direct care worker job satisfaction and perception of management practices in five nursing facilities and five community-based care settings using the Program of All-Inclusive Care for the Elderly (PACE) model. This study found that direct care workers' perception of management practices, such as

the frequency of discussing patients with the team and respect for suggestions, was a significant predictor of job satisfaction. When comparing the two types of long-term care settings, direct care workers employed in community-based settings using the PACE program had significantly higher levels of job satisfaction compared to nearby nursing facilities. Although this study showed a significant difference in the perception of management practices between two settings, it only included 10 organizations and does not include assisted-living. Further, this study assesses job satisfaction, which has been found to be a less stable measure compared to organizational commitment (Mowday et al., 1979).

Two studies compared the use of management practices and direct care worker perceptions across long-term care settings (Brannon et al., 2005; Stott, Brannon, Vasey, Dansky, & Kemper, 2007). However, these studies did not investigate the relationship between management practices and direct care worker outcomes. Brannon et al. (2005) found nursing facilities have more career ladder and peer mentoring programs than any other long-term care setting in their sample from Pennsylvania. When comparing direct care workers' thoughts about quitting among four long-term care settings: nursing facilities, assisted-living facilities, home care agencies, and adult day services, direct care workers in home care were the least likely to think about quitting compared to any other setting (Brannon et al., 2005).

More recently, significant differences in the use of direct care workers' participation in care planning, communication about tasks, and supervisor training were found among four long-term care settings (Stott et al., 2007). In this study, use of supervisor training was higher in home care compared to nursing and assisted-living facilities. Less communication about tasks was reported in home care agencies compared to any other setting, and greater use of participation in care planning was reported in adult day services compared to any other setting.

Several studies in this prior research section used organizational- and individual-level variables to investigate the effects of organizational factors on direct care workers' perceptions of their jobs and turnover in long-term care (Banaszak-Holl & Hines, 1996; Brannon et al., 2002; Friedman et al., 1999; Parsons et al., 2003). However, all of these studies use aggregated, individual-level data to measure organizational-level variables. Measuring organizational effects on individual outcomes by aggregating individual-level data up to the organizational-level creates estimated prediction coefficients with same-source bias (Fedor, Caldwell, & Herold, 2006). Using separate respondents for organizational and direct care worker-level measures would help to resolve this issue.

This dissertation provides several contributions to the existing literature by filling gaps in previous research and resolving same-source bias. Testing relationships between direct care worker organizational commitment and management practices will expand on the existing long-term care organizational literature, which is primarily descriptive. Further, investigating the impact of each type of setting on this relationship is a new contribution to this body of literature. Methodologically, the use of separate respondents for organizational and direct care worker-level data reduces same-source bias between the organizational-level predictor variables and the direct care worker-level outcome variables (Fedor et al., 2006).

CHAPTER 3

STUDY DESCRIPTION

This section explains the Better Jobs Better Care (BJBC) demonstration, research model (Figure 2), and hypotheses. The organizational and direct care worker-level variables used in the analysis are defined, and the relationships between these variables are developed and hypothesized. The types of long-term care settings are also defined, and the effects of these settings on the relationship between management practices and organizational commitment are hypothesized.

Better Jobs Better Care Demonstration

The sample of organizations and direct care workers was taken from the BJBC demonstration, which was a three-year project aimed at creating policy and practice changes to improve the retention of direct care workers in long-term care. Non-profit organizations representing broad coalitions were awarded grants for BJBC. These non-profit organizations serve as lead agencies for projects in Iowa, Oregon, Vermont, Pennsylvania, and North Carolina. The five state projects were free to implement policy initiatives most relevant to their respective state and practice interventions that were applicable for changing management practices at each participating organization. Lead agencies in each state used a different process of recruiting organizations to participate in the demonstration, ranging from requests for proposals from all organizations within the state to selection of organizations based on their history of participation in projects involving practice change initiatives.

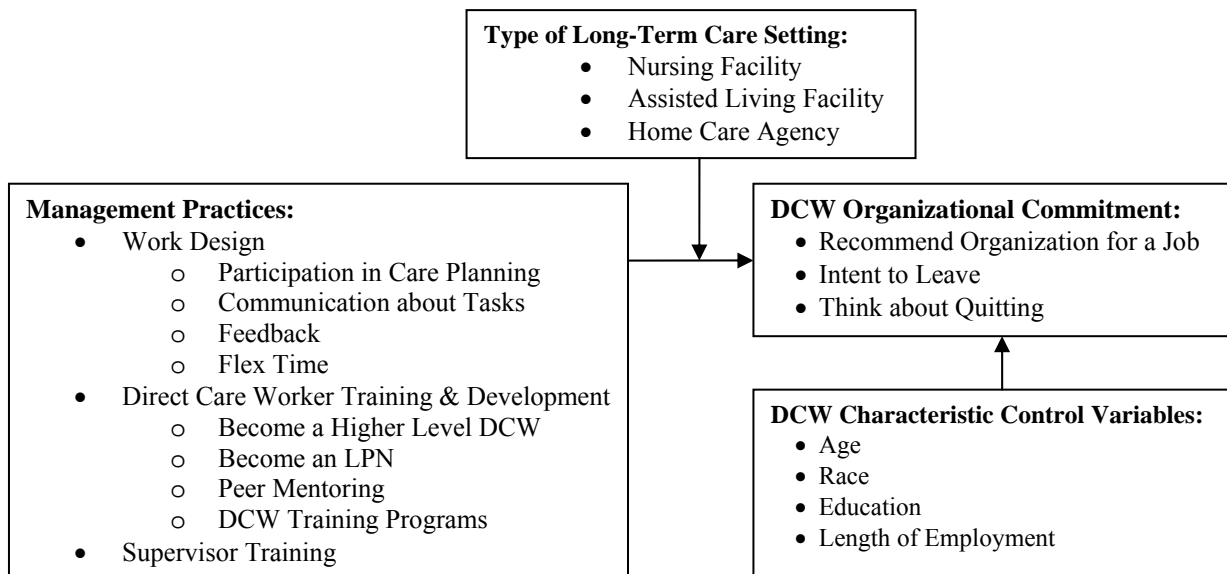
The Pennsylvania State University evaluated the BJBC demonstration. The research team assessed the implementation of policy and practice changes and analyzed the effects of management practice interventions provided by the demonstration on direct care worker job

perceptions and organizational practices. These interventions include team building seminars, the Paraprofessional Healthcare Institute’s (PHI) Coaching Supervision training (Paraprofessional Healthcare Institute, 2005), upper management seminars to promote buy-in for the project, direct care worker skill development programs, and peer mentoring training. In order to evaluate the effects of management practice interventions on these outcomes, baseline and follow-up survey data was collected.

Research Model and Hypotheses

The dissertation research model (Figure 2) for this study suggests that direct care worker organizational commitment is associated with work design, direct care worker training and development, and supervisor training after controlling personal characteristics.

Figure 2. Research Model



Work Design

For a direct care worker, work design practices include participation in care planning, feedback, communication about tasks with peers and supervisors, and flex time. All of these

factors are linked to positive job outcomes, such as higher organizational commitment and lower turnover in the health care industry (Banaszak-Holl & Hines, 1996; McEvoy & Cascio, 1985; Parsons et al., 2003; Trombetta & Rogers, 1986), and are used to measure work design in this dissertation. Based on this evidence, one would anticipate:

Hypothesis 1. Greater use of work design practices will be associated with higher levels of direct care worker organizational commitment.

Work design practices can also be differentially challenging to implement in the three types of long-term care settings due to the physical structure of the organization. As previously stated, nursing assistants, supervisors, and upper management are in one building or on one campus in nursing and assisted-living facilities. However, nursing facilities tend to be more complex, hierarchical organizations (Anderson, Corazzini, & McDaniel, 2004) than assisted-living facilities and home care agencies. To ensure information is shared among the hierarchical levels, processes for exchanging knowledge and instructions about care and job performance usually exist in this type of environment (Colón-Emeric, Ammarell, Bailey, Corazzini, Lekan-Rutledge, Piven, Utley-Smith, & Anderson, 2006). Consequently, one would expect that communication about tasks and feedback are used more in nursing facilities than assisted-living facilities. In contrast, home care aides work independently and have little or no contact with their supervisors or upper management because services are provided in the client's home. Therefore, one would anticipate that less use of communication about tasks and feedback practices are used in home care agencies compared to nursing and assisted-living facilities (Stott et al., 2007). Based on this evidence, one would hypothesize that:

Hypothesis 1a. In nursing facilities, greater use of communication about tasks and feedback will have a stronger positive relationship with organizational commitment compared to assisted-living facilities and home care agencies.

In terms of authority, home care agencies are typically more decentralized than nursing and assisted-living facilities. Decentralized authority occurs when employees are free to complete tasks without interruption by their supervisor (Hage & Aiken, 1967). Working independently with clients in their homes may allow home care aides to be more involved in care planning compared to nursing and assisted-living facilities. Although no studies were found comparing the relationship between participation in care planning and direct care worker organizational commitment among long-term care settings, one study of blue collar workers in the private bus industry found decentralized authority and participation in decision-making were related to a bus driver's organizational commitment (Brewer, 1996). Therefore, one would suspect that working at a home care agency may strengthen the relationship between use of participation in care planning and direct care workers' organizational commitment.

Direct care workers may also prefer flexible scheduling and daytime hours, which is commonplace in home care agencies. Nursing and assisted-living facilities require direct care staffing 24 hours a day, which includes evenings, holidays, and weekends. Scandura and Lankau (1997) found women and employees with family responsibilities reported higher levels of organizational commitment when flexible scheduling was offered. Considering a majority of direct care workers are women who are single mothers (Parsons et al., 2003), flexible scheduling may be an appealing work design feature. Therefore:

Hypothesis 1b. In home care agencies, greater use of participation in care planning and flex time will have a stronger positive relationship with organizational commitment compared to nursing and assisted-living facilities.

Direct Care Worker Training & Development

The direct care worker training and development practices included in this dissertation are career ladder opportunities to become a higher level direct care worker or Licensed Practical Nurse (LPN), peer mentoring programs, and formal training programs. The basic training requirements for direct care workers often varies across the three long-term care settings based on the regulations that govern each setting. Direct care workers in nursing facilities are usually known as certified nursing assistants (CNAs) (National Clearinghouse on the Direct Care Workforce, 2004). Due to the type of residents nursing facilities serve, this setting generally has the largest number of training regulations compared to assisted-living facilities and home care agencies.

As the life expectancy of the elderly population increases, direct care workers are attending to residents and clients with more complex health conditions. The basic training requirements for CNAs do not prepare them to handle these intricate cases, which can lead to a frustrating work experience (Curry, Porter, Michalski, & Gruman, 2000). This creates an environment where both mentorship and training for direct care workers will remain impromptu (Baldwin, Roberts, Fitzpatrick, While, & Cowan, 2003). Further, previous studies found that a lack of direct care worker training results in higher direct care worker turnover and intent to leave (Castle et al., 2007; Stone & Weiner, 2001). Offering training beyond the basic requirements may provide direct care workers with the necessary information and skills to

handle more involved cases and improve quality of care, which may increase their organizational commitment.

Career ladder programs create a stimulating and challenging environment by giving workers an opportunity to increase their skills and knowledge. If an employee does not show initial interest in training programs, opportunities for career advancement may motivate a person to learn and transfer new information (Noe, 1986). Previous studies also found retention of direct care workers increased after home care agencies offered three types of career advancement programs (Feldman, 1993) and after nursing facilities offered peer mentoring programs (Hegeman, 2005). Based on this evidence, one would anticipate that:

Hypothesis 2. Greater use of direct care worker training and development practices will be associated with higher levels of organizational commitment.

Direct care worker training and development practices are easier to implement in nursing and assisted-living facilities because employees are typically in one building or on one campus. This makes it easier for direct care workers to meet for training and to sustain mentoring programs compared to home care agencies. The hierarchical organizational structure of nursing facilities may create more career advancement opportunities compared to assisted-living facilities and home care agencies, which tend to be horizontal, or flat, organizations. Therefore:

Hypothesis 2a. In nursing facilities, greater use of direct care worker training and development practices will have a stronger positive relationship with organizational commitment compared to assisted-living facilities and home care agencies.

Supervisor Training

A supervisor influences an employee's work experience by providing informal and formal feedback on work behavior, controlling rewards and job security, and controlling the

structure, ambiguity, and conflict in the work itself (Krackhardt, McKenna, Porter, & Steers, 1981). Supervisors in the BJBC demonstration are defined as people who perform ongoing supervisory tasks for direct care workers. These tasks include, but are not limited to, providing disciplinary action, responding to job concerns of direct care workers, providing feedback about job performance, and ensuring that direct care workers are giving proper care to residents and clients. Most direct care worker supervisors are RNs or LPNs who typically do not receive training in supervising this workforce during their academic education (Anthony, Standing, & Hertz, 2001; Kleinman, & Saccomano, 2006). Therefore, employer training is the most convenient educational source for these supervisors to gain the knowledge and skills in understanding diversity or cultural issues, managing people, outlining disciplinary procedures, and communicating effectively with other employees and recipients of care. The use of supervisor training in these areas is measured in this dissertation.

Although no published studies have analyzed the relationship between supervisor training and direct care worker organizational commitment, supervisor training and practices are known to lead to lower turnover and higher organizational commitment in other industries (Krackhardt et al., 1981; Raabe & Beehr, 2003; van Vuuren, de Jong, & Seydel, 2007). Krackhardt et al. (1981) found lower bank teller turnover rates in organizations that implemented supervisor training programs in providing feedback and cross-training for tellers. In the telecommunications industry, quality of supervisor communication was related to organizational commitment (van Vuuren et al., 2007). Raabe and Beehr (2003) found subordinate respect for their supervisor's knowledge of and competence on the job was correlated to organizational commitment in an energy and technology company.

Only two empirical health care studies investigated the relationship between supervisory training and practices with direct care worker perceptions. The first study found direct care workers were more satisfied with supervisors who had more training (Ward, 2002). In the second study, supervisory practices were significantly associated with a direct care worker's role competence and job commitment (McKenzie, 2006). Based on this evidence, one would anticipate that:

Hypothesis 3. Greater use of supervisor training will be associated with higher levels of organizational commitment.

Nursing facilities serve more medically compromised residents than assisted-living facilities and home care agencies. Regulations governing nursing facilities require at least one RN supervisor to be on duty at all times (Harrington, Kovner, Mezey, Kayser-Jones, Burger, Mohler, Burke, & Zimmerman, 2000). Therefore, direct care worker in nursing facilities have more exposure to their supervisors and would likely experience more of the effects of supervisor training than the other two settings.

Regulations can also make nursing facilities more mechanistic than assisted-living and home care. Mechanistic structures are rigid and tight bureaucracies where communication follows a hierarchical channel, power is centralized, job descriptions and management styles are uniform, and decision-making is predominated by formal rules and regulations (Ambrose & Schminke, 2003). Conversely, organic organizations have flexible and decentralized systems where open communication channels and adaptability to aid in an employee accomplishing goals prevails over formal rules and regulations (Ambrose & Schminke, 2003). As previously stated, supervisors in nursing facilities are likely to be in one building. This makes it easier for nursing

facility supervisors to attend training programs and organizations to offer more programs compared to assisted-living facilities and home care agencies.

Administering disciplinary procedures is one of the responsibilities of a supervisor. Deciding whether to administer discipline requires supervisors to use procedural justice, where different criteria are used to judge the fairness of procedures in different contextual settings (Ambrose & Schminke, 2003). In a sample of organizations that included the health care industry, Ambrose and Schminke (2003) found a stronger relationship between procedural justice and positive perceptions of organizational support in mechanistic organizations compared to organic organizations. Further, previous research has found positive perceptions of organizational and supervisor support leads to higher levels of organizational commitment (Eisenberger, Huntington, Hutchison, & Sowa, 1986; Eisenberger, Stinglhamber, Vandenberghe, Sucharski, & Rhoades, 2002; Rhoades & Eisenberger, 2002). Based on this evidence, one would anticipate:

Hypothesis 3a. In nursing facilities, greater use of supervisor training will have a stronger positive relationship with organizational commitment compared to assisted-living facilities and home care agencies.

CHAPTER 4

METHODS

Research Design

Data from clinical managers and direct care workers employed at organizations who participated in the BJBC demonstration were analyzed in this dissertation. Cross-sectional and one-group pretest-posttest designs were used in this study. The cross-sectional design used baseline data to examine whether management practices were associated with direct care worker organizational commitment and the moderating effects of the type of long-term care setting on this relationship. Longitudinal data using a one-group pretest-posttest design assessed whether a relationship between change in management practices and changes in direct care worker commitment exists.

Using a one-group pretest-posttest design provides more evidence, or a pattern of data, than a cross-sectional design to interpret whether management practices associated with organizational commitment continue to be significant after the baseline observation (Shadish, Cook, & Campbell, 2002). For example, if baseline work design practices are positively associated with baseline organizational commitment, one would suspect an increase in work design practices would be related to an increase organizational commitment.

Data Sources

Two sources of primary data were used for this analysis. One source was from direct care workers who completed the Direct Care Worker Survey. Direct care workers within the organizations participating in BJBC were defined as individuals who provided hands-on personal care (e.g., assistance with bathing, dressing, transferring, and feeding) as significant parts of their jobs. LPNs, RNs, and workers who help with cleaning, meal preparation, and chores, but do not

provide personal care, were not included. The Direct Care Worker Survey measured the direct care worker characteristics, which served as control variables, and organizational commitment outcome variables.

The second source of data was from the clinical managers who completed the Clinical Manager Survey. The clinical manager was defined as the member of the management team in charge of clinical services and acted as a key informant on the practices and processes at the organization for the BJBC evaluation. The management practices and type of long-term care setting used in this analysis were measured by the Clinical Manager Survey.

Baseline surveys were administered to clinical managers and direct care workers when organizations enrolled in the demonstration. Follow-up surveys were administered to clinical managers and direct care workers who were currently employed at organizations that were still participating in the demonstration. The amount of time between the baseline and follow-up surveys ranged from 10 months to 2½ years. Panel data from direct care workers and clinical managers were merged to form the analytic dataset for this study.

Sample

The populations of interest are organizations and direct care workers in the long-term care industry. Each organization participating in BJBC was classified by the evaluation team into three categories: nursing facilities, assisted-living facilities, and home care agencies. Nursing facilities included a majority of Medicare-certified and a few non-certified facilities. The assisted-living category included organizations entitled assisted-living facilities, personal care homes, adult and family care homes, multi-unit assisted housing with services, and residential care facilities and homes (Han, Sirrocco, & Remsburg, 2003). Home care agencies include Medicare-certified and non-certified agencies.

Little's Missing Completely At Random (MCAR) tests were performed on direct care worker and clinical manager responses to determine the pattern of missing data. Non-significance, p -values > 0.05 , indicates missing values are MCAR, or randomly distributed across all observations, while significance suggests data are missing at random, or systematically missing (Garson, n.d.). The p -values for these tests were not significant, proving that missing values were randomly distributed. The preferred protocol for MCAR data is listwise deletion (Garson, n.d.).

Direct Care Workers

A total of 3,415 respondents completed the baseline survey and 2,505 respondents completed the follow-up survey. A panel of 1,338 direct care workers responded to both surveys and completed at least 25 percent of the survey. A nonresponse analysis comparing direct care workers who responded to only one survey to direct care workers in the panel showed the panel had significantly higher organizational commitment scores than non-panel respondents. However, the mean differences are small among the three variables ranging from 0.083 on a 4-point scale to 0.305 on a 3-point scale. Missing clinical manager panel data resulted in 296 direct care workers being dropped. Exclusion of 131 direct care workers with missing organizational commitment data left 911 direct care workers for the final analysis (Table 4.1). Techniques used to handle missing direct care worker characteristics are described in the cross-sectional measures section.

Table 4.1 Direct Care Workers by State and Type of Long-Term Care Setting

State	Type of Long-Term Care Setting			Total
	Nursing Facilities	Assisted Living	Home Care	
Oregon	37	13	15	65
Iowa	50	--	37	87
Pennsylvania	185	24	46	255
Vermont	2	5	93	100
North Carolina	91	56	257	404
Total	365	98	448	911

Clinical Managers

Elimination of one organization could result in exclusion of several direct care workers. In order to preserve the direct care worker sample size, management practice scales were included in the analysis if at least one item was completed. For example, the communication about tasks variable was measured by four items. If one of the four items was missing, then the communication about tasks variable would be created by averaging the values of the three items that had responses and the organization would be included in the analysis. If all four items were missing values, then the organization would not be included in the analysis. Four organizations had one missing value to an item used to create a management practice variable but had values for the remaining questions. Therefore, these organizations were included in the analysis.

Ninety-eight organizations had baseline and follow-up data. Missing direct care worker panel data eliminated six organizations from the analysis, and 16 clinical manager surveys were excluded due to missing data. Therefore, 76 organizations were included in the final analysis (Table 4.2).

Table 4.2 Type of Long-Term Care Setting by State

State	Type of Long-Term Care Setting			Total
	Nursing Facilities	Assisted Living	Home Care	
Oregon	4	4	1	9
Iowa	6	--	3	9
Pennsylvania	11	4	6	21
Vermont	1	1	2	4
North Carolina	9	11	13	33
Total	31	20	25	76

Surveys

The survey administration was approved by the International Review Board (IRB) prior to the evaluation of the BJBC. At the beginning of the demonstration, each state project established which management practices needed improvement. Then interventions were chosen to change these practices. In order to measure change, the BJBC evaluation team needed to collect baseline data prior to knowing what management practices the states planned to target for change. Therefore, the Clinical Manager and Direct Care Worker surveys measured a broad array of management practices and direct care worker outcomes. Tables 4.3-4.6 contain the survey questions used in this analysis. Appendix A contains the Clinical Manager Survey and Appendix B contains the Direct Care Worker Survey.

Clinical Manager Survey

The Clinical Manager Survey contains 104 items measuring organizational characteristics and use of various management practices for direct care workers and their supervisors. The baseline survey was available to 142 participating organizations through the Internet. A website address was sent to each organization, and a confidential identification number was sent via a pre-notification letter to the clinical manager at each organization. In cases where organizations did not have access to the Internet or upon the organization's request, paper-and-pencil surveys

were mailed with self-addressed, stamped envelopes. Respondents were informed by a cover letter about the nature and purpose of the study. Reminder e-mails and calls were made to the participating organizations requesting that the survey be completed. The clinical manager's consent was obtained at the beginning of the survey. Although a different baseline and follow-up Clinical Manager Survey were used in the BJBC evaluation, the wording for the questions used in this analysis was the same in both surveys. A panel of 98 respondents completed both waves of the Clinical Manager Survey. Based on the number of respondents in the panel divided by the 142 organizations surveyed at baseline, the response rate is 69 percent.

Direct Care Worker Survey

The Direct Care Worker Survey is an 86-item, self-administered paper survey measuring perceptions of job and work systems characteristics, as well as demographic characteristics of direct care workers. The sampling frame for the Direct Care Worker Survey was generated from the Management Information System (MIS), which was developed to track direct care worker human resources data for each of the organizations in the BJBC demonstration. After the list of current employees was drawn from the MIS, personalized survey packets, which included a cover letter describing the nature and purpose of the study, an informed consent form, the survey, a financial incentive of \$2 dollars, and a business reply envelope, were sent to the organization. The response rate of 39 percent is based on 1,338 direct care workers in the panel divided by the 3,415 respondents to the baseline survey.

Measures

This section describes the cross-sectional and longitudinal measures used to assess the relationship between management practices and organizational commitment. The cross-sectional

measures are from the baseline surveys. The longitudinal measures use the baseline and follow-up survey data for the one group pretest-posttest study design.

Cross-sectional Measures

Organizational Commitment

According to Angle and Perry (1981), the Organizational Commitment Questionnaire (OCQ) by Porter, Steers, Mowday, and Boulian (1974) has two subscales, value commitment and commitment to stay. Although the OCQ was not used in this study due to the variety of direct care worker measures needed to capture all the effects of BJBCs, the three outcome variables from the Direct Care Worker Survey measuring a direct care worker’s recommendation of the organization for a job, intent to leave, and thoughts about quitting (Table 4.3) are comparable to the OCQ subscales.

Table 4.3 Direct Care Worker Organizational Commitment Items

Recommend Organization for a Job:
If a friend or family member asked your advice about taking a direct care worker job at the place where you work, would you... ¹
Intent to Leave:
How likely is it that you will leave this job in the next year ² ?
Think about Quitting:
How often do you think about quitting ³ ?

¹ Note: Response range: 0 = Definitely not recommend it, 1 = Probably not recommend it, 2 = Probably recommend it, 3 = Definitely recommend it

² Note: Response range: 0 = Not at all likely, 1 = Somewhat likely, 2 = Very likely

³ Note: Response range: 0 = Never, 1 = Rarely, 2 = Some of the time, 3 = All of the time

For example, recommending the organization as a place to work, or “recommend organization for a job,” is similar to the measures in the OCQ’s value commitment subscale, which implies an employee’s attachment is based on a positive regard for the organization (Angle & Perry, 1981). Responses that are synonymous to the OCQ’s commitment to stay subscale questions, which

connote the attitudes toward the existing organizational membership (Angle & Perry, 1981), are “never” thinks about quitting and “not at all likely” to leave the job in the next year.

Management Practices

Organizations that focus on improving management practices in the areas of work design and staff training and development, plant seeds of information for employees to process by providing the necessary support to perform a job through training and communication networks and creating opportunities for career advancement. Eventually, these seeds may grow into affective commitment to the organization. Therefore, greater use of work design, direct care worker training and development, and supervisor training practices are likely predictors of greater organizational commitment.

In order to improve the efficiency of the analysis, some Clinical Manager Survey items were combined into scales based on several BJBC evaluation team meetings to decide which questions should logically be grouped. Each scale was tested empirically using a Cronbach’s alpha to assess internal consistency (Cortina, 1993). A cutoff of 0.60 was used in this analysis to determine if groupings could be maintained. All scales were above this cutoff. Tables 4.4-4.6 contain the Cronbach’s alphas and the items used for the management practice scales.

Work Design

In work design studies, independent examiners and the workers themselves typically assess work design at organizations. The large number and widespread locations of organizations that participated in BJBC made it difficult to accomplish this for the entire sample. Therefore, the work design information was obtained from the clinical manager, who served as a key informant for this data. The work design measure contains three scales and one item (Table 4.4).

Table 4.4 Work Design Item and Scales

Participation in care planning: ($\alpha = 0.71$)
“How often do direct care workers...?”
have input into changes in patient/resident/client care plans?
actively participate in developing patient/resident/client care plans?
Communication about tasks: ($\alpha = 0.70$)
“How often do direct care workers...?”
communicate in writing with other direct care workers to relay information about residents/patients/clients?
communicate verbally with other direct care workers to relay information about residents/patients/clients?
communicate information either in writing or verbally about residents/patients/clients by reporting to their supervisors?
meet formally or informally with a supervisor to discuss patient/resident/client care issues?
Feedback: ($\alpha = 0.66$)
“How often do direct care workers...?”
receive verbal feedback about their everyday job performance?
receive written feedback about their everyday job performance?
Flex Time*:
“How often are the following management practices used for direct care workers in your organization?”
Flex Time for direct care workers.

Note: Response range: 0 = Never, 1 = Seldom, 2 = Occasionally, 3 = Frequently, 4 = Always

*Individual item, not a scale

The three scales are participation in care planning, communication about tasks, and feedback. The first scale, participation in care planning, contains two questions related to direct care workers having input or participating in care plans. The second scale is communication about tasks. For direct care workers, communication includes written or verbal communication with other direct care workers and their supervisors about resident or client care. The third scale, feedback, contains two questions pertaining to the amount of written and verbal feedback direct care workers receive about their everyday job performance. The single item, flex time, measures how often flexible scheduling is used for direct care workers in their organizations.

Scale scores were created by computing a single average score for each organization using all the items in each scale. For example, in Table 4.4, the average of the responses for the two items measuring participation in care planning was used to create one variable. Each organization also has a work design variable, which was computed by taking the mean of the three scales and the flex time response. The work design measures, as well as its parts (participation in care planning, communication about tasks, feedback, and flex time) were used to test the hypotheses.

Direct Care Worker Training & Development

Originally, the direct care worker training and development questions measured percentage ranges of staff engagement in each type of program (Table 4.5).

Table 4.5 Direct Care Worker Training & Development Items and Scales

Career Advancement Opportunities*:
“What percentage of direct care workers currently...?”
participate in a career ladder program for the direct care worker to advance to a higher level of direct care worker (for example, team leader or dementia care specialist)?
participate in a career ladder program for the direct care worker to become a Licensed Practical Nurse ?
have a designated peer mentor ?
Direct Care Worker Training Programs: ($\alpha = 0.72$)
Approximately what percentage of direct care workers participate in formal inservice programs beyond those required for certification?
“During the past year, approximately what percentage of direct care workers have...?”
completed a self-directed educational video or computer-based training program while at work?
attended a conference or workshop away from work?
“During the past year, what percentage of direct care workers received any formal training (inservice, workshop, etc.) on ...?”
communicating effectively with other employees ² ?
communicating effectively with patients/residents/clients ² ?
diversity or cultural issues ² ?

Note: Response range: 0 = None, 1 = 1-25%, 2 = 26-50%, 3 = 51-75%, 4 = 76-100%

*Individual items, not scales

The response categories for these questions did not represent an equal distribution. Therefore, the items were dichotomously coded indicating no or at least 1 percent of staff participating in the program for this study. Participation in peer mentoring programs, programs to become a higher level direct care worker, and programs to become LPN at the time of the survey were represented by three dichotomous variables, which indicated at least 1 percent of direct care worker staff participated in each program.

The direct care worker training count variable was created by adding the number of formal inservice programs at the time of the survey and conferences, workshops, and training programs used by direct care workers in the past year. Hence, the maximum number of programs an organization could have for this variable was six and a minimum of zero.

Supervisor Training

The supervisor training variable measured the number of formal training programs used in the past year by supervisors in five areas: diversity, disciplinary procedures, managing people, and effective communication with other employees and clients (Table 4.6).

Table 4.6 Supervisor Training

Supervisor Training Programs: ($\alpha = 0.89$)
“During the past year, what percentage of direct care worker supervisors received any formal training (inservice, workshop, etc.) on ...?”
communicating effectively with other employees?
communicating effectively with patients/residents/clients?
diversity or cultural issues?
effective disciplinary procedures?
skills for managing people?

Note: Response range: 0 = None, 1 = 1-25%, 2 = 26-50%, 3 = 51-75%, 4 = 76-100%

A supervisor training count variable for each organization was created adding the number of programs that had at least 1 percent participation of supervisors. The maximum number of programs an organization could have for this variable was five and a minimum of zero.

Type of Long-Term Care Setting

Three dichotomously coded variables were used to indicate the type of long-term care setting. These indicator variables were used to test the moderating effect of the type of long-term care setting on the relationship between management practices and organizational commitment.

Interaction Terms

New work design, direct care worker training, and supervisor training variables were created for each organization to calculate interaction terms for this analysis. This was accomplished in two steps. First, the median for each management practice was calculated. Then, dichotomous variables were created, which indicated whether the organization had a score greater than or equal to the median. This protocol was used to create dichotomously coded variables for participation in care planning, communication about tasks, feedback, flex time, direct care worker training, and supervisor training. Becoming a higher level direct care worker, becoming an LPN, and peer mentoring were already dichotomously coded into no or at least 1 percent direct care worker participation in these programs. Therefore, new management practice variables were not needed for these measures.

Interaction terms were created by multiplying two dichotomous variables: the type of long-term care setting and management practice of interest. For example, to test the hypothesis that greater use of communication about tasks and feedback has a stronger relationship with organizational commitment in nursing facilities compared to assisted-living facilities and home care agencies, the dichotomous nursing facility variable was multiplied by the newly created dichotomous communication about tasks variable. Likewise, another product variable was

computed using the dichotomously coded feedback and nursing facility variables to test the other half of this hypothesis.

Direct Care Worker Characteristics

Direct care worker characteristics such as race, age, education level, and length of employment have been found to influence job outcomes in long-term care (Parsons et al., 2003; Sikorska-Simmons, 2005). Data on these characteristics were measured in the Direct Care Worker Survey. A direct care worker's race and education level were represented by two dichotomous variables. The race variable indicated whether a direct care worker was white. The education variable indicated that a direct care worker had some college education or completed his or her college education.

Three dichotomous age variables were created based on the baseline responses to the Direct Care Worker Survey. The first variable indicated the direct care worker was less than or equal to 34 years of age. The second variable indicated the direct care worker was between 35 and 55 years of age. The third variable indicated the direct care worker was greater than or equal to 55 years of age when the baseline survey was completed.

Originally, the Direct Care Worker Survey asked how many years and months he or she has worked as a direct care worker for the organization. This response was recalculated into years. Therefore, length of employment was a continuous measure.

Longitudinal Measures

The creation of difference scores for the organizational commitment, management practices, and four direct care worker characteristics variables is described below. The type of long-term care setting and a direct care worker's race did not change for the analytic sample.

Therefore, the baseline measures of these areas were used in the both the cross-sectional and longitudinal analyses.

Organizational Commitment

Difference scores were calculated by subtracting the baseline responses from the follow-up responses to survey questions about a direct care worker's recommendation of the organization for a job, intent to leave, and thoughts about quitting. For example, each direct care worker's baseline response for recommending the organization for a job was subtracted from the follow-up response. A positive difference score suggested a direct care worker was more likely to recommend the organization for a job during the follow-up survey than at baseline, while a negative score implied he or she is less likely to recommend the organization for a job at follow-up compared to baseline.

Management Practices

Work Design

Difference scores were also created to measure an overall change in work design and a change in the four components of work design. Each organization's baseline score for the overall work design measure was subtracted from the follow-up score. A positive difference score reflected an increase in work design practices, and a negative score suggested a decrease in these practices at the organization. This procedure was repeated for participation in care planning, communication about tasks, and feedback. The flex time change variable was calculated by subtracting the baseline response from the follow-up response.

Direct Care Worker Training and Development

Three career advancement difference scores were created by subtracting the dichotomous baseline value from the dichotomous follow-up value. Possible scores for these variables were:

-1, which indicated a decrease in participation; zero, which implied no change in participation; and 1, which suggested an increase in participation. Direct care worker training difference scores were formulated by subtracting the count at baseline from the count at follow-up. Extreme values for the direct care worker training change variable ranged from -6 to 6, where a -6 represented an organization had participation in all of the programs at baseline but no participation at follow-up. Conversely, a 6 suggested an organization had no participation in any programs at baseline, but staff participated in all of the programs at follow-up.

Supervisor Training

Similar to the direct care worker training longitudinal measure, a supervisor training difference score was created by subtracting the baseline count from the follow-up count. Extreme values ranged from -5 to 5, where a -5 indicated an organization had participation in all of the programs at baseline but no participation at follow-up, and a 5 suggested an organization had no participation in any programs at baseline; however, staff participated in all of the programs at follow-up.

Direct Care Worker Characteristics

A dichotomous variable representing a change in a direct care worker's education was created by subtracting the dichotomous baseline value from the dichotomous follow-up value, where a 1 indicated a direct care worker changed from having less than or equal to a high school education to some or completed college. A zero indicated no change in education level. Two dichotomous variables were also created to signify a change in age category. The first dichotomous age variable, younger to middle-aged, indicated a change in age from the less than or equal to 34 years of age (or younger) category to the 35-55 years of age (or middle-aged) category. The second dichotomous age variable, middle-aged to older, indicated a change in age

from the 35-55 years of age (or middle-age), category to the greater than or equal to 55 years of age (or older) category.

Unfortunately, difference scores could not be created from direct care workers' baseline and follow-up responses to the question pertaining to the amount of time they worked at the organization due to a large number of extreme values, which even included negative values. Therefore, a difference score measuring the change in a direct care worker's years of employment at the organization was calculated by subtracting the time stamp of the baseline survey from the time stamp of the follow-up survey. If the time stamp was missing for a direct care worker, the median Direct Care Worker Survey time stamp for the worker's organization was used.

Analysis Plan

The organizational commitment outcome variables included in this analysis were cross-sectional and longitudinal measures of a direct care worker's recommendation of the organization for a job, intent to leave, and thoughts about quitting. The management practice predictor variables were cross-sectional and longitudinal measures of work design, participation in care planning, communication about task, feedback, flex time, opportunities to become a higher level direct care worker, opportunities to become an LPN, peer mentoring, direct care worker training, and supervisor training.

Dynamic factors, or characteristics that changed over time, included a direct care worker's age, education, and length of employment. Baseline and difference scores for these characteristics were used as control variables in the cross-sectional and longitudinal analyses respectively. Static factors, or characteristics that did not change over time, included a direct care worker's race. Race was included as a control variable in cross-sectional and longitudinal

analyses. The type of long-term care setting was hypothesized to moderate the relationship between management practices and organizational commitment. These variables remained static throughout the analysis.

Intraclass Correlation Coefficients (ICCs) were calculated to determine the degree of similarity among the direct care worker outcome variables within organizations and if multilevel analysis was necessary. This was estimated by dividing the between-organization variance by the sum of the within and between-organization variance. If this value is greater than 0.10, then two-level analysis is required (Wan, 2002). The ICCs for all of the direct care worker outcome variables were less than 0.10, which implied that less than 10 percent of the variation in the dependent variable was between organizations. Therefore, hierarchical linear modeling would not improve the analysis.

Cross-sectional Analysis

To investigate the relationship between ten management practices and organizational commitment, while controlling for direct care worker characteristics and the type of long-term care setting, generalized linear modeling with robust estimation was used in equation one. Each of the three direct care worker outcome variables: recommend the organization for a job, intent to leave, and thoughts about quitting, were tested separately in the model.

Since direct care workers are clustered in organizations, Huber-White estimation was used to adjust for the lack of independence of the direct care worker observations. To avoid multicollinearity, the analyses in this study included only one management practice in the equation. Therefore, a different management practice variable was substituted into equation one until all ten management practice variables were analyzed.

$$[\text{Eq. 1}] \xi = B_0 + B_0 + B_1 (\text{Younger}) + B_2 (\text{Middle-aged}) + B_3 (\text{Race}) + B_4 (\text{Education}) + B_5 (\text{Length of Employment}) + B_6 (\text{Nursing Facility}) + B_7 (\text{Assisted Living}) + B_8 (\text{Management Practice}) + e$$

Where:

ξ = Organizational commitment outcome variable

B_0 = Mean of the organizational commitment outcome variable

B_1 = Effect of being in the younger age category (≤ 34 years old = 1, Not ≤ 34 years old = 0) on the organizational commitment outcome variable

B_2 = Effect of being in the middle-aged category (35-55 years old = 1, Not 35-55 years old = 0) on the organizational commitment outcome variable

B_3 = Effect of race (White = 1, Not White = 0) on the organizational commitment outcome variable

B_4 = Effect of education (Some or completed college = 1, Less than or equal to high school = 0) on the organizational commitment outcome variable

B_5 = Effect of length of employment on the organizational commitment outcome variable

B_6 = Effect of being a nursing facility (nursing facility = 1, assisted-living facility or home care = 0) on the organizational commitment outcome variable

B_7 = Effect of being an assisted-living facility (assisted-living facility = 1, nursing facility or home care = 0) on the organizational commitment outcome variable

B_8 = Effect of a management practice on the organizational commitment outcome variable

Analysis of the Moderating Effects of the Type of Long-Term Care Setting on the Relationship between Management Practices and Organizational Commitment

To test the moderating effects of the type of long-term care setting on the relationship between management practices and organizational commitment, interaction terms were added to model. Again, each interaction term was substituted into the model individually to avoid multicollinearity in equation two.

$$[\text{Eq. 2}] \xi = B_0 + B_1 (\text{Younger}) + B_2 (\text{Middle-aged}) + B_3 (\text{Race}) + B_4 (\text{Education}) + B_5 (\text{Length of Employment}) + B_6 (\text{LTC Setting}) + B_7 (\text{Management Practice}) + B_8 (\text{LTC Setting} * \text{Dichotomous Median Management Practice}) + e$$

Where:

ξ = Organizational commitment outcome variable

B_0 = Mean of the organizational commitment outcome variable

B_1 = Effect of being in the younger age category (≤ 34 years old = 1, Not ≤ 34 years old = 0) on the organizational commitment outcome variable

B_2 = Effect of being in the middle-aged category (35-55 years old = 1, Not 35-55 years old = 0) on the organizational commitment outcome variable

- B₃ = Effect of race (White = 1, Not White = 0) on the organizational commitment outcome variable
- B₄ = Effect of education (Some or completed college = 1, Less than or equal to high school = 0) on the organizational commitment outcome variable
- B₅ = Effect of length of employment on the organizational commitment outcome variable
- B₆ = Effect of the long-term care setting of interest (either nursing facility or home care), if the management practice of interest is zero, on the organizational commitment outcome variable
- B₇ = Effect of the management practice, if the long term care setting of interest is zero, on the organizational commitment outcome variable
- B₈ = Effect of the interaction term (dichotomously coded long-term care setting of interest*dichotomously coded management practice) on the organizational commitment outcome variable

Longitudinal Analysis

To test whether a change in management practices changed organizational commitment, while controlling for changes in direct care worker characteristics and the type of long-term care setting, the study used generalized linear modeling with Huber-White estimation in equation three.

$$[\text{Eq. 3}] \Omega = B_0 + B_1 (\Delta \text{from young to middle-aged}) + B_2 (\Delta \text{from middle-aged to older}) + B_3 (\text{Race}) + B_4 (\Delta \text{Education}) + B_5 (\Delta \text{in length of employment}) + B_6 (\text{Nursing facility}) + B_7 (\text{Assisted Living}) + B_8 (\Delta \text{in management practice}) + e$$

Where:

- Ω = Change in the organizational commitment outcome variable
- B₀ = Grand mean of the change in the organizational commitment outcome variable
- B₁ = Effect of a change from the younger age category to the middle-aged category on the change in organizational commitment outcome variable
- B₂ = Effect of a change from the middle-aged to the older category on the change in the organizational commitment outcome variable
- B₃ = Effect of race (White = 1, Not White = 0) on the change in the organizational commitment outcome variable
- B₄ = Effect of a change in education from less than or equal to high school to some college on the change in the organizational commitment outcome variable
- B₅ = Effect of a change in length of employment on the change in the organizational commitment outcome variable
- B₆ = Effect of being a nursing facility (nursing facility = 1, assisted-living facility or home care = 0) on the change in the organizational commitment outcome variable
- B₇ = Effect of being an assisted-living facility (assisted-living facility = 1, nursing facility

or home care = 0) on the change in the organizational commitment outcome variable

B_8 = Effect of a change in the management practice on the change in the organizational commitment outcome variable

CHAPTER 5

RESULTS

Chapter 5 contains the results of the analyses based on the research model (Figure 2). The cross-sectional results are presented first followed by the longitudinal results. In the cross-sectional analysis, greater use of feedback, supervisor training, and portions of direct care worker training and development are related to components of organizational commitment. Being a nursing facility also moderates the relationship between organizational commitment and direct care worker training and development. However, including interactions between the type of long-term care setting and management practices marginally improved the models. The only consistent relationship in the cross-sectional and longitudinal analyses is the association of supervisor training with direct care workers recommending the organization for a job. A p-value of less than or equal to 0.10 is used as a cut-off for significance in this study. Table 5.1 summarizes the support for each hypothesis in this study based on the cross-sectional and longitudinal findings.

Table 5.1 Support for Hypotheses based on Cross-sectional and Longitudinal Results

Hypotheses	Cross-sectional	Longitudinal
1. Greater use of work design practices will be associated with higher levels of direct care worker organizational commitment.	PS ^{r,t}	NS
1a. In nursing facilities, greater use of communication about tasks and feedback will have a stronger positive relationship with organizational commitment compared to assisted-living facilities and home care agencies.	NS	--
1b. In home care agencies, greater use of participation in care planning and flex time will have a stronger positive relationship with organizational commitment compared to nursing and assisted-living facilities.	NS	--
2. Greater use of direct care worker training and development practices will be associated with higher levels of organizational commitment.	PS ^r ,S ^t	PS ^{r,t}
2a. In nursing facilities, greater use of direct care worker training and development practices will have a stronger positive relationship with organizational commitment compared to assisted-living facilities and home care agencies.	PS ^r	--
3. Greater use of supervisor training will be associated with higher levels of organizational commitment.	S ^{r,i}	S ^{r,t}
3a. In nursing facilities, greater use of supervisor training will have a stronger positive relationship with organizational commitment compared to assisted-living facilities and home care agencies.	NS	--

Note: S=Supports hypothesis, PS=Partial Support (at least one of the management practice variables is positively related to an organizational commitment variable noted as a superscript), NS=No support (none of the management practice variables is positively related to any of the organizational commitment variables). Superscripts r=Recommend organization for a job, i=Intent to leave, t=Thinking about quitting.

Cross-sectional Results

The results presented in this section are from the baseline analysis testing the relationship between management practices and direct care worker organizational commitment. Descriptive statistics and regression results for the variables used in this analysis are described below.

Descriptives

Table 5.2 shows the descriptive statistics for the baseline variables in this dissertation. Variable ranges, means, and standard deviations are included in the table.

Table 5.2 Sample Descriptive Cross-sectional Data

Description	Minimum	Maximum	Mean	S.D.
<i>Direct Care Workers (DCWs) (n=911)</i>				
<i>Organizational Commitment</i>				
Recommends organization for a job	0	3	2.33	0.769
Intent to leave	0	2	0.36	0.585
Think about quitting	0	3	1.14	0.883
<i>Direct Care Worker Characteristics</i>				
<i>Age</i>				
Younger (Less than 35 years old=1)	0	1	0.172	0.378
Middle-aged (35-55 years old=1)	0	1	0.570	0.495
Older (Greater than 55=1)	0	1	0.258	0.438
Race (White=1)	0	1	0.710	0.453
Education (Some or completed college=1)	0	1	0.434	0.496
Number of years as a direct care worker for this employer	0.17	40	7.923	6.318
<i>Organizational-Level (n=76)</i>				
<i>Management Practices</i>				
Work design	1.44	4	2.586	0.557
Participation in care planning scale	1	4	2.717	0.732
Communication about tasks scale	1.75	4	2.913	0.644
Feedback scale	1	4	2.263	0.645
Flex time	0	4	1.671	1.380
Do you currently use a career ladder program to become a higher-level direct care worker?	0	1	0.566	0.499
Do you currently use a career ladder program to become a Licensed Practical Nurse?	0	1	0.368	0.486
Do you currently use peer mentors?	0	1	0.553	0.501
Number of direct care worker training programs	1	6	4.671	1.437
Number of supervisor training programs	0	5	4.040	1.645

Organizational Commitment

Based on the three variables used in this dissertation, on average, direct care workers report high levels of organizational commitment. The mean of the variable, recommending the organization for a job, is 2.33, indicating that direct care workers would “probably” to “definitely” recommend the organization for a job to a friend or family member. Direct care

workers, on average, are “not at all likely” to “somewhat likely” to leave their job in the next year based on the mean of the variable, intent to leave (0.36). The mean for the variable, thinking about quitting, is 1.14, which implies direct care workers think about quitting “rarely” to “some of the time.”

Control Variables: Direct Care Worker Characteristics

A majority of direct care workers in the analytic sample, 57%, are between 35 and 55 years of age. More than 70% of direct care workers are white, and 43% have completed at least some college. A considerable amount of variation exists in the number of years respondents have worked for their organization as direct care workers, ranging from a minimum of 0.17 years, or 2 months, to a maximum of 40 years. Of the 911 direct care workers in the analytic sample, nine direct care workers report being at their organization for greater than or equal to 30 years. Of the nine, eight are in the older age category and one, who reports 30 years of service, is in the middle-aged category.

Although 40 years of service seems unlikely, it is not impossible for the eight direct care workers to have started working in this field at 18 years of age and still work as a direct care worker at 58 years of age. Even for the one direct care worker who reports 30 years of service, there are two extreme, but reasonable, scenarios. The first is that the respondent is 55 years of age and started in this field at 25 years of age. The second is that the respondent started working as a direct care worker at 18 years of age and still work in this field at 48 years of age.

Management Practices

A total of five variables, measuring work design practices, are used in this analysis: participation in care planning, communication about tasks, feedback, flex time, and the overall measure of work design. The average use of all work design practices, with the exception of flex

time, is between “occasionally” and “frequently.” Flex time is generally used “seldom” to “occasionally.” As previously stated in Chapter 3, nursing facilities tend to be more mechanistic organizations because they provide 24-hour care seven days a week to residents with more severe ailments than assisted-living facilities and home care agencies. To provide 24-hour care, nursing facilities typically have at least three team shifts, which creates difficulty in allowing flexible scheduling compared to the other two settings. Since most of the organizations in this sample (41%) are nursing facilities, one expects to find lower overall use of flex time.

In general, most organizations included in the analysis have direct care workers participating in training and development programs. Over half of the organizations have direct care workers participating in peer mentoring programs (55%) and career ladder programs to become a higher level direct care worker (57%). However, only 37% have direct care workers participating in career ladder programs to become LPNs. Nursing facilities typically utilize more LPNs than assisted-living facilities and home care agencies. If the nursing facility is small, RNs are more likely to be used than LPNs in order to adhere to Medicare regulations (Harrington et al., 2000). Therefore, lower participation in LPN programs compared to other practices is not surprising. Based on the range for the direct care worker training count variable, each organization in the analytic sample has direct care worker participating in at least one out of six programs. The average number of direct care worker training programs (4.67) suggests most of the surveyed areas of training are used by organizations.

The supervisor training count variable includes five types of surveyed programs areas. The mean number of supervisor training programs is 4.04, suggesting four out of five surveyed areas of training are used by organizations on average. Only one organization has no participation in any of the surveyed areas.

Regression Analysis

Tables 1-30 in Appendix C contain the full generalized linear modeling results from testing the relationship between baseline management practices and organizational commitment, controlling for direct care worker organizational characteristics and the type of long-term care setting. The effects of ten management practices on three organizational commitment variables are tested in this study. For all 30 analyses, the likelihood chi-square ratio is significant, which implies the analytic model is different than the null model. Table 5.3 summarizes the significant negative and positive effects of management practices on the three organizational commitment variables.

Table 5.3 Effects of Management Practices and the Type of Long-Term Care Setting on Organizational Commitment

Management practices	Organizational Commitment		
	Recommend Organization for a Job	Intent to Leave	Think about Quitting
Work design			
Participation in care planning			
Communication about tasks			
Feedback	√*		-√***
Flex time			
Higher level direct care worker	√*		
Licensed practical nurse			√**
Peer mentor			
Direct care worker training		-√**	
Supervisor training	√*	-√*	

Note: Check mark indicates management practice is significant

*p ≤ 0.10, ** p ≤ 0.05, ***p ≤ 0.01, **** p ≤ 0.001

Feedback is the only component of work design linked with two of the three organizational commitment variables (Table 5.3). Therefore, findings only partially support hypothesis 1, which proposes that greater use of work design practices will be associated with higher levels of direct care worker organizational commitment (Table 5.1). Greater use of

feedback is associated with direct care workers' recommending the organization for care ($B=0.085$, $Wald \chi^2=3.081$, $p=0.0792$) and thinking about quitting less often ($B=-0.139$, $Wald \chi^2=7.243$, $p=0.0071$). This finding is supported by van Vuuren and colleagues (2007), who show that feedback is the most important part of manager and employee communication when predicting organizational commitment.

All of the direct care worker training and development practices, except peer mentoring, are linked with at least one of the three organizational commitment variables (Table 5.3). This partially supports hypothesis 2, which suggests that greater use of direct care worker training and development practices will be associated with higher levels of organizational commitment (Table 5.1). Participation in career ladder programs to become a higher level direct care worker is related to direct care workers recommending the organization for a job ($B=0.084$, $Wald \chi^2=2.757$, $p=0.0968$). This finding is supported by Feldman (1993), who reports increased retention when career advancement programs are offered in home care agencies. The participation of direct care workers in a greater number of training programs in the previous year and at the time of the survey is linked with direct care workers being less likely to leave in the next year ($B=-0.028$, $Wald \chi^2=5.765$, $p=0.0163$). This result is similar to Castle and colleagues' (2007) findings that lack of direct care worker training is associated with direct care workers being more likely to leave.

Participation in career ladder programs to become an LPN is related to thinking about quitting more often ($B=0.151$, $Wald \chi^2=4.291$, $p=0.0383$), which does not support hypothesis 2. At first, this finding may seem surprising. However, completion of a higher degree will likely lead to other employment opportunities outside the organization. Interactions with other students

during classes and clinical training may also expose direct care workers to employment prospects in other organizations, which may be the reason they are thinking about quitting more often.

Direct care worker supervisors participating in a greater number of supervisor training programs is related to two organizational commitment measures (Table 5.3). These findings support hypothesis 3, which proposes that greater use of supervisor training will be associated with higher levels of organizational commitment (Table 5.1). Supervisor training is associated with direct care workers being less likely to leave in the next year ($B=-0.021$, $Wald \chi^2=3.254$, $p=0.0712$) and more likely to recommend the organization for a job ($B=0.029$, $Wald \chi^2=3.393$, $p=0.0655$).

Moderating Effects of the Type of Long-Term Care Setting on the Relationship between Management Practices and Organizational Commitment

Tables 31-57 in Appendix C contain the full generalized linear modeling results testing the moderating effects of the type of long-term care setting on the relationship between management practices and organizational commitment, while controlling for direct care worker characteristics. Table 5.4 is a summary table presenting the significant effects from this analysis.

Table 5.4 Moderating Effects of the Type of Long-Term Care Setting on the Relationship between Management Practices and Organizational Commitment Controlling for Direct Care Worker Characteristics

Interaction Terms (Type of Long-Term Care Setting* Management Practice)	Organizational Commitment		
	Recommend Organization for a Job	Intent to Leave	Think about Quitting
Nursing facility*Communication about tasks			
Nursing facility*Feedback	-√**		
Home Care*Participation in care planning			
Home Care*Flex time			
Nursing facility*Higher level direct care worker			-√*
Nursing facility*Licensed practical nurse	√*		-√**
Nursing facility*Peer mentor			-√**
Nursing facility*Direct care worker training		-√***	-√*
Nursing facility*Supervisor training			

*p ≤ 0.10, ** p ≤ 0.05, ***p ≤ 0.01, **** p ≤ 0.001

Among the three types of long-term care settings used in this analysis, only being a nursing facility significantly moderates the relationship between some management practices and components of organizational commitment. However, the maximum decrease in the Akaike's Information Criterion (AIC) is 3, which shows little improvement between the main effect models and interaction models. Therefore, including interaction terms does little to improve the fit of the model, and these results should not be considered extraordinary.

Surprisingly, for nursing facilities, greater use of feedback is associated with direct care workers being less likely to recommend the organization for a job ($B=-0.222$, $Wald \chi^2=4.759$, $p=0.0292$) (Table 5.4). Additionally, greater use of communication about tasks in nursing facilities is not related to any of the organizational commitment variables. Therefore, these findings do not support hypothesis 1a, which states that greater use of communication about

tasks and feedback will have a stronger positive relationship with organizational commitment in nursing facilities compared to assisted-living facilities and home care agencies (Table 5.1).

This unanticipated result can be explained by further investigation using t-tests to compare direct care workers in nursing facilities with greater use of feedback with direct care workers in nursing facilities with no change in feedback or less use of feedback. Direct care workers in nursing facilities with greater use of feedback report insufficient supervisor support, a lack of supervisor encouragement to discuss care, and unclear instructions from their supervisors. One would suspect the feedback direct care workers receive in these organizations may be negative. If this is the case, these direct care workers are probably less likely to recommend the organization for a job.

Two other moderating hypotheses are not supported by this analysis (Table 5.1). The first is hypothesis 1b, which suggests that greater use of participation in care planning and flex time will have a stronger positive relationship with organizational commitment in home care agencies compared to nursing and assisted-living facilities. The second is hypothesis 3a, which proposes that greater use of supervisor training will have a stronger positive relationship with organizational commitment in nursing facilities compared to assisted-living facilities and home care agencies. No significant moderating effects are found for either of these relationships.

However, moderating effects are found to support hypothesis 2a, which suggests that greater use of direct care worker training and development practices will have a stronger positive relationship with organizational commitment in nursing facilities compared to assisted-living facilities and home care agencies (Table 5.1). Significant effects are found with all three organizational commitment variables (Table 5.4). First, being a nursing facility moderates the relationship between direct care workers' thinking about quitting less often and three career

development practices: having direct care workers participating in peer mentoring ($B=-0.192$, $Wald \chi^2=4.196$, $p=0.0405$) and career ladder programs to become a higher level direct care worker ($B=-0.212$, $Wald \chi^2=3.156$, $p=0.0757$) or an LPN ($B=-0.226$, $Wald \chi^2=5.901$, $p=0.0151$). Second, being a nursing facility also moderates the association between direct care workers' recommending the organization for a job and having participation in career ladder programs to become an LPN ($B=0.151$, $Wald \chi^2=2.905$, $p=0.0883$). Finally, in nursing facilities, having direct care workers participating in a higher number of direct care worker training programs is linked to direct care workers being less likely to leave their jobs in the next year ($B=-0.212$, $Wald \chi^2=7.486$, $p=0.0062$) and thinking about quitting less often ($B=-0.185$, $Wald \chi^2=2.716$, $p=0.0993$).

Longitudinal Results

The relationship between management practices and direct care worker organizational commitment, while controlling for direct care worker characteristics and the type of long-term care setting, was also tested using longitudinal data. Difference scores measuring changes in management practices, organizational commitment, and direct care worker characteristics from the baseline and follow-up surveys were used in the analysis. Descriptive statistics and regression results for the variables used in the longitudinal study design follow.

Descriptives

Table 5.5 provides a summary of the descriptive statistics for the change variables in this dissertation. Variable ranges, means, and standard deviations are also included in the table.

Table 5.5 Sample Descriptive Longitudinal Data

Description	Minimum	Maximum	Mean	S.D.
<i>Direct Care Workers (DCWs) (n=911)</i>				
<i>Changes in Organizational Commitment</i>				
Recommend organization for a job	-3	3	-0.069	0.818
Intent to leave	-2	2	0.081	0.655
Think about quitting	-3	3	0.139	0.802
<i>Changes in Direct Care Worker Characteristics</i>				
<i>Age</i>				
Younger to Middle-aged	0	1	0.015	0.123
Middle-aged to Older	0	1	0.046	0.210
Education (Change from less than or equal to high school to some or completed college=1)	0	1	0.092	0.289
Number of years as a direct care worker for this employer (Difference in the number of years from the baseline survey submission to the follow-up)	0.15	2.13	1.276	0.272
<i>Organizational-Level (n=76)</i>				
<i>Changes in Management Practices</i>				
Work design	-1.22	1.85	0.118	0.502
Participation in care planning scale	-2.00	1.50	0.099	0.779
Communication about tasks scale	-1.75	2.00	0.126	0.635
Feedback scale	-2.00	1.50	0.092	0.687
Flex time	-3.00	4.00	0.171	1.464
Do you currently use a career ladder program to become a higher-level direct care worker?	-1.00	1.00	0.0000	0.542
Do you currently use a career ladder program to become a Licensed Practical Nurse?	-1.00	1.00	0.066	0.550
Do you currently use peer mentors?	-1.00	1.00	0.066	0.525
Number of direct care worker training programs	-3.00	5.00	0.368	1.640
Number of supervisor training programs	-4.00	5.00	0.368	1.882

Changes in Organizational Commitment

Surprisingly, direct care workers report being slightly less committed to their organizations at the time of the follow-up survey compared to the baseline survey. Overall, direct care workers are slightly less likely to recommend the organization for a job ($M=-0.069$), and are slightly more likely to leave in the next year ($M=0.081$). Negative changes are also

found in that direct care workers' think about quitting a little more often ($M=0.139$), on average, at the time of the follow-up survey compared to the baseline survey.

Changes in Direct Care Worker Characteristics

In terms of the direct care worker characteristics measured in this survey, only a small percentage of direct care workers changed during the time between the baseline and follow-up surveys. A total of 6.1% of direct care workers in this sample moved to a higher age category. Only 1.5% of the sample changed from being less than 35 years old to being between 35 and 55 old. A small percentage (4.6%) changed from between 33 and 55 years old to more than 55 years old. A little more than 9% changed from having less than or equal to a high school education at the time of the baseline survey to having some or completed college at the follow-up survey.

As previously stated in Chapter 4, the baseline measure for a direct care worker's race was used for the longitudinal analysis. This analysis also used the Direct Care Worker Survey's follow-up and baseline data entry dates to calculate the change in the length of employment. This variable was calculated by taking the difference between the Direct Care Worker Survey's baseline and follow-up data entry dates. The average time between these dates was 1.276, or 15 months. The minimum duration was 0.15, or 2 months, and the maximum was 2.13 years.

Changes in Management Practices

Overall, management practices increased slightly. Work design, as a whole, increased 0.118, on average, on a 5-point Likert scale. Findings also show an increase in the components of work design. However, these increases are small, ranging from 0.092 for feedback to 0.171 for flex time on a 5-point Likert scale.

The staff training and development variables have interesting descriptive results. The higher level direct care worker change variable has a mean of zero because 22 organizations negate each other. Eleven organizations report direct care worker participation in this program at baseline but not at the time of the follow-up survey. Another 11 organizations report no direct care worker participation in this program at baseline but participation at the time of the follow-up survey.

Several of the staff training and development variables share the same mean. Overall, direct care worker participation in peer mentoring and career ladder programs to become an LPN show a slight increase from the baseline survey. Interestingly, both variables have the same mean of 0.066, within a range of -1 to 1. The direct care worker and supervisor training variables also have the same mean (0.368). Yet the possible ranges for these variables are different. The range of possible values for the direct care worker training change variable is -6 and 6, though the lowest reported change is -3 and the largest change is 5. The supervisor training change variable has a smaller range of possible values from -5 to 5. However, the lowest reported change in supervisor training programs is -4 and the largest change is 5.

Regression Analysis

Changes in Management Practices on Changes in Organizational Commitment

Tables 58-87 in Appendix C contain the generalized linear modeling results analyzing the longitudinal data for significant relationships between management practices and organizational commitment, controlling for direct care worker characteristics and the type of long-term care setting. Similar to the cross-sectional analysis, the likelihood chi-square ratio is significant, which implies the analytic model is different than the null model for all 30 analyses. A

comparison of cross-sectional results (noted in parentheses) to longitudinal results (with no parentheses) is summarized in Table 5.6.

Table 5.6 Effects of Changes in Management Practices on Changes in Organizational Commitment

Changes in Management Practices	Changes in Organizational Commitment		
	Recommend Organization for a Job	Intent to Leave	Think about Quitting
Work design			
Participation in care planning			
Communication about tasks			√*
Feedback	(√*)		(-√***)
Flex time			
Higher level direct care worker	(√*)		
Licensed practical nurse	√*		(√**)
Peer mentor			
Direct care worker training		(-√**)	-√*
Supervisor training	(√*) √*	(-√*)	-√*

*p ≤ 0.10, ** p ≤ 0.05, ***p ≤ 0.01, **** p ≤ 0.001

Note: Check marks in parentheses indicate cross-sectional results. Check marks without parentheses indicate longitudinal results

When comparing the longitudinal analysis to the cross-sectional analysis, no relationships are consistent except the association between supervisor training and recommending the organization for a job. In both analyses, greater use of training programs is related to direct care workers being more likely to recommend the organization for a job.

The number of training programs for supervisors and direct care workers is also related to the other two organizational commitment variables. However, one organizational commitment variable has a significant association to the number of training programs in the cross-sectional analysis, while the other organizational commitment variable is significantly related to an increase in the number of training programs in the longitudinal analysis. In the cross-sectional analysis, both direct care worker and supervisor participation in a higher number of training

programs are associated with direct care workers being less likely to leave in the next year. However, in the longitudinal analysis, an increase in participation in direct care worker ($B=-0.026$, $Wald \chi^2=2.721$, $p=0.0990$) and supervisor ($B=-0.028$, $Wald \chi^2=3.052$, $p=0.0806$) training programs is associated with thinking about quitting less often at the time of the follow-up survey compared to the baseline survey. This provides further support for hypothesis 3, which proposes that greater use of supervisor training will be associated with higher levels of organizational commitment.

The cross-sectional and longitudinal analyses produce conflicting findings for the career development portion of hypothesis 2, which states that greater use of direct care worker training and development practices will be associated with higher levels of organizational commitment (Table 5.1). In the cross-sectional analysis, direct care worker participation in career ladder programs to become an LPN is related to direct care workers thinking about quitting more often, which does not support hypothesis 2. However, the longitudinal analysis finds an increase in participation in this program is linked to an increase in direct care workers recommending the organization for a job ($B=0.103$, $Wald \chi^2=3.265$, $p=0.0708$). Therefore, this finding provides partial support for hypothesis 2.

The cross-sectional and longitudinal analyses also produce conflicting findings for hypothesis 1, which states that greater use of work design practices will be associated with higher levels of organizational commitment (Table 5.1). In the cross-sectional analysis, feedback is the only work design practice related to two of the three organizational commitment variables, which partially supports hypothesis 1. However, in the longitudinal analysis, the only work design practice associated with an organizational commitment variable is communication about tasks. However, the results show an increase in communication about tasks is associated with an

increase in thinking about quitting more often ($B=0.121$, $Wald \chi^2=6.247$, $p=0.0124$). This relationship is in the opposite direction one would anticipate and does not support hypothesis 1. This finding is surprising. However, after comparing the job problems of direct care workers in organizations that increased communication about tasks to those that did not, direct care workers who feel poor supervision (e.g. feeling their supervisors are not good at their jobs or not having support from their supervisors) was more of a problem at the time of the follow-up survey compared to the baseline survey increased their thoughts about quitting. If the communication between direct care workers and their supervisors is more frequent but the quality is poor, direct care workers may think about quitting more often.

Each of the individual items within the communication about tasks scale were tested to further understand which aspect of communication about tasks increased direct care workers' thoughts about quitting. These tests revealed a relationship between increased in written communication about care issues with other direct care workers and increased in thoughts about quitting. One may have concluded that additional written work may have increased feelings of job overload for direct care workers. However, further analysis showed no significant difference between job overload measures for direct care workers in organizations that increased written communication about tasks with other direct care workers compared to direct care workers in organizations that did not increase written communication about tasks with other direct care workers.

CHAPTER 6

DISCUSSION

The purpose of this study was to test relationships between management practices and organizational commitment. It was also hypothesized that the type of long-term care setting has a moderating effect on these relationships. This chapter provides a discussion of this study's results and limitations. It concludes with implications and future research for long-term care policies and practices.

Management Practices and Organizational Commitment

Previous research found relationships between organizational commitment and management practices, which included work design and staff training and development practices. This study contributes to long-term care research by investigating the association between direct care worker organizational commitment and management practices with independent direct care worker and organizational respondents. Including three types of long-term care settings in one study is also a unique contribution.

Supervisor training was related to at least one out of three organizational commitment variables in both the cross-sectional and longitudinal analyses. Three plausible explanations may have accounted for these results. First, during the BJBC demonstration, little variation existed in the supervisor training intervention. Unlike most of the interventions, the supervisor training programs implemented during the demonstration were similar among the state projects that chose to do supervisor training. This may explain the consistency across the sample.

Second, low measurement error in the supervisor training variable may be the reason for positive longitudinal findings when investigating the relationship between supervisor training and organizational commitment. The five supervisor training areas measured in the Clinical

Manager Survey are components of the supervisor training programs that were implemented in the BJBC demonstration. Therefore, supervisor training measures used in this survey were germane to the supervisor interventions and familiar to the respondents who completed the survey.

Third, long-term engagement after training may have contributed to positive longitudinal findings for supervisor training. During the demonstration, some organizations received guidance and support after the training from BJBC practice managers, which may have helped with transfer and maintenance of these skills. This assistance may have also allowed this intervention to penetrate all levels of the organization, leading to a positive relationship between supervisor training and direct care worker organizational commitment.

For the direct care worker training and development practices measured in this study, greater use of training and opportunities to becoming a higher level direct care worker and LPN were related to higher levels of organizational commitment. This finding was consistent with Castle et al. (2007) and Feldman's (1993) studies in two different types of long-term care settings. In home care agencies, Feldman (1993) reported that offering career advancement opportunities increased direct care worker retention rates. In nursing facilities, Castle et al. (2007) found a relationship between a lack of training and direct care workers' intent to leave. Typically, most direct care workers would report that a large quantity of training helps them handle complications in their jobs. However, staff members' perception of each training program could also influence the relationship between training practices and organizational commitment. Therefore, including data from the Direct Care Worker Survey, which measures perceptions of the usefulness of training they received, may offer more information to further

understand this relationship. This is discussed further in the future research section of this chapter.

Among work design practices, only feedback practices were related to higher levels of organizational commitment in the cross-sectional analysis. This finding was similar to a study by Parsons et al. (2003), which found that nurse aides who were satisfied with performance feedback were less likely to quit. Additionally, use of feedback was found to be related to competency (Arco & du Toit, 2006). In a study of competency after direct care worker training in a nursing home, Arco and du Toit (2006) found workers who had on-the-job feedback maintained competency compared to nurse aides who did not have on-the-job feedback. Feeling competent has also been linked to organizational commitment in a health care setting (Morris & Sherman, 1981). Further, greater use of supervisor ($r=0.285, p=0.012$) and direct care worker ($r=0.231, p=0.044$) training programs were also correlated with feedback in sample of organizations included in this analysis. Based on the previous literature and the correlation between the use of training programs and feedback, one would suspect that feedback may mediate the relationship between organizational commitment and greater use of training programs.

Surprisingly, increased communication about tasks was associated with increased thoughts about quitting. Normally, one would hypothesize that increased communication would increase organizational commitment. However, further analysis among the organizations that increased communication about tasks showed that direct care workers reported poor supervision as a problem. When using each item in the communication about task scale as a predictor variable, only increased written communication with peers was related to an increase in direct care workers' thoughts about quitting. One would suspect additional written work may increase

feelings of job overload for a direct care worker. However, further analysis shows job overload measures were not significantly different when comparing direct care workers in organizations that increased written communication about tasks with peers to direct care workers in organizations that did not.

The hypothesis that increased communication would increase organizational commitment also assumes that the quality of communication among staff members is cooperative and optimistic. Only the use of communication was measured in this study, not the quality of communication. Harmful dialogue among staff may have led to lower satisfaction with communication, peer conflicts, and antagonism, all of which were related to lower levels of commitment in previous research.

Satisfaction with peer and supervisor communication was found to affect individual behaviors (Blau, Cook, & Tatum 2005; van Vuuren et al., 2007). For example, dissatisfaction with peer and supervisor communication was correlated with the likelihood of organizational withdrawal in a sample of medical technicians (Blau, Cook, & Tatum, 2005). Conversely, greater satisfaction with supervisor communication was found to be related to organizational commitment (van Vuuren et al., 2007).

Peer conflicts and coworker antagonism were also found to be negatively related to aspects of organizational commitment in health care and other industries (Chiaburu & Harrison, 2008; Cox, 1999; Penhaligon, Louis, & Restubog, 2009). In an Australian university, Penhaligon, Louis, and Restubog (2009) found that peer conflicts affect individual behavior more than a negative relationship with supervisors. Chiaburu and Harrison (2008) reported an association between coworker antagonism and both intent to quit and turnover in a meta-analysis investigating coworker effects on perceptions, attitudes, organizational citizenship behavior, and

performance. Another interesting study used open-ended survey questions to investigate the type of verbal and behavioral communication methods people use to encourage coworkers to voluntarily leave (Cox, 1999). The sample in this study included respondents from the health care industry. Surprisingly, negatively criticizing peers and increasing communication with peers were among the top responses. Based on these studies, increased criticism or antagonistic written communication among coworkers would likely result in direct care workers' increasing their thoughts about quitting.

This study also tested the moderating effects of being a nursing facility, assisted-living facility, and home care agency on the relationship between management practices and organizational commitment. Among these three types of long-term care settings, only being a nursing facility significantly moderated the relationship between higher levels of organizational commitment and greater use of feedback and direct care worker training and development practices. However, including interaction terms did little to improve the main effects models. Therefore, these results should not be considered remarkable, and an attempt to interpret these findings would be inappropriate given the maximum decrease in the AIC is 3.

Although previous research found differences among long-term care settings for some of the organizational commitment and management practices measures used in this analysis (Brannon, Barry, Kemper, Schreiner, & Vasey, 2007; Stott et al., 2008), the type of long-term setting was not a meaningful moderator in this study. One reason may be the unequal sample sizes when performing moderating multiple regression, which often reduces power and leads to smaller changes in model fit indices when comparing the main effects model to the interaction model (Aguinis, 2004). Power for the significant interactions in this analysis ranged from 0.006 for the nursing facilities and feedback interaction term to 0.663 for the nursing facility and direct

care worker training interaction term. Another possible explanation is the large amount of variance in the baseline organizational commitment measures within the entire sample (Table 5.2). Therefore, the variation among the three types of long-term care settings may be too large to create a significant change in the AIC. Future research using equal sample sizes for each group and additional predictors to account for the large amount of error may help resolve these drawbacks.

Limitations

Several considerations may limit the interpretation and generalizability of the results of this study. The purpose of the surveys was to investigate the before-and-after effects of a variety of practice constructs and job outcomes that may have changed during the BJBC demonstration. Therefore, the data did not capture other work design and staff training and development measures, which may have accounted for more variance in the research model. As previously stated in Chapter 2, organizational commitment is broadly defined in the literature. Previous studies on organizational commitment include variations on the measures used in this study and other aspects that are not measured in the Direct Care Worker Survey, such as the respondent's attitude about the fate of the organization and being inspired in the way of job performance. Therefore, other aspects of organizational commitment not included in the survey may have been affected by management practices.

As previously stated, each state project focused on improving different management practices. Therefore, the survey instruments were designed to be broad enough to document each state's mission, direct care workers' perceptions of their job, and management practices at each participating organization. Although these surveys were not rigorously validated quantitatively, both surveys were piloted. Further, most of the items in the Direct Care Worker

Survey were adapted from previously validated instruments, such as the Michigan Organizational Assessment Battery (Cammann, Fichman, Jenkins, & Klesh, 1983).

Several lengthy surveys, such as the *Organizational Commitment Questionnaire* (Mowday et al., 1979) and the *Job Diagnostic Survey* (Hackman & Oldham, 1980), would have to be administered in order to use previously validated instruments for organizational commitment and some of the management practices used in this analysis. Conducting just a sampling of these validated instruments to measure all the practice concepts included in this analysis would fatigue the participant and decrease the response rate. Future research using previously validated instruments to measure organizational commitment and each type of management practice in greater detail would build on the results of this study.

The organizational commitment measure may have non-response bias. The use of a two study design in this dissertation improved the methodology of this dissertation. However, using this design eliminated direct care workers who only responded to the baseline or follow-up surveys from the analysis, which may have introduced bias in the outcome measure.

Independent t-tests showed that direct care workers' organizational commitment was slightly lower in respondents who only completed the baseline or follow-up surveys compared to the panel included in this study. For example, direct care workers who only responded to the baseline survey were slightly less likely to recommend the organization for a job ($n=2023$, $M=2.21$, $t=-3.987$, $p<0.001$) and more likely to leave in the next year ($n=2025$, $M=0.68$, $t=12.471$, $p<0.001$) compared to the study's panel, where the averages for recommending the organization for a job was 2.33 and intent to leave was 0.36. The baseline respondents also thought about quitting a little more often ($n=2032$, $M=1.35$, $t=5.743$, $p<0.001$) compared to the panel of direct care workers ($M=1.14$) included in this analysis.

Significant differences were also found between direct care workers who responded only to follow-up survey and the panel. Direct care workers who only responded to the follow-up survey were also slightly less likely to recommend the organization for a job ($n=1113$, $M=2.20$, $t=-3.708$, $p<0.001$), more likely to leave in the next year ($n=1112$, $M=0.65$, $t=9.557$, $p<0.001$), and thought about quitting more often ($n=1115$, $M=1.28$, $t=3.379$, $p=0.001$) compared to this study's panel. Obtaining follow-up data from direct care workers who left the organization would help reduce any non-response bias that exists in the organizational commitment measure.

Cross-sectional findings cannot be interpreted as causal and can only be generalized to long-term care organizations in five states: Oregon, Iowa, Pennsylvania, Vermont, and North Carolina. The sample of organizations is also a selected sample. Organizations participated voluntarily in the BJBC demonstration, thus demonstrating some motivation to improve their use of management practices. However, based on the measures in the Clinical Manager Survey and the Area Resource File (ARF), this sample was similar to the national data in all organizational characteristics except nursing facility profit-status (American Health Care Association, 2006; American Association of Homes and Services for the Aging, 2006; CMS, 2008; Hawes, 2003; National Association for Home Care & Hospice, 2004). Only 29% of the nursing facilities in this analytic sample are for profit, which was lower than the national percentages of 66.5% (American Health Care Association, 2006). One could argue that this is not a representative sample of organizations. However, the baseline descriptive statistics show that most of this study's sample is either lower or slightly higher than the midpoint of the scales used to measure work design and career advancement opportunities for direct care workers. For example, the midpoint of the 5-point Likert scale for the work design variables is 2.5. The mean of the work design variables ranged from 1.671 to 2.913 (Table 5.2), which is below or slightly above the

midpoint. Previous research cites that non-profit health care organizations have higher quality of care measures compared to for-profit health care organizations (Aaronson, Zinn, & Rosko, 1994; Hillmer, Wodchis, Gill, Anderson, & Rochon, 2005). To the extent that BJBC organizations represent a biased sample, one would suspect they would report a much higher use of management practices that promote recruitment and retention to support higher quality of care, which was not the case for a majority of the management practices being assessed.

Even with longitudinal data, history (i.e. changes in long-term care state policies), testing effects (i.e. a change in a respondent's interpretation of a construct, such as organizational commitment, or behavior, such as unconsciously increasing the use of a management practice, after the baseline survey), and sample attrition are threats to the validity of this study. These threats can create rival hypotheses about what caused higher or lower levels of organizational commitment. For example, the testing effects of the baseline surveys may have induced clinical managers and direct care workers to change management practices and perceptions of organizational commitment respectively, leading to higher or lower responses in the follow-up surveys. However, as previously stated in the preceding paragraph, the organizational characteristics in this sample of organizations, except nursing facility profit status, were similar to national averages. Therefore, one would suspect these threats to validity would exist in any study using a longitudinal design. Collecting more data over a longer period of time after the baseline survey and interventions would establish the reliability of the measurements and reduce maturation effects.

Future Research

The results of this study provide several avenues for future research. As previously stated, this study finds that training is associated with higher levels of organizational commitment. However, what procedures and policies should long-term care organizations

implement after training to transfer and maintain newly learned skills? Successful carryover of supervisor training programs in the health care field has been documented in a study of a manager-supervisor training program intervention at a residential facility for people with developmental disabilities (Methot, Williams, Cummings, & Bradshaw, 1996). Through qualitative research, Methot et al. (1996) reported that one method of carrying over training was to provide performance feedback. The design of this study was used in a single organization and would be impossible to complete in all of the 98 organizations in this sample. However, future research using follow-up surveys of the BJBC sample or qualitative analysis of a few organizations would be practical. This analysis could also investigate how organizations supported skill development after direct care worker and supervisor training, which would provide information for long-term care organizations on how to change policies and procedures for effective support and transfer of training skills.

Although this study finds that a higher number of training programs for direct care workers and supervisors are associated with some aspects of organizational commitment, staff perception of the usefulness of training is not included in the analysis. This leads to another research question: Do staff members' perceptions of the usefulness of training mediate the relationship between greater use of training and organizational commitment? This hypothesis could be tested with items from the Direct Care Survey. Although immediate reactions to training were not measured by the Direct Care Worker Survey, their thoughts about the usefulness of a variety of training programs were measured by 12 questions in this instrument. This would allow administrators to understand which training programs were valued by their staff and which programs could be eliminated.

This study also found a greater amount of performance feedback was related to components of organizational commitment. In previous research, goal setting and self-esteem were shown to moderate this relationship in other industries (Rein & Prien, 1995; Tziner & Latham, 1989). For example, a study of 90 policy processor and customer service representatives in an insurance agency found self-esteem moderates the relationship between frequency of feedback and intent to search for another job in the next 12 months (Rein & Prien, 1995). When frequent feedback was provided, processors and representatives with low self-esteem reported a lower intent to search for another job than those with high self-esteem. In another study, feedback with goal-setting resulted in higher organizational commitment than feedback alone for Israeli airport authority managers who received training in providing performance feedback and goal-setting (Tziner & Latham, 1989). Although goal-setting and self-esteem were not measured in the surveys, one might ask: Is goal-setting and greater use of feedback related to higher levels of organizational commitment? Future research, including goal-setting and the interaction between the frequency of feedback and goal-setting, while controlling for self-esteem, may account for the additional variance in this investigation.

Contrary to one hypothesis in this study, an increase in communication about tasks was related to an increase in direct care workers' thoughts about quitting. However, an increase in poor or negative task communication among peers and supervisors may be a plausible explanation for this finding. This leads to another interesting question: Does the quality of peer and supervisor communication moderate the relationship between communication about tasks and direct care workers' thoughts about quitting? Including perceptions of the quality of supervisor communication from the Direct Care Worker Survey as moderators in future research would help to answer this question. Unfortunately, this survey does not include quality measures

of peer communication. Therefore, follow-up surveys would need to be administered to measure this area. If poor communication quality has significant effects, this information will allow administrators to take the necessary steps to improve this area by providing effective communication skills training for their staff.

Overall, obtaining more data points over a longer period of time will help us understand phase changes in management practices and organizational commitment in the long-term care industry. For example, Armenakis and Bedeian (1999) documented models of planned organizational change and discussed phases that administrators and employees modeled in other industries. Steps administrators should complete for successful implementation, in general, are planning, communicating, gaining employee acceptance of, and institutionalizing change (Armenakis & Bedeian, 1999). This article also discusses the phases employees undergo during successful implementation: denial that change is necessary, resistance to change by not participating or postponing implementation, exploration of changes by experimenting with the new processes, and commitment to changes (Armenakis & Bedeian, 1999). This study leads to two research questions: (1) What phases do long-term care administrators complete when implementing changes in management practices? (2) What stages do direct care workers in the long-term care industry undergo during the implementation process? Time series analyses investigating the patterns that administrators and employees follow when implementing changes in management practices would help determine whether models discussed in the Armenakis and Bedeian (1999) article apply to the long-term care industry.

A longitudinal study collecting several data points over a longer period of time or qualitative data from interviews or open-ended questions would also show how a direct care worker's organizational commitment changes during this process. Two examples illustrate the

need for this type of analysis. The first includes the conflicting findings for the relationship between having direct care worker participation in LPN programs and components of organizational commitment in the cross-sectional and longitudinal analyses. In the cross-sectional analysis, direct care worker participation in career ladder programs to become an LPN was positively related to thinking about quitting more often. Conversely, in the longitudinal analysis, direct care worker participation in this program was related to recommending the organization for a job. The BJBC demonstration provided some technical assistance to organizations for direct care worker career advancement programs. This support may have created beta changes among direct care workers who took advantage of this program. Such changes occur when the meaning of the construct stays the same but the manner in which it is subjectively measured is recalibrated by the respondent (Golembiewski et al., 1976). Therefore, direct care workers participating in an LPN program may have reconsidered how they measured the concept of organizational commitment at the time of the follow-up survey compared to the baseline survey.

The second example includes the documented changes in organizational commitment descriptive statistics. Negative changes in the organizational commitment measures used in this analysis may be due the gamma changes. Golembiewski (1976) explains, “Gamma change involves a redefinition or reconceptualization of some domain, a major change in the perspective or frame of reference within which phenomena are perceived and classified, in what is taken to be relevant insome slice of reality” (p. 134-135). During the demonstration, direct care workers may have reconceptualized the organization after receiving new information on improving organizational practices and processes. This may have created higher standards for the questions pertaining to commitment, which may have changed respondents’ opinions about these measures

in a slightly negative direction. More data points over a longer period of time, interviews, open-ended questions, or a combination of these data collection methods on direct care workers' perceptions of organizational commitment and management practices would provide more information about the longitudinal findings in this study.

Implications

Findings from this study provide useful information to long-term care administrators and policy makers. This study provides evidence for the importance of training and career advancement. However, many administrators argue these programs are costly. Long-term care organizations rely primarily on state and federal reimbursement for services, which limits financial resources. Administrators are also reluctant to provide training and career advancement programs, fearing direct care workers will resign after training and take their newly acquired skills to another organization. Yet this study and previous research (Castle et al., 2007) find the opposite. In this study, direct care workers report they are less likely to leave in the next year and have decreased thoughts about quitting when organizations offer more training programs to direct care workers and their supervisors. Further, in organizations that have more supervisor training programs and direct care worker participation in career ladder opportunities to become a higher level direct care worker or LPN, direct care workers are more likely to recommend the organization as a prospective employer, which helps with recruitment.

Moreover, administrators need to be aware that positive changes in organizational commitment are not immediate when new management practices are implemented. Armenakis and Bedeian (1999) state, "The change process typically occurs in multiple steps that take a considerable amount of time to unfold and efforts to bypass steps seldom yield a satisfactory result...Mistakes in any step can slow implementation, as well as negate hard-won progress" (p. 303). Successful change requires adequate time to carry out each step during the process and let

direct care workers respond to each step. Before administrators see higher levels of commitment, they should expect resistance and even an increase in turnover of staff members who will not “buy-into” the changes in the organization (Armenakis & Bedeian, 1999).

Until administrators begin receiving a return on their investments in these programs, long-term care policies that offer subsidies to organizations for training and direct care worker career advancement opportunities may help increase staff training and development in this industry. Providing these resources may also produce an increase in retention of direct care workers, which would improve continuity of care and lower turnover costs. This will also show administrators that long-term care policy makers believe these programs are worth the investment and ease administrators’ reluctance by bearing some of the financial burden.

Policies that require LPN and RN curricula to provide courses in managing direct care workers may also help eliminate the need for administrators to incur the cost of supervisor training. Candela and Bowles (2008) report some curricula currently include instruction in leadership and management at the end of coursework; however, the sample of Nevada nurses in this study believe more academic preparation in this area is necessary. Further, Smith and Crawford (2003) report a high percentage of RNs, who are employed at hospitals, long-term care facilities, and community or ambulatory care settings, believe they are inadequately prepared to supervise LPNs and direct care workers. Policies mandating courses in leadership and management would prompt all educational institutions to include these classes in nursing curricula.

This study also finds greater use of feedback about everyday job performance is related to higher levels of organizational commitment. This evidence provides an effective tool for administrators who desire a little or no cost practice to retain direct care workers. However,

training may be necessary for supervisors who do not know how to provide constructive performance feedback. Long-term care policies that assist in implementing beneficial feedback procedures by assigning consultants or providing training for supervisors through RN curricula or proprietary programs may help organizations initiate this practice.

Conclusions

This analysis found greater use of feedback and staff training and development programs are associated with higher levels of organizational commitment. While other surveys designed to measure these constructs may have found relationships between additional management practices and dimensions of organizational commitment, the measures used in this study offer a preliminary understanding of the relationship between the use of long-term care management practices and direct care worker organizational commitment with data from separate organizational- and individual-level respondents.

With the increasing need for Medicaid and the current downturn in the U.S. market, many U.S. states are reducing or freezing Medicaid reimbursement rates for health care services (Abramson, & Redfoot, 2009; Sack & Zezima, 2009). Administrators and policy makers need low-cost mechanisms to recruit and retain direct care workers in the long-term care industry. Understanding the link between management practices and organizational commitment can assist in developing appropriate programs to retain this vital workforce. Testing the association between greater use of management practices and direct care worker organizational commitment with separate respondents is a new contribution to long-term care organizational research, and the results from this study provide a catalyst for future research in this area.

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APPENDICES

Appendix A. Clinical Manager Survey

1. What kind of services does your organization provide? (Check one only.)
 - Home health care: skilled services
If yes, what was the total number of visits in the last pay period? _____
 - Home care/personal care: supportive services
If yes, what was the total number of visits in the last pay period? _____
 - Assisted-living/personal care
If yes, what was your average daily census in the last pay period? _____
 - Adult day services
If yes, what was your average daily census in the last pay period? _____
 - Skilled nursing/intermediate care (nursing home)
If yes, what was your average daily census in the last pay period? _____
 - Other (specify) _____

2. Is your organization:
 - For profit
 - Not-for-profit
 - Both for-profit and not-for-profit
 - Public/government

3. Is your organization: (Check one only.)
 - Free standing (i.e., the CEO/director within your organization has ultimate responsibility for decisions)
 - Part of a chain, system or multi-organization corporate structure

4. Within your market area, approximately how many similar organizations are direct competitors?
 - None
 - 1-3
 - 4-6
 - 7-9
 - 10+

5. Are your direct care workers unionized?
 - Yes
 - No

6. How often are sign-on bonuses given to direct care workers when they are hired?	<input type="radio"/> Never	<input type="radio"/> Seldom	<input type="radio"/> Occasionally	<input type="radio"/> Frequently	<input type="radio"/> Always
7. How often are bonuses/rewards given to direct care workers for recruiting new direct care workers?	<input type="radio"/> Never	<input type="radio"/> Seldom	<input type="radio"/> Occasionally	<input type="radio"/> Frequently	<input type="radio"/> Always
8. How often do direct care workers have input into changes in patient/resident/client care plans?	<input type="radio"/> Never	<input type="radio"/> Seldom	<input type="radio"/> Occasionally	<input type="radio"/> Frequently	<input type="radio"/> Always
9. How often do direct care workers actively participate in developing patient/resident/client care plans?	<input type="radio"/> Never	<input type="radio"/> Seldom	<input type="radio"/> Occasionally	<input type="radio"/> Frequently	<input type="radio"/> Always
10. How often do direct care workers write in patient/resident/client charts?	<input type="radio"/> Never	<input type="radio"/> Seldom	<input type="radio"/> Occasionally	<input type="radio"/> Frequently	<input type="radio"/> Always
11. How often do direct care workers communicate in writing with other direct care workers to relay information about residents/patients/clients?	<input type="radio"/> Never	<input type="radio"/> Seldom	<input type="radio"/> Occasionally	<input type="radio"/> Frequently	<input type="radio"/> Always
12. How often do direct care workers communicate verbally with other direct care workers to relay information about residents/patients/clients?	<input type="radio"/> Never	<input type="radio"/> Seldom	<input type="radio"/> Occasionally	<input type="radio"/> Frequently	<input type="radio"/> Always
13. How often do direct care workers communicate information either in writing or verbally about residents/patients/clients by reporting to their supervisors ?	<input type="radio"/> Never	<input type="radio"/> Seldom	<input type="radio"/> Occasionally	<input type="radio"/> Frequently	<input type="radio"/> Always
14. How often do direct care workers meet formally or informally with a supervisor to discuss patient/resident/client care issues?	<input type="radio"/> Never	<input type="radio"/> Seldom	<input type="radio"/> Occasionally	<input type="radio"/> Frequently	<input type="radio"/> Always
15. How often do direct care workers receive verbal feedback about their everyday job performance?	<input type="radio"/> Never	<input type="radio"/> Seldom	<input type="radio"/> Occasionally	<input type="radio"/> Frequently	<input type="radio"/> Always
16. How often do direct care workers receive written feedback about their everyday job performance?	<input type="radio"/> Never	<input type="radio"/> Seldom	<input type="radio"/> Occasionally	<input type="radio"/> Frequently	<input type="radio"/> Always

17. How often do direct care workers receive a formal performance appraisal?

- Never
- Annually
- 2-5 times a year
- Monthly or bi-monthly
- More than once a month

How often are the following management practices used for direct care workers in your organization?

18. Permanent assignment to patients/residents/clients.

- Never
- Seldom
- Occasionally
- Frequently
- Always

19. Rotation of assignments to different services or units.

- Never
- Seldom
- Occasionally
- Frequently
- Always
- Does not apply

20. Cross-training (learning new skills not traditionally used by direct care workers, such as medication administration or assisting with physical therapy).	<input type="radio"/> Never	<input type="radio"/> Seldom	<input type="radio"/> Occasionally	<input type="radio"/> Frequently	<input type="radio"/> Always
21. Self-managed work groups that include direct care workers.	<input type="radio"/> Never	<input type="radio"/> Seldom	<input type="radio"/> Occasionally	<input type="radio"/> Frequently	<input type="radio"/> Always
22. Flex Time for direct care workers.	<input type="radio"/> Never	<input type="radio"/> Seldom	<input type="radio"/> Occasionally	<input type="radio"/> Frequently	<input type="radio"/> Always

23. What percentage of direct care workers currently participate in a career ladder program for the direct care worker to advance to a higher level of direct care worker (for example, team leader or dementia care specialist)?	<input type="radio"/> None	<input type="radio"/> 1-25%	<input type="radio"/> 26-50%	<input type="radio"/> 51-75%	<input type="radio"/> 76-100%
24. What percentage of direct care workers currently participate in a career ladder program for the direct care worker to become a Licensed Practical Nurse?	<input type="radio"/> None	<input type="radio"/> 1-25%	<input type="radio"/> 26-50%	<input type="radio"/> 51-75%	<input type="radio"/> 76-100%
25. What percentage of direct care workers currently have a designated peer mentor?	<input type="radio"/> None	<input type="radio"/> 1-25%	<input type="radio"/> 26-50%	<input type="radio"/> 51-75%	<input type="radio"/> 76-100%
26. Approximately what percentage of direct care workers participate in formal inservice programs beyond those required for certification?	<input type="radio"/> None	<input type="radio"/> 1-25%	<input type="radio"/> 26-50%	<input type="radio"/> 51-75%	<input type="radio"/> 76-100%
27. During the past year, approximately what percentage of direct care workers have completed a self-directed educational video or computer-based training program while at work?	<input type="radio"/> None	<input type="radio"/> 1-25%	<input type="radio"/> 26-50%	<input type="radio"/> 51-75%	<input type="radio"/> 76-100%
28. During the past year, approximately what percentage of direct care workers have attended a conference or workshop away from work?	<input type="radio"/> None	<input type="radio"/> 1-25%	<input type="radio"/> 26-50%	<input type="radio"/> 51-75%	<input type="radio"/> 76-100%

29. Is participation in formal training or continuing education programs linked to compensation?

- Yes
- No

30. Is participation in formal training or continuing education programs linked to performance appraisal?

- Yes
- No

During the past year, what percentage of direct care workers received any formal training (inservice, workshop, etc.) on ...

31. communicating effectively with other employees?	<input type="radio"/> None	<input type="radio"/> 1-25%	<input type="radio"/> 26-50%	<input type="radio"/> 51-75%	<input type="radio"/> 76-100%
32. communicating effectively with patients/residents/clients?	<input type="radio"/> None	<input type="radio"/> 1-25%	<input type="radio"/> 26-50%	<input type="radio"/> 51-75%	<input type="radio"/> 76-100%
33. diversity or cultural issues?	<input type="radio"/> None	<input type="radio"/> 1-25%	<input type="radio"/> 26-50%	<input type="radio"/> 51-75%	<input type="radio"/> 76-100%

34. Please estimate the overall competency level of direct care workers in your organization using the following benchmark:

- 0 = All require constant supervision and guidance
- 1
- 2
- 3
- 4
- 5 = All have an average level of competency for the position
- 6
- 7
- 8
- 9
- 10 = All perform their jobs well with minimal guidance

The next 6 questions refer to **individuals who supervise the activities of direct care workers** in their everyday work. This may be a nurse, manager, or other clinical staff person. In answering these questions, think of those persons who are most likely to supervise direct care workers in your organization.

35. Who is the person directly responsible for supervising direct care workers in their daily activities?

- RN staff nurse
- RN supervisor
- HR manager
- LPN charge or unit nurse
- Other (specify): _____

During the past year, what percentage of direct care worker **supervisors** received any formal training (inservice, workshop, etc.) on ...

36. communicating effectively with other employees?	<input type="radio"/> None	<input type="radio"/> 1-25%	<input type="radio"/> 26-50%	<input type="radio"/> 51-75%	<input type="radio"/> 76-100%
37. communicating effectively with patients/residents/clients?	<input type="radio"/> None	<input type="radio"/> 1-25%	<input type="radio"/> 26-50%	<input type="radio"/> 51-75%	<input type="radio"/> 76-100%
38. diversity or cultural issues?	<input type="radio"/> None	<input type="radio"/> 1-25%	<input type="radio"/> 26-50%	<input type="radio"/> 51-75%	<input type="radio"/> 76-100%
39. effective disciplinary procedures?	<input type="radio"/> None	<input type="radio"/> 1-25%	<input type="radio"/> 26-50%	<input type="radio"/> 51-75%	<input type="radio"/> 76-100%
40. skills for managing people?	<input type="radio"/> None	<input type="radio"/> 1-25%	<input type="radio"/> 26-50%	<input type="radio"/> 51-75%	<input type="radio"/> 76-100%

41. Does your organization have a formal goal for developing your direct care worker staff?

- Yes
- No
- Don't know

42. If yes, do you have a written action plan for achieving these staff development goals?

- Yes
- No
- Don't know

43. How many times have written **employee** satisfaction surveys been conducted during the past year?

- None
- 1
- 2
- 3
- More than 3
- Don't know

44. How many formal **resident/patient/client** satisfaction surveys did your organization conduct during the last year?

- None
- 1
- 2
- 3
- More than 3
- Don't know

Now, we'd like to ask if you agree or disagree with the following statements about your organization. It is important that your confidential responses to these questions be honest and accurate.

45. Employees take personal responsibility for their behavior.	<input type="radio"/> Strongly agree	<input type="radio"/> Agree	<input type="radio"/> Neither agree nor disagree	<input type="radio"/> Disagree	<input type="radio"/> Strongly disagree
46. The organizational culture encourages risk-taking.	<input type="radio"/> Strongly agree	<input type="radio"/> Agree	<input type="radio"/> Neither agree nor disagree	<input type="radio"/> Disagree	<input type="radio"/> Strongly disagree
47. The organizational culture encourages continuous improvement.	<input type="radio"/> Strongly agree	<input type="radio"/> Agree	<input type="radio"/> Neither agree nor disagree	<input type="radio"/> Disagree	<input type="radio"/> Strongly disagree
48. Senior management has presented a clear vision of the future of the organization.	<input type="radio"/> Strongly agree	<input type="radio"/> Agree	<input type="radio"/> Neither agree nor disagree	<input type="radio"/> Disagree	<input type="radio"/> Strongly disagree
49. The organization rewards staff for being innovative.	<input type="radio"/> Strongly agree	<input type="radio"/> Agree	<input type="radio"/> Neither agree nor disagree	<input type="radio"/> Disagree	<input type="radio"/> Strongly disagree
50. Management communicates effectively with staff in all levels of the organization.	<input type="radio"/> Strongly agree	<input type="radio"/> Agree	<input type="radio"/> Neither agree nor disagree	<input type="radio"/> Disagree	<input type="radio"/> Strongly disagree
51. Management solicits input from all levels of staff when deciding on purchases related to care delivery.	<input type="radio"/> Strongly agree	<input type="radio"/> Agree	<input type="radio"/> Neither agree nor disagree	<input type="radio"/> Disagree	<input type="radio"/> Strongly disagree
52. Management solicits input from all levels of the organization when deciding on policies and protocols.	<input type="radio"/> Strongly agree	<input type="radio"/> Agree	<input type="radio"/> Neither agree nor disagree	<input type="radio"/> Disagree	<input type="radio"/> Strongly disagree

Now, we'd like to ask whether you agree or disagree with the following statements about your organization in the context of the Better Jobs, Better Care project.

53. The organization had successfully implemented programs intended to improve the quality of direct care worker jobs prior to the Better Jobs, Better Care project.	<input type="radio"/> Strongly agree	<input type="radio"/> Agree	<input type="radio"/> Neither agree nor disagree	<input type="radio"/> Disagree	<input type="radio"/> Strongly disagree
54. The Better Jobs, Better Care project is being supported by a senior level executive in your organization.	<input type="radio"/> Strongly agree	<input type="radio"/> Agree	<input type="radio"/> Neither agree nor disagree	<input type="radio"/> Disagree	<input type="radio"/> Strongly disagree
55. All levels of management are committed to the Better Jobs, Better Care project.	<input type="radio"/> Strongly agree	<input type="radio"/> Agree	<input type="radio"/> Neither agree nor disagree	<input type="radio"/> Disagree	<input type="radio"/> Strongly disagree
56. Senior management has clearly articulated the need for the Better Jobs, Better Care project.	<input type="radio"/> Strongly agree	<input type="radio"/> Agree	<input type="radio"/> Neither agree nor disagree	<input type="radio"/> Disagree	<input type="radio"/> Strongly disagree
57. The Better Jobs, Better Care project conflicts with other major activities going on in the organization.	<input type="radio"/> Strongly agree	<input type="radio"/> Agree	<input type="radio"/> Neither agree nor disagree	<input type="radio"/> Disagree	<input type="radio"/> Strongly disagree

58. Regarding the recruitment and retention of direct care workers, what are the biggest changes in practice that you expect to occur as a result of the BJBC project? Please write a brief description of one or two changes that are part of the BJBC project.

59. If you could do one thing to improve your organization's ability to recruit and retain quality direct care workers, what would it be?

60. Do you use any of the following methods in your organization to help employees manage their stress levels? Check all that apply.

- Extra time off during/following periods of high workload
- Quiet areas in the workplace for breaks
- Exercise breaks during work hours
- Reimbursement for health club membership
- Support groups that meet regularly and include a group facilitator
- Private counseling at the workplace or offsite
- Other: _____
- Don't use any specific method

61. What mechanisms are used in your organization to handle employee concerns? Check all that apply.

- Talk with supervisor
- Toll-free "hotline"
- Organizational ombudsman
- Mediation
- Arbitration
- Other: _____
- Don't use any specific method

62. Have any grievances been filed by direct care workers in your organization within the last year?

- Yes
- No

62b. If yes, approximately how many grievances were filed?

63. What approaches are used to handle poor performance or negative behaviors at your organization?

Check all that apply.

- Counseling by supervisor in the work unit
- Counseling by senior manager
- Written documentation
- Final warning conference
- Probation
- Suspension
- Termination
- Other: _____
- Don't use any specific method

64. When direct care workers terminate their employment voluntarily, how often are exit interviews conducted?

- Never
- Seldom
- Occasionally
- Frequently
- Always

65. How is human resource management information communicated to employees? Check all that apply.

- Employee handbook
- Company newsletter or magazine
- Bulletin boards
- Internet postings
- Email messages to individuals
- Audiotapes/videotapes
- Teleconferencing
- Formal meetings
- Other (explain): _____
- Don't use any specific method

66. Do you use any of the following individual financial incentives for good performance for the direct care workers that you employ? Check all that apply.

- Merit bonus
- Attendance bonus
- Special recognition awards (merchandise, trips, etc.)
- Productivity bonus tied to quality or outcomes
- Other individual incentive (explain): _____
- Don't use any individual financial incentives

66a. If you do use special recognition awards as individual financial incentives for good performance for the direct care workers that you employ, what type(s) do you use? Check all that apply.

- Coupons and/or gift certificates for meals, merchandise, etc.
- Holiday bonuses and/or gifts
- Cash
- Trips
- Other: _____

67. Do you use any of the following group financial incentives for good performance that include direct care workers? Check all that apply.

- Incentives based on group or unit productivity
- Special recognition awards (merchandise, trips, etc.) for unit or team
- Other group incentive (explain): _____
- Don't use any group financial incentives

68. Do you use any of the following organization-wide financial incentives that include direct care workers? Check all that apply.

- Profit sharing
- Employee stock options
- Special recognition awards (merchandise, trips, etc.)
- Other organization-wide incentives (explain): _____
- Don't use any of the above organization-wide financial incentives

Do you offer any of the following health benefits to direct care workers?

If yes, indicate how much of the cost is paid by your organization. If benefits are offered but not paid for by your organization, indicate 0%.
If yes, indicate if benefit is available to all direct care workers (full-time, part-time, per diem, etc.).
If yes, indicate if direct care worker families/dependents are also covered.

Benefit:	Offered to direct care workers:	Cost paid by organization:	Benefit is available to:	Direct care worker families/dependents also covered:
69. Health insurance	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others	<input type="radio"/> Yes <input type="radio"/> No
70. Dental insurance	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others	<input type="radio"/> Yes <input type="radio"/> No
71. Vision insurance	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others	<input type="radio"/> Yes <input type="radio"/> No
72. Prescription drug plan	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others	<input type="radio"/> Yes <input type="radio"/> No

Do you offer any of the following health benefits to direct care workers?

If yes, indicate how much of the cost is paid by your organization. If benefits are offered but not paid for by your organization, indicate 0%.
If yes, indicate if benefit is available to all direct care workers (full-time, part-time, per diem, etc.).
If yes, indicate if direct care worker families/dependents are also covered.

Benefit:	Offered to direct care workers:	Cost paid by organization:	Benefit is available to:	Direct care worker families/dependents also covered:
73. Mental/behavioral health assistance or programs	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others	<input type="radio"/> Yes <input type="radio"/> No
74. Wellness programs	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others	<input type="radio"/> Yes <input type="radio"/> No

Do you offer any of the following financial or retirement benefits to direct care workers?

		If yes, indicate how much of the cost is paid by your organization. If benefits are offered but not paid for by your organization, indicate 0%. If yes, indicate if benefit is available to all direct care workers (full-time, part-time, per diem, etc.).	
Benefit:	Offered to direct care workers:	Cost paid by organization:	Benefit is available to:
75. Life insurance	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others
76. Disability insurance	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others
77. Financial assistance to attend advanced training workshops/conferences	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others
78. Educational assistance to attend certificate or degree programs	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others

Do you offer any of the following financial or retirement benefits to direct care workers?

		<p>If yes, indicate how much of the cost is paid by your organization. If benefits are offered but not paid for by your organization, indicate 0%.</p> <p>If yes, indicate if benefit is available to all direct care workers (full-time, part-time, per diem, etc.).</p>	
Benefit:	Offered to direct care workers:	Cost paid by organization:	Benefit is available to:
79. Pension, 401(k), 403(b) or IRA plan	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others
80. Health care for retirees	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others
81. Use of car during work hours	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others
82. Transportation assistance to/from work	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others
83. Paid time off	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others

Do you offer any of the following financial or retirement benefits to direct care workers?

		<p>If yes, indicate how much of the cost is paid by your organization. If benefits are offered but not paid for by your organization, indicate 0%.</p> <p>If yes, indicate if benefit is available to all direct care workers (full-time, part-time, per diem, etc.).</p>	
Benefit:	Offered to direct care workers:	Cost paid by organization:	Benefit is available to:
84. Sick leave	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others
85. Vacation time	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others
86. Uniforms and/or shoes	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All-time direct care workers and some others

Do you offer any of the following family/social benefits to direct care workers?

		<p>If yes, indicate how much of the cost is paid by your organization. If benefits are offered but not paid for by your organization, indicate 0%. If yes, indicate if benefit is available to all direct care workers (full-time, part-time, per diem, etc.).</p>	
Benefit:	Offered to direct care workers:	Cost paid by organization:	Benefit is available to:
87. Child care	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others
88. Dependent care subsidy	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others
89. Housing subsidy	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others
90. Funeral or bereavement leave	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others
91. Membership in recreation programs	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> 0% <input type="radio"/> 1 – 25% <input type="radio"/> 26 – 50% <input type="radio"/> 51 – 75% <input type="radio"/> 76 – 99% <input type="radio"/> 100% <input type="radio"/> Part of cafeteria plan	<input type="radio"/> All direct care workers <input type="radio"/> Full-time direct care workers only <input type="radio"/> Full-time direct care workers and some others

The following questions deal with the current composition of your workers.

Please enter the total number of hours worked in the last pay period for all **regular** employees in each category. If none, please indicate "0".

94. Direct Care Workers: _____

95. How often are these employees paid?

RNs	<input type="radio"/> Weekly	<input type="radio"/> Every two weeks	<input type="radio"/> Twice a month	<input type="radio"/> Monthly	<input type="radio"/> Other
LPNs	<input type="radio"/> Weekly	<input type="radio"/> Every two weeks	<input type="radio"/> Twice a month	<input type="radio"/> Monthly	<input type="radio"/> Other
DCWs	<input type="radio"/> Weekly	<input type="radio"/> Every two weeks	<input type="radio"/> Twice a month	<input type="radio"/> Monthly	<input type="radio"/> Other

Please enter the total number of hours worked in the last pay period for all **temporary, contract and/or per diem** staff in each category. If none, please indicate "0".

96. RNs: _____

97. LPNs: _____

98. Direct Care Workers: _____

99. How often are these employees paid?

RNs	<input type="radio"/> Weekly	<input type="radio"/> Every two weeks	<input type="radio"/> Twice a month	<input type="radio"/> Monthly	<input type="radio"/> Other
LPNs	<input type="radio"/> Weekly	<input type="radio"/> Every two weeks	<input type="radio"/> Twice a month	<input type="radio"/> Monthly	<input type="radio"/> Other
DCWs	<input type="radio"/> Weekly	<input type="radio"/> Every two weeks	<input type="radio"/> Twice a month	<input type="radio"/> Monthly	<input type="radio"/> Other

100. Indicate the percentage of your current **direct care workers** in each of the following racial/ethnic groups. If none, please indicate "0".

- African-American or Black: _____%
- Caucasian: _____%
- Hispanic or Latino: _____%
- Asian: _____%
- American Indian or Alaska Native: _____%
- Native Hawaiian or other Pacific Islander: _____%
- Other: _____%

101. Indicate the percentage of your current **LPNs/RNs** in each of the following racial/ethnic groups. If none, please indicate "0".

- African-American or Black: _____%
- Caucasian: _____%
- Hispanic or Latino: _____%
- Asian: _____%
- American Indian or Alaska Native: _____%
- Native Hawaiian or other Pacific Islander: _____%
- Other: _____%

The following question deals with the current composition of your patients/residents/clients.

102. Indicate the percentage of your current **patient/resident/client population** in each of the following racial/ethnic groups. If none, please indicate "0".

- African-American or Black: _____%
- Caucasian: _____%
- Hispanic or Latino: _____%
- Asian: _____%
- American Indian or Alaska Native: _____%
- Native Hawaiian or other Pacific Islander: _____%
- Other: _____%

103. How many work-related illnesses and injuries have you reported to OSHA in the past 12 months for: (If none, please indicate "0".)

- RNs: _____
- LPNs: _____
- Direct Care Workers: _____

104. Thank you for taking the time to complete this important survey. Please indicate any questions or concerns you have below.

Thank you for taking the time to complete this survey. If you have any concerns, please direct them to:

Survey Research Center
The Pennsylvania State University
327 Pond Lab
University Park, PA 16802
1-800-648-3617
bjbcmis@pop.psu.edu

Appendix B. Direct Care Worker Survey

1a. How long have you worked as a direct care worker?
 _____ years _____ months

1b. How long have you worked as a direct care worker for this employer?
 _____ years _____ months

2. Overall, how satisfied are you with your job?

- 1-Extremely satisfied
- 2-Somewhat satisfied
- 3-Somewhat dissatisfied
- 4-Extremely dissatisfied
- 5-Don't know

3. Think about your job right now. Fill in the circle that best indicates how much, if at all, each of the following is a rewarding part of your job. Is it not at all rewarding, somewhat rewarding, very rewarding, or extremely rewarding?

	Does not apply to my job	Not at all rewarding	Somewhat rewarding	Very rewarding	Extremely rewarding
a. Helping others is...		1	2	3	4
b. Being able to work on your own is ..		1	2	3	4
c. Getting credit for your work is...		1	2	3	4
d. Finding your work interesting is...		1	2	3	4
e. Liking your coworkers is...		1	2	3	4
f. Making a difference in other people's lives is...		1	2	3	4
g. Feeling a sense of accomplishment and competence from doing your job is...		1	2	3	4
h. Having your job fit your skills is...					
i. Having the chance to learn new things is...		1	2	3	4
j. Being valued by supervisors and management is...		1	2	3	4
k. Being needed by others is...		1	2	3	4
l. Having the power you need to get your job done without getting permission from someone else is...		1	2	3	4
m. Having a lot of different things to do is...		1	2	3	4

n. Getting support from coworkers is...		1	2	3	4
o. Having your job fit your interests is...		1	2	3	4
p. The income you earn is...		1	2	3	4
q. Being valued by residents or clients and their families is...		1	2	3	4
r. Having the freedom to decide how to do your work is...		1	2	3	4
s. The team spirit in your work group is...		1	2	3	4

4. Continue thinking about your job right now. Indicate how much, if at all, each of the following is a problem or concern in your job. Is it not at all a problem, somewhat a problem, a big problem, or an extremely big problem?

	Not at all a problem	Somewhat a problem	A big problem	An extremely big problem
a. Having too much work to do is...	1	2	3	4
b. Having to deal with emotionally hard situations is...	1	2	3	4
c. Not having support from your supervisor in your job is...	1	2	3	4
d. Finding your job boring or doing too much of the same thing is...				
e. Having your job take too much out of you is...	1	2	3	4
f. Having little chance to get promoted is...	1	2	3	4
g. Dealing with unrealistic expectations from your supervisor for your work is...	1	2	3	4
h. Not having the job use your skills is...	1	2	3	4
i. Catching an illness is...	1	2	3	4
j. Not having the chance to develop job skills is...	1	2	3	4
k. Not being valued by your supervisor for your work is...	1	2	3	4
l. Being on your own too much is...	1	2	3	4
m. Getting hurt is...	1	2	3	4
o. The physical conditions (equipment, temperature, smell, etc.) at your job is...	1	2	3	4
p. Not having enough help when you need it is...	1	2	3	4
q. Facing difficulties because of your race or ethnic background is...	1	2	3	4

r. Facing difficulties because of your sex is...	1	2	3	4
s. That your supervisor is not good at her job is...	1	2	3	4
t. That the job is physically hard is...	1	2	3	4
u. The time it takes to get work is . . .	1	2	3	4

4.

5. Please think about your direct supervisor. Indicate if you strongly disagree, somewhat disagree, somewhat agree, or strongly agree with each statement.

My supervisor...	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree
a. provides clear instructions when assigning work.	01	02	03	04
b. is open to new and different ideas, such as a new or better way of dealing with resident or client care.				
c. listens to me when I am worried about a resident's or client's care.	01	02	03	04
d. supports direct care workers working in groups or teams with other health care workers such as physical therapists, dieticians, RNs, LPNs or other nurses	01	02	03	04
e. disciplines or removes other direct care workers who do not do their jobs well or their share of the work.	01	02	03	04
f. tells me when I am doing a good job.	01	02	03	04
g. gives me useful criticism to help me improve my work	01	02	03	04
h. is interested in my development in my job.	01	02	03	04

6. In general, are you encouraged by supervisors to discuss the care and well-being of residents and/or clients with their families?

Yes

No

7. Please indicate the degree to which you agree with the following statements by filling in the appropriate circle.

	Not at all agree	Agree Somewhat	Agree a great deal
a. My supervisor respects me as part of the health care team?	01	02	03
b. Residents or clients respects you as part of the health care team?	01	02	03
c. Residents' or clients' families respects you as part of the health care team?	01	02	03

8. For each statement, please indicate if you strongly disagree, somewhat disagree, somewhat agree, or strongly agree.

	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree
a. I have learned the skills necessary to do my job well.	01	02	03	04
b. I have the opportunity to work in teams	01	02	03	04
c. I am confident in my ability to do my job	01	02	03	04
d. I could get a job that paid more than this job.	01	02	03	04

9. The following is a list of training program topics that are sometimes offered by employers. Please indicate whether or not you have attended each of the following program topics in the past 2 years as part of an inservice or formal training program offered by your employer. If you attended the program, please indicate how useful the program was to you by filling in the appropriate circle.

	Offered at your workplace ?		If yes, how useful was it??			
	Yes	No	Not at all useful	Somewhat useful	Very useful	Extremely useful
a. resident or client care skills such as helping with bathing, eating, dressing.						
b. specialized clinical training such as caring for bed sores, pain management, incontinence.						
c. communicating with residents or clients						
d. communicating with coworkers						
e. working with residents' or						

clients' family members						
f. working with supervisors						
g. recording residents' or clients' information						
h. organizing your work tasks.						
i. how to mentor other direct care workers?						
j. how to work in teams.						
k. Dealing with problems at work.						
l. Dealing with personal problems outside of work such as money management, parenting skills, etc.						
l. other (Please specify in the box below)						

10. How likely is it that you will leave this job in the next year?

1. Very likely
2. Somewhat likely
3. Not at all likely

11. How often do you think about quitting?

1. All of the time
2. Some of the time
3. Rarely
4. Never

12. When you think about your job as a direct care worker, do you view it as:

- A short-term job
- A long-term career

13. Is your employer currently doing anything out of the ordinary to improve your job or to encourage direct care workers to keep working there?

- Yes No Don't know

14. What is the single most important thing your employer could do to improve your job as a direct care worker?

15. If a friend or family member needed care and asked your advice about getting care from the place where you work, would you..

- Definitely recommend it
- Probably recommend it
- Probably not recommend it
- Definitely not recommend it

16. If a friend or family member asked your advice about taking a direct care worker job at the place where you work, would you..

- Definitely recommend it
- Probably recommend it
- Probably not recommend it
- Definitely not recommend it

17. In your current job with this employer, what is your hourly wage?

\$_____ per hour

18. Do you receive health insurance through this employer?

- Yes, I receive health insurance through my employer
- My employer offers health insurance to me, but I am not enrolled.
- My employer does not offer health insurance to me

19. Do you currently work for pay at another job as a direct care worker?

- Yes
- No

20. What is your age?

- Less than 25 years old
- 25-34
- 35-44
- 45-54
- 55-64
- 65 and older

21. What is your sex?

- Female
- Male

22. Did you earn a high school diploma or GED?

- Yes
- No

If yes, what is your highest level of education?

- High School or GED
- Some college/trade school
- College graduate or post-college

23. Please indicate your race/ethnicity (choose all that apply)

White

Hispanic or Latina/Latino

African American or Black

American Indian or Alaska Native

Asian

Native Hawaiian or Pacific Islander

Other _____

24. On your current job, have you ever been discriminated against because of your race or ethnic origin?

Yes

No

APPENDIX C. FULL MODELS

Cross-sectional Results

Management Practices on Organizational Commitment

Recommend Organization for a Job

Table 1. Effects of Work Design on a Direct Care Worker's Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	2.564****	0.176	213.167	0.0000
Younger	-0.070	0.081	0.738	0.3904
Middle-aged	-0.142**	0.061	5.460	0.0195
Race	0.002	0.059	0.001	0.9794
Education	-0.149****	0.051	8.467	0.0036
Length of employment	-0.007*	0.004	2.905	0.0883
Nursing facility	-0.273****	0.057	22.834	0.0000
Assisted-living	-0.245**	0.101	5.933	0.0149
Work Design	0.047	0.059	0.621	0.4308

Likelihood Ratio Chi-Square=47.166, $p=0.000$; AIC= 2079.271

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 2. Effects of Participation in Care Planning on a Direct Care Worker's Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	2.560****	0.133	368.785	0.0000
Younger	-0.067	0.081	0.689	0.4067
Middle-aged	-0.142**	0.061	5.473	0.0193
Race	-0.001	0.057	0.000	0.9862
Education	-0.149****	0.051	8.451	0.0036
Length of employment	-0.007**	0.004	2.856	0.0910
Nursing facility	-0.263****	0.056	22.109	0.0000
Assisted-living	-0.235****	0.089	6.955	0.0084
Participation in care planning	0.044	0.035	1.582	0.2085

Likelihood Ratio Chi-Square=48.207, $p=0.000$; AIC= 2078.230

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 3. Effects of Communication about Tasks on a Direct Care Worker's Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	2.702****	0.145	345.300	0.0000
Younger	-0.064	0.082	0.605	0.4367
Middle-aged	-0.139**	0.062	5.132	0.0235
Race	-0.012	0.058	0.044	0.8337
Education	-0.150***	0.051	8.586	0.0034
Length of employment	-0.007*	0.004	2.737	0.0981
Nursing facility	-0.258****	0.063	16.687	0.0000
Assisted-living	-0.203**	0.102	3.967	0.0464
Communication about tasks	-0.009	0.047	0.039	0.8441

Likelihood Ratio Chi-Square=46.454, $p=0.000$; AIC= 2079.982

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 4. Effects of Feedback on a Direct Care Worker's Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	2.487****	0.139	317.851	0.0000
Younger	-0.071	0.081	0.775	0.3787
Middle-aged	-0.140**	0.061	5.262	0.0218
Race	0.001	0.056	0.001	0.9809
Education	-0.147***	0.051	8.243	0.0041
Length of employment	-0.007	0.004	2.526	0.1120
Nursing facility	-0.255****	0.056	20.383	0.0000
Assisted-living	-0.259***	0.091	8.067	0.0045
Feedback	0.085*	0.048	3.081	0.0792

Likelihood Ratio Chi-Square=50.077, $p=0.000$; AIC=

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 5. Effects of Flex time on a Direct Care Worker’s Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	2.682****	0.096	774.760	0.0000
Younger	-0.066	0.082	0.646	0.4217
Middle-aged	-0.141**	0.061	5.280	0.0216
Race	-0.010	0.058	0.033	0.8558
Education	-0.150***	0.051	8.621	0.0033
Length of employment	-0.007*	0.004	2.727	0.0987
Nursing facility	-0.264****	0.057	21.126	0.0000
Assisted-living	-0.212**	0.087	5.894	0.0152
Flex time	-0.001	0.023	0.002	0.9627

Likelihood Ratio Chi-Square=46.416, p=0.000; AIC= 2076.360

*p≤0.10, **p≤0.05, ***p≤0.01, ****p≤0.001

Table 6. Effects of Having a Career Ladder Program to Become a Higher-Level Direct Care Worker on a Direct Care Worker’s Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	2.641****	0.083	1,019.070	0.0000
Younger	-0.068	0.081	0.691	0.4057
Middle-aged	-0.143**	0.061	5.491	0.0191
Race	-0.010	0.055	0.033	0.8559
Education	-0.156***	0.051	9.244	0.0024
Length of employment	-0.007	0.004	2.630	0.1048
Nursing facility	-0.272****	0.056	23.589	0.0000
Assisted-living	-0.224***	0.086	6.733	0.0095
Higher-level direct care worker	0.084*	0.051	2.757	0.0968

Likelihood Ratio Chi-Square=49.193, p=0.000; AIC= 2077.244

*p≤0.10, **p≤0.05, ***p≤0.01, ****p≤0.001

Table 7. Effects of Having a Career Ladder Program to Become a Licensed Practical Nurse on a Direct Care Worker's Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	2.686****	0.077	1,212.407	0.0000
Younger	-0.064	0.082	0.607	0.4359
Middle-aged	-0.138**	0.061	5.039	0.0248
Race	-0.014	0.056	0.065	0.7991
Education	-0.150***	0.051	8.546	0.0035
Length of employment	-0.007*	0.004	2.712	0.0996
Nursing facility	-0.224****	0.068	11.033	0.0009
Assisted-living	-0.183*	0.094	3.805	0.0511
Licensed Practical Nurse	-0.076	0.070	1.198	0.2738

Likelihood Ratio Chi-Square=47.897, $p=0.000$; AIC= 2078.540

* $p\leq 0.10$, ** $p\leq 0.05$, *** $p\leq 0.01$, **** $p\leq 0.001$

Table 8. Effects of Peer Mentoring on a Direct Care Worker's Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	2.663****	0.084	1,007.349	0.0000
Younger	-0.065	0.081	0.638	0.4244
Middle-aged	-0.141**	0.061	5.364	0.0206
Race	-0.009	0.056	0.028	0.8672
Education	-0.150***	0.051	8.634	0.0033
Length of employment	-0.007*	0.004	2.808	0.0938
Nursing facility	-0.279****	0.061	21.032	0.0000
Assisted-living	-0.212**	0.086	6.028	0.0141
Peer mentor	0.038	0.057	0.446	0.5043

Likelihood Ratio Chi-Square=46.868, $p=0.000$; AIC= 2079.568

* $p\leq 0.10$, ** $p\leq 0.05$, *** $p\leq 0.01$, **** $p\leq 0.001$

Table 9. Effects of Direct Care Worker Training on a Direct Care Worker's Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	2.586****	0.101	661.157	0.0000
Younger	-0.071	0.082	0.759	0.3836
Middle-aged	-0.145**	0.061	5.542	0.0186
Race	-0.004	0.056	0.005	0.9455
Education	-0.153***	0.051	8.947	0.0028
Length of employment	-0.007*	0.004	2.914	0.0878
Nursing facility	-0.261****	0.056	21.844	0.0000
Assisted-living	-0.216**	0.086	6.281	0.0122
Direct care worker training	0.021	0.015	1.976	0.1598

Likelihood Ratio Chi-Square=48.332, $p=0.000$; AIC=2078.104

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 10. Effects of Supervisor Training on a Direct Care Worker's Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	2.545****	0.107	568.777	0.0000
Younger	-0.061	0.082	0.550	0.4582
Middle-aged	-0.137**	0.061	5.003	0.0253
Race	0.004	0.056	0.004	0.9472
Education	-0.151***	0.051	8.721	0.0031
Length of employment	-0.007	0.004	2.637	0.1044
Nursing facility	-0.244****	0.057	18.625	0.0000
Assisted-living	-0.215**	0.086	6.177	0.0129
Supervisor training	0.029*	0.016	3.393	0.0655

Likelihood Ratio Chi-Square=50.096, $p=0.000$; AIC=2076.341

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Intent to Leave

Table 11. Effects of Work Design on a Direct Care Worker’s Intent to Leave controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.454****	0.120	14.309	0.0002
Younger	0.069	0.062	1.225	0.2684
Middle-aged	-0.044	0.046	0.925	0.3361
Race	0.069	0.043	2.592	0.1074
Education	0.050	0.039	1.589	0.2074
Length of employment	-0.006**	0.003	4.862	0.0275
Nursing facility	0.015	0.044	0.113	0.7371
Assisted-living	0.025	0.073	0.117	0.7328
Work Design	-0.045	0.044	1.017	0.3133

Likelihood Ratio Chi-Square=18.594, *p*=0.017; AIC=1607.778

p*≤0.10, *p*≤0.05, ****p*≤0.01, *****p*≤0.001

Table 12. Effects of Participation in Care Planning on a Direct Care Worker’s Intent to Leave controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.367****	0.090	16.634	0.0000
Younger	0.065	0.062	1.107	0.2928
Middle-aged	-0.046	0.046	1.001	0.3170
Race	0.078*	0.042	3.419	0.0644
Education	0.050	0.039	1.622	0.2028
Length of employment	-0.007	0.003	5.090	0.0241
Nursing facility	0.006	0.043	0.020	0.8876
Assisted-living	-0.002	0.065	0.001	0.9771
Participation in care planning	-0.009	0.026	0.111	0.7385

Likelihood Ratio Chi-Square=17.549, *p*=0.025; AIC=1608.823

p*≤0.10, *p*≤0.05, ****p*≤0.01, *****p*≤0.001

Table 13. Effects of Communication about Tasks on a Direct Care Worker's Intent to Leave controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.415****	0.100	17.362	0.0000
Younger	0.070	0.063	1.242	0.2651
Middle-aged	-0.043	0.047	0.842	0.3587
Race	0.073*	0.042	2.974	0.0846
Education	0.050	0.039	1.613	0.2040
Length of employment	-0.006**	0.003	4.896	0.0269
Nursing facility	0.024	0.050	0.236	0.6270
Assisted-living	0.022	0.075	0.083	0.7727
Communication about tasks	-0.029	0.036	0.641	0.4233

Likelihood Ratio Chi-Square=18.105, $p=0.020$; AIC=1608.268

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 14. Effects of Feedback on a Direct Care Worker's Intent to Leave controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.456****	0.103	19.724	0.0000
Younger	0.068	0.061	1.224	0.2686
Middle-aged	-0.047	0.046	1.043	0.3070
Race	0.073*	0.042	3.002	0.0832
Education	0.048	0.039	1.507	0.2195
Length of employment	-0.007**	0.003	5.423	0.0199
Nursing facility	0.001	0.042	0.000	0.9841
Assisted-living	0.021	0.067	0.099	0.7534
Feedback	-0.050	0.037	1.818	0.1775

Likelihood Ratio Chi-Square=19.531, $p=0.012$; AIC=1606.842

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 15. Effects of Flex Time on a Direct Care Worker's Intent to Leave controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	S.E.	Wald Chi-Square	<i>p</i>
Intercept	0.361	0.070	26.818	0.0000
Younger	0.063	0.062	1.045	0.3067
Middle-aged	-0.047	0.046	1.062	0.3029
Race	0.075	0.043	3.052	0.0806
Education	0.051	0.039	1.654	0.1985
Length of employment	-0.006	0.003	4.912	0.0267
Nursing facility	0.002	0.044	0.002	0.9672
Assisted-living	-0.004	0.063	0.005	0.9463
Flex time	-0.008	0.017	0.216	0.6422

Likelihood Ratio Chi-Square=17.662, *p*=0.024; AIC=1608.710

p*≤0.10, *p*≤0.05, ****p*≤0.01, *****p*≤0.001

Table 16. Effects of Having a Career Ladder Program to Become a Higher-Level Direct Care Worker on a Direct Care Worker's Intent to Leave controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	S.E.	Wald Chi-Square	<i>p</i>
Intercept	0.364****	0.061	36.016	0.0000
Younger	0.066	0.061	1.141	0.2854
Middle-aged	-0.045	0.046	0.962	0.3267
Race	0.080*	0.042	3.580	0.0585
Education	0.054	0.040	1.816	0.1778
Length of employment	-0.007**	0.003	5.192	0.0227
Nursing facility	0.011	0.043	0.061	0.8048
Assisted-living	0.000	0.063	0.000	0.9985
Higher-level direct care worker	-0.045	0.039	1.328	0.2492

Likelihood Ratio Chi-Square=18.789, *p*=0.016; AIC=1607.583

p*≤0.10, *p*≤0.05, ****p*≤0.01, *****p*≤0.001

Table 17. Effects of Having a Career Ladder Program to Become a Licensed Practical Nurse on a Direct Care Worker's Intent to Leave controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.341****	0.058	34.151	0.0000
Younger	0.064	0.062	1.076	0.2995
Middle-aged	-0.047	0.046	1.055	0.3044
Race	0.081*	0.042	3.753	0.0527
Education	0.050	0.039	1.630	0.2018
Length of employment	-0.007**	0.003	5.175	0.0229
Nursing facility	-0.007	0.050	0.020	0.8863
Assisted-living	-0.016	0.066	0.061	0.8044
Licensed Practical Nurse	0.026	0.048	0.286	0.5925

Likelihood Ratio Chi-Square=17.718, $p=0.023$; AIC=1608.655

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 18. Effects of Peer Mentoring on a Direct Care Worker's Intent to Leave controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.367****	0.061	36.016	0.0000
Younger	0.064	0.061	1.087	0.2972
Middle-aged	-0.045	0.046	0.968	0.3251
Race	0.079*	0.042	3.512	0.0609
Education	0.051	0.039	1.669	0.1964
Length of employment	-0.006**	0.003	4.973	0.0257
Nursing facility	0.028	0.046	0.362	0.5473
Assisted-living	-0.007	0.062	0.013	0.9090
Peer mentor	-0.054	0.044	1.499	0.2208

Likelihood Ratio Chi-Square=18.980, $p=0.015$; AIC=1607.392

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 19. Effects of Direct Care Worker Training on a Direct Care Worker's Intent to Leave controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.468****	0.074	39.591	0.0000
Younger	0.072	0.062	1.373	0.2413
Middle-aged	-0.041	0.046	0.780	0.3770
Race	0.072*	0.042	2.938	0.0865
Education	0.054	0.039	1.871	0.1713
Length of employment	-0.006**	0.003	4.697	0.0302
Nursing facility	0.002	0.042	0.003	0.9539
Assisted-living	-0.001	0.062	0.000	0.9863
Direct care worker training	-0.028**	0.012	5.765	0.0163

Likelihood Ratio Chi-Square=23.199, $p=0.003$; AIC=1603.174

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 20. Effects of Supervisor Training on a Direct Care Worker's Intent to Leave controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.443****	0.079	31.595	0.0000
Younger	0.061	0.062	0.982	0.3218
Middle-aged	-0.049	0.046	1.156	0.2823
Race	0.070*	0.042	2.734	0.0982
Education	0.051	0.039	1.685	0.1943
Length of employment	-0.007**	0.003	5.339	0.0209
Nursing facility	-0.008	0.042	0.038	0.8447
Assisted-living	-0.005	0.062	0.005	0.9413
Supervisor training	-0.021*	0.012	3.254	0.0712

Likelihood Ratio Chi-Square=30.066, $p=0.000$; AIC=2347.244

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Think about Quitting

Table 21. Effects of Work Design on a Direct Care Worker’s Thoughts about Quitting controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.907****	0.185	24.006	0.0000
Younger	0.167*	0.095	3.118	0.0774
Middle-aged	0.118*	0.071	2.784	0.0952
Race	0.026	0.066	0.152	0.6967
Education	0.099*	0.059	2.816	0.0933
Length of employment	0.009*	0.005	3.608	0.0575
Nursing facility	0.257****	0.066	15.239	0.0001
Assisted-living	0.182*	0.104	3.051	0.0807
Work Design	-0.049	0.063	0.588	0.4431

Likelihood Ratio Chi-Square=30.066, p=0.000; AIC=2347.244

*p≤0.10, **p≤0.05, ***p≤0.01, ****p≤0.001

Table 22. Effects of Participation in Care Planning on a Direct Care Worker’s Thoughts about Quitting controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.773****	0.143	29.094	0.0000
Younger	0.162*	0.095	2.949	0.0860
Middle-aged	0.116	0.071	2.672	0.1021
Race	0.039	0.065	0.359	0.5492
Education	0.100*	0.059	2.868	0.0903
Length of employment	0.009**	0.005	3.475	0.0623
Nursing facility	0.247****	0.065	14.562	0.0001
Assisted-living	0.145	0.097	2.218	0.1364
Participation in care planning	0.005	0.039	0.018	0.8937

Likelihood Ratio Chi-Square=29.478, p=0.000; AIC=2347.831

*p≤0.10, **p≤0.05, ***p≤0.01, ****p≤0.001

Table 23. Effects of Communication about Tasks on a Direct Care Worker's Thoughts about Quitting controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.785****	0.159	24.262	0.0000
Younger	0.163*	0.096	2.890	0.0892
Middle-aged	0.116	0.071	2.658	0.1031
Race	0.038	0.066	0.330	0.5656
Education	0.100*	0.059	2.861	0.0908
Length of employment	0.009*	0.005	3.470	0.0625
Nursing facility	0.247****	0.072	11.689	0.0006
Assisted-living	0.147	0.108	1.858	0.1728
Communication about tasks	0.001	0.051	0.000	0.9853

Likelihood Ratio Chi-Square=29.460, $p=0.000$; AIC=2347.850

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 24. Effects of Feedback on a Direct Care Worker's Thoughts about Quitting controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	1.104****	0.153	52.355	0.0000
Younger	0.172*	0.094	3.366	0.0665
Middle-aged	0.115	0.070	2.674	0.1020
Race	0.019	0.065	0.087	0.7677
Education	0.094	0.059	2.571	0.1088
Length of employment	0.009*	0.005	3.237	0.0720
Nursing facility	0.233****	0.065	12.824	0.0003
Assisted-living	0.225**	0.097	5.395	0.0202
Feedback	-0.139***	0.052	7.243	0.0071

Likelihood Ratio Chi-Square=36.858, $p=0.000$; AIC=2340.451

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 25. Effects of Flex Time on a Direct Care Worker’s Thoughts about Quitting controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.810****	0.110	54.460	0.0000
Younger	0.161*	0.095	2.876	0.0899
Middle-aged	0.115	0.071	2.616	0.1058
Race	0.032	0.066	0.238	0.6258
Education	0.100*	0.059	2.883	0.0895
Length of employment	0.009*	0.005	3.592	0.0581
Nursing facility	0.242****	0.067	13.209	0.0003
Assisted-living	0.150	0.096	2.478	0.1154
Flex time	-0.010	0.025	0.159	0.6904

Likelihood Ratio Chi-Square=29.623, p=0.000; AIC=2347.686

*p≤0.10, **p≤0.05, ***p≤0.01, ****p≤0.001

Table 26. Effects of Having a Career Ladder Program to Become a Higher-Level Direct Care Worker on a Direct Care Worker’s Thoughts about Quitting controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.819****	0.097	70.659	0.0000
Younger	0.165*	0.094	3.045	0.0810
Middle-aged	0.118*	0.071	2.781	0.0954
Race	0.038	0.065	0.340	0.5595
Education	0.104*	0.059	3.150	0.0759
Length of employment	0.009*	0.005	3.384	0.0658
Nursing facility	0.254****	0.065	15.314	0.0001
Assisted-living	0.158	0.096	2.679	0.1017
Higher-level direct care worker	-0.070	0.058	1.450	0.2286

Likelihood Ratio Chi-Square=30.886, p=0.000; AIC=2346.423

*p≤0.10, **p≤0.05, ***p≤0.01, ****p≤0.001

Table 27. Effects of Having a Career Ladder Program to Become a Licensed Practical Nurse on a Direct Care Worker's Thoughts about Quitting controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.774****	0.093	70.030	0.0000
Younger	0.159*	0.094	2.860	0.0908
Middle-aged	0.110	0.070	2.451	0.1175
Race	0.046	0.065	0.510	0.4753
Education	0.099*	0.059	2.816	0.0934
Length of employment	0.009*	0.005	3.455	0.0631
Nursing facility	0.170**	0.074	5.221	0.0223
Assisted-living	0.090	0.101	0.792	0.3735
Licensed Practical Nurse	0.151**	0.073	4.291	0.0383

Likelihood Ratio Chi-Square=33.784, $p=0.000$; AIC=2343.525

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 28. Effects of Peer Mentoring on a Direct Care Worker's Thoughts about Quitting controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.817****	0.099	68.123	0.0000
Younger	0.162*	0.094	2.947	0.0860
Middle-aged	0.117*	0.071	2.766	0.0963
Race	0.037	0.065	0.320	0.5719
Education	0.100*	0.059	2.901	0.0885
Length of employment	0.009*	0.005	3.548	0.0596
Nursing facility	0.274****	0.071	14.949	0.0001
Assisted-living	0.147	0.096	2.355	0.1249
Peer mentor	-0.066	0.066	1.000	0.3174

Likelihood Ratio Chi-Square=30.488, $p=0.000$; AIC=2346.821

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 29. Effects of Direct Care Worker Training on a Direct Care Worker's Thoughts about Quitting controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.884****	0.119	55.041	0.0000
Younger	0.169*	0.095	3.165	0.0752
Middle-aged	0.120*	0.071	2.871	0.0902
Race	0.031	0.065	0.234	0.6283
Education	0.102*	0.059	3.015	0.0825
Length of employment	0.009*	0.005	3.650	0.0561
Nursing facility	0.244****	0.065	14.328	0.0002
Assisted-living	0.152	0.096	2.517	0.1126
Direct care worker training	-0.021	0.017	1.587	0.2077

Likelihood Ratio Chi-Square=30.974, $p=0.000$; AIC=2346.336

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 30. Effects of Supervisor Training on a Direct Care Worker's Thoughts about Quitting controlling for Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.904****	0.124	53.146	0.0000
Younger	0.159*	0.095	2.815	0.0934
Middle-aged	0.113	0.071	2.540	0.1110
Race	0.026	0.066	0.156	0.6931
Education	0.100*	0.059	2.913	0.0878
Length of employment	0.009*	0.005	3.426	0.0642
Nursing facility	0.230****	0.066	12.187	0.0005
Assisted-living	0.150	0.096	2.447	0.1178
Supervisor training	-0.025	0.017	2.008	0.1565

Likelihood Ratio Chi-Square=31.519, $p=0.000$; AIC=2345.791

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Type of Long-Term Setting as a Moderator

Recommend Organization for a Job

Table 31. Moderating Effects of Being a Nursing Facility on the Relationship between Communication about Tasks and a Direct Care Worker's Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics

Predictors	Coefficient	S.E.	Wald Chi-Square	<i>p</i>
Intercept	2.624****	0.160	268.611	0.0000
Younger	-0.061	0.082	0.562	0.4535
Middle-aged	-0.140**	0.061	5.221	0.0223
Race	-0.014	0.058	0.062	0.8030
Education	-0.151***	0.051	8.632	0.0033
Length of employment	-0.006	0.004	2.474	0.1157
Nursing facility	-0.185**	0.089	4.361	0.0368
Assisted-living	-0.235**	0.106	4.943	0.0262
Communication about tasks	0.023	0.054	0.185	0.6667
Nursing facility*Communication about tasks	-0.128	0.111	1.342	0.2468

Likelihood Ratio Chi-Square=47.901, $p=0.000$; AIC=2080.536

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 32. Moderating Effects of Being a Nursing Facility on the Relationship between Feedback and a Direct Care Worker's Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics

Predictors	Coefficient	S.E.	Wald Chi-Square	<i>p</i>
Intercept	2.352***	0.153	235.224	0.0000
Younger	-0.061	0.081	0.574	0.4486
Middle-aged	-0.140**	0.061	5.347	0.0208
Race	-0.016	0.056	0.084	0.7718
Education	-0.150***	0.051	8.629	0.0033
Length of employment	-0.006	0.004	2.295	0.1298
Nursing facility	-0.143*	0.079	3.295	0.0695
Assisted-living	-0.299***	0.093	10.386	0.0013
Feedback	0.154***	0.058	7.094	0.0077
Nursing facility*Feedback	-0.222**	0.102	4.759	0.0292

Likelihood Ratio Chi-Square=55.408, $p=0.000$; AIC=2073.029

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 33. Moderating Effects of Being a Home Care Agency on the Relationship between Participation in Care Planning and a Direct Care Worker's Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	2.340****	0.151	240.117	0.0000
Younger	-0.067	0.081	0.676	0.4111
Middle-aged	-0.144**	0.061	5.637	0.0176
Race	0.004	0.055	0.006	0.9399
Education	-0.144***	0.051	8.050	0.0046
Length of employment	-0.007*	0.004	3.097	0.0785
Home Care	0.197**	0.092	4.553	0.0329
Participation in care planning	0.029	0.040	0.538	0.4634
Home Care*Participation in care planning	0.078	0.096	0.664	0.4152

Likelihood Ratio Chi-Square=48.788, $p=0.000$; AIC=2077.649

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 34. Moderating Effects of Being a Home Care Agency on the Relationship between Flex Time and a Direct Care Worker's Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	2.454****	0.106	531.772	0.0000
Younger	-0.061	0.082	0.554	0.4569
Middle-aged	-0.139**	0.061	5.175	0.0229
Race	-0.003	0.056	0.004	0.9514
Education	-0.150***	0.051	8.652	0.0033
Length of employment	-0.008*	0.004	3.544	0.0598
Home Care	0.175**	0.087	4.070	0.0436
Flex time	-0.016	0.028	0.339	0.5606
Home Care*Flex time	0.114	0.101	1.276	0.2586

Likelihood Ratio Chi-Square=47.286, $p=0.000$; AIC=2079.151

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 35. Moderating Effects of Being a Nursing Facility on the Relationship between Becoming a Higher-Level Direct Care Worker and a Direct Care Worker's Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	2.660****	0.085	988.129	0.0000
Younger	-0.070	0.081	0.732	0.3922
Middle-aged	-0.142**	0.061	5.388	0.0203
Race	-0.016	0.055	0.088	0.7665
Education	-0.155***	0.051	9.155	0.0025
Length of employment	-0.006	0.004	2.435	0.1186
Nursing facility	-0.320***	0.086	13.817	0.0002
Assisted-living	-0.218**	0.087	6.345	0.0118
Higher-level direct care worker	0.051	0.062	0.684	0.4083
Nursing facility*Higher-level direct care worker	0.084	0.107	0.619	0.4315

Likelihood Ratio Chi-Square=49.845, $p=0.000$; AIC=2078.592

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 36. Moderating Effects of Being a Nursing Facility on the Relationship between Becoming a Licensed Practical Nurse and a Direct Care Worker's Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	2.694****	0.077	1,237.493	0.0000
Younger	-0.069	0.082	0.706	0.4007
Middle-aged	-0.136**	0.061	4.959	0.0260
Race	-0.027	0.055	0.230	0.6316
Education	-0.152***	0.051	8.892	0.0029
Length of employment	-0.006	0.004	2.286	0.1305
Nursing facility	-0.309***	0.084	13.545	0.0002
Assisted-living	-0.175*	0.094	3.426	0.0642
Licensed Practical Nurse	-0.091	0.071	1.673	0.1958
Nursing facility*Licensed Practical Nurse	0.151*	0.088	2.905	0.0883

Likelihood Ratio Chi-Square=51.317, $p=0.000$; AIC=2077.120

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 37. Moderating Effects of Being a Nursing Facility on the Relationship between Peer Mentoring and a Direct Care Worker's Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	2.671****	0.083	1,023.591	0.0000
Younger	-0.070	0.081	0.734	0.3916
Middle-aged	-0.141**	0.061	5.314	0.0212
Race	-0.020	0.055	0.125	0.7240
Education	-0.153***	0.051	8.944	0.0028
Length of employment	-0.006	0.004	2.425	0.1194
Nursing facility	-0.357****	0.081	19.393	0.0000
Assisted-living	-0.209**	0.086	5.891	0.0152
Peer mentor	0.031	0.057	0.300	0.5838
Nursing facility*Peer mentor	0.133	0.088	2.291	0.1301

Likelihood Ratio Chi-Square=49.540, $p=0.000$; AIC=2078.897

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 38. Moderating Effects of Being a Nursing Facility on the Relationship between Direct Care Worker Training and a Direct Care Worker's Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	2.604****	0.102	652.220	0.0000
Younger	-0.072	0.082	0.786	0.3752
Middle-aged	-0.143**	0.061	5.388	0.0203
Race	0.001	0.056	0.000	0.9911
Education	-0.150***	0.051	8.588	0.0034
Length of employment	-0.007*	0.004	2.724	0.0988
Nursing facility	-0.297****	0.085	12.277	0.0005
Assisted-living	-0.215**	0.086	6.194	0.0128
Direct care worker training	0.015	0.016	0.870	0.3510
Nursing facility*Direct care worker training	0.057	0.100	0.325	0.5688

Likelihood Ratio Chi-Square=48.667, $p=0.000$; AIC=2079.770

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 39. Moderating Effects of Being a Nursing Facility on the Relationship between Supervisor Training and a Direct Care Worker’s Recommendation of the Organization for a Job controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	2.520****	0.120	440.021	0.0000
Younger	-0.058	0.082	0.500	0.4795
Middle-aged	-0.137**	0.061	5.015	0.0251
Race	0.001	0.056	0.000	0.9844
Education	-0.151***	0.051	8.723	0.0031
Length of employment	-0.007*	0.004	2.706	0.1000
Nursing facility	-0.208**	0.095	4.794	0.0286
Assisted-living	-0.216**	0.086	6.220	0.0126
Supervisor training	0.035*	0.020	3.021	0.0822
Nursing facility*Supervisor training	-0.057	0.113	0.254	0.6141

Likelihood Ratio Chi-Square=50.399, p=0.000; AIC=2078.038

*p≤0.10, **p≤0.05, ***p≤0.01, ****p≤0.001

Intent to Leave

Table 40. Moderating Effects of Being a Nursing Facility on the Relationship between Communication about Tasks and a Direct Care Worker’s Intent to Leave controlling for Direct Care Worker Characteristics

Predictors	Coefficient	S.E.	Wald Chi-Square	<i>p</i>
Intercept	0.489****	0.113	18.644	0.0000
Younger	0.068	0.062	1.186	0.2761
Middle-aged	-0.042	0.047	0.811	0.3679
Race	0.075*	0.042	3.158	0.0755
Education	0.050	0.039	1.637	0.2007
Length of employment	-0.007**	0.003	5.334	0.0209
Nursing facility	-0.044	0.068	0.417	0.5185
Assisted-living	0.051	0.079	0.422	0.5162
Communication about tasks	-0.059	0.043	1.889	0.1693
Nursing facility*Communication about tasks	0.121	0.085	2.008	0.1565

Likelihood Ratio Chi-Square=20.256, *p*=0.016; AIC=1608.116

p*≤0.10, *p*≤0.05, ****p*≤0.01, *****p*≤0.001

Table 41. Moderating Effects of Being a Nursing Facility on the Relationship between Feedback and a Direct Care Worker’s Intent to Leave controlling for Direct Care Worker Characteristics

Predictors	Coefficient	S.E.	Wald Chi-Square	<i>p</i>
Intercept	0.427****	0.115	13.793	0.0002
Younger	0.070	0.061	1.306	0.2532
Middle-aged	-0.047	0.046	1.052	0.3051
Race	0.069	0.042	2.665	0.1026
Education	0.048	0.040	1.459	0.2271
Length of employment	-0.007**	0.003	5.272	0.0217
Nursing facility	0.025	0.058	0.183	0.6691
Assisted-living	0.013	0.070	0.033	0.8554
Feedback	-0.035	0.045	0.592	0.4416
Nursing facility*Feedback	-0.048	0.075	0.410	0.5221

Likelihood Ratio Chi-Square=19.942, *p*=0.018; AIC=1608.431

p*≤0.10, *p*≤0.05, ****p*≤0.01, *****p*≤0.001

Table 42. Moderating Effects of Being a Home Care Agency on the Relationship between Participation in Care Planning and a Direct Care Worker's Intent to Leave controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.368****	0.100	13.468	0.0002
Younger	0.065	0.062	1.109	0.2924
Middle-aged	-0.045	0.046	0.987	0.3204
Race	0.077*	0.041	3.436	0.0638
Education	0.050	0.039	1.583	0.2083
Length of employment	-0.006**	0.003	5.118	0.0237
Home Care	0.003	0.071	0.002	0.9675
Participation in care planning	-0.007	0.030	0.059	0.8086
Home care agency*Participation in care planning	-0.009	0.075	0.015	0.9009

Likelihood Ratio Chi-Square=17.553, $p=0.025$; AIC=1608.820

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 43. Moderating Effects of Being a Home Care Agency on the Relationship between Flex Time and a Direct Care Worker's Intent to Leave controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.380****	0.071	28.950	0.0000
Younger	0.067	0.062	1.175	0.2784
Middle-aged	-0.044	0.046	0.936	0.3333
Race	0.076*	0.042	3.310	0.0688
Education	0.050	0.039	1.596	0.2065
Length of employment	-0.007**	0.003	5.474	0.0193
Home Care	-0.050	0.066	0.560	0.4544
Flex time	-0.020	0.020	0.943	0.3315
Home care agency*Flex time	0.074	0.078	0.899	0.3431

Likelihood Ratio Chi-Square=18.513, $p=0.018$; AIC=1607.860

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 44. Moderating Effects of Being a Nursing Facility on the Relationship between Becoming a Higher-Level Direct Care Worker and a Direct Care Worker's Intent to Leave controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.357****	0.063	31.935	0.0000
Younger	0.067	0.061	1.173	0.2789
Middle-aged	-0.045	0.046	0.986	0.3207
Race	0.082*	0.043	3.731	0.0534
Education	0.053	0.040	1.788	0.1811
Length of employment	-0.007**	0.003	5.362	0.0206
Nursing facility	0.031	0.065	0.228	0.6331
Assisted-living	-0.003	0.063	0.002	0.9679
Higher-level direct care worker	-0.031	0.051	0.386	0.5346
Nursing facility*Higher-level direct care worker	-0.035	0.080	0.195	0.6589

Likelihood Ratio Chi-Square=18.982, $p=0.025$; AIC=1609.391

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 45. Moderating Effects of Being a Nursing Facility on the Relationship between Becoming a Licensed Practical Nurse and a Direct Care Worker's Intent to Leave controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.338****	0.059	33.307	0.0000
Younger	0.066	0.061	1.163	0.2808
Middle-aged	-0.048	0.046	1.087	0.2970
Race	0.087**	0.043	4.157	0.0415
Education	0.052	0.039	1.713	0.1907
Length of employment	-0.007**	0.003	5.536	0.0186
Nursing facility	0.034	0.063	0.284	0.5941
Assisted-living	-0.020	0.066	0.095	0.7574
Licensed Practical Nurse	0.033	0.049	0.459	0.4982
Nursing facility*Licensed Practical Nurse	-0.073	0.063	1.335	0.2480

Likelihood Ratio Chi-Square=19.049, $p=0.025$; AIC=1609.324

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 46. Moderating Effects of Being a Nursing Facility on the Relationship between Peer Mentoring and a Direct Care Worker’s Intent to Leave controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.363****	0.062	34.875	0.0000
Younger	0.066	0.061	1.168	0.2799
Middle-aged	-0.045	0.046	0.988	0.3203
Race	0.084*	0.043	3.808	0.0510
Education	0.052	0.039	1.743	0.1868
Length of employment	-0.007**	0.003	5.251	0.0219
Nursing facility	0.064	0.060	1.136	0.2864
Assisted-living	-0.008	0.062	0.017	0.8953
Peer mentor	-0.051	0.045	1.290	0.2560
Nursing facility*Peer mentor	-0.062	0.063	0.958	0.3278

Likelihood Ratio Chi-Square=19.958, p=0.018; AIC=1608.414

*p≤0.10, **p≤0.05, ***p≤0.01, ****p≤0.001

Table 47. Moderating Effects of Being a Nursing Facility on the Relationship between Direct Care Worker Training and a Direct Care Worker’s Intent to Leave controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.400****	0.077	26.950	0.0000
Younger	0.077	0.061	1.569	0.2104
Middle-aged	-0.048	0.046	1.104	0.2934
Race	0.055	0.042	1.734	0.1880
Education	0.045	0.039	1.283	0.2573
Length of employment	-0.007**	0.003	5.966	0.0146
Nursing facility	0.136*	0.070	3.765	0.0523
Assisted-living	-0.007	0.062	0.012	0.9139
Direct care worker training	-0.007	0.014	0.267	0.6051
Nursing facility*Direct care worker training	-0.212***	0.078	7.486	0.0062

Likelihood Ratio Chi-Square=31.103, p=0.000; AIC=1597.270

*p≤0.10, **p≤0.05, ***p≤0.01, ****p≤0.001

Table 48. Moderating Effects of Being a Nursing Facility on the Relationship between Supervisor Training and a Direct Care Worker’s Intent to Leave controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.400****	0.087	20.943	0.0000
Younger	0.065	0.062	1.126	0.2886
Middle-aged	-0.049	0.046	1.173	0.2788
Race	0.065	0.042	2.413	0.1203
Education	0.051	0.039	1.685	0.1943
Length of employment	-0.007**	0.003	5.519	0.0188
Nursing facility	0.053	0.071	0.548	0.4592
Assisted-living	-0.006	0.062	0.009	0.9226
Supervisor training	-0.010	0.015	0.435	0.5096
Nursing facility*Supervisor training	-0.095	0.081	1.384	0.2394

Likelihood Ratio Chi-Square=22.228, p=0.008; AIC=1606.144

*p≤0.10, **p≤0.05, ***p≤0.01, ****p≤0.001

Think about Quitting

Table 49. Moderating Effects of Being a Nursing Facility on the Relationship between Communication about Tasks and a Direct Care Worker’s Thoughts about Quitting controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.768****	0.176	18.984	0.0000
Younger	0.163*	0.096	2.908	0.0882
Middle-aged	0.116	0.071	2.649	0.1036
Race	0.038	0.066	0.320	0.5714
Education	0.099*	0.059	2.859	0.0909
Length of employment	0.009*	0.005	3.504	0.0612
Nursing facility	0.262***	0.096	7.410	0.0065
Assisted-living	0.140	0.112	1.575	0.2095
Communication about tasks	0.008	0.060	0.017	0.8957
Nursing facility*Communication about tasks	-0.027	0.121	0.051	0.8206

Likelihood Ratio Chi-Square=29.509, $p=0.001$; AIC=2349.800

* $p\leq 0.10$, ** $p\leq 0.05$, *** $p\leq 0.01$, **** $p\leq 0.001$

Table 50. Moderating Effects of Being a Nursing Facility on the Relationship between Feedback and a Direct Care Worker’s Thoughts about Quitting controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	1.152****	0.172	44.958	0.0000
Younger	0.169*	0.094	3.221	0.0727
Middle-aged	0.115	0.070	2.678	0.1017
Race	0.026	0.066	0.150	0.6985
Education	0.095	0.059	2.649	0.1036
Length of employment	0.009*	0.005	3.130	0.0769
Nursing facility	0.193**	0.089	4.686	0.0304
Assisted-living	0.239**	0.098	5.973	0.0145
Feedback	-0.164***	0.063	6.706	0.0096
Nursing facility*Feedback	0.079	0.113	0.494	0.4823

Likelihood Ratio Chi-Square=337.366, $p=0.000$; AIC=2341.943

* $p\leq 0.10$, ** $p\leq 0.05$, *** $p\leq 0.01$, **** $p\leq 0.001$

Table 51. Moderating Effects of Being a Home Care Agency on the Relationship between Participation in Care Planning and a Direct Care Worker’s Thoughts about Quitting controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.921****	0.161	32.581	0.0000
Younger	0.163*	0.095	2.957	0.0855
Middle-aged	0.122*	0.070	3.013	0.0826
Race	0.024	0.065	0.138	0.7100
Education	0.088	0.059	2.222	0.1361
Length of employment	0.010**	0.005	4.161	0.0414
Home Care	-0.088	0.107	0.684	0.4081
Participation in care planning	0.035	0.045	0.628	0.4281
Home Care*Participation in care planning	-0.179	0.113	2.493	0.1144

Likelihood Ratio Chi-Square=3.132, p=0.000; AIC=2346.177

*p<0.10, **p<0.05, ***p<0.01, ****p<0.001

Table 52. Moderating Effects of Being a Home Care Agency on the Relationship between Flex Time and a Direct Care Worker’s Thoughts about Quitting controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	1.045****	0.117	79.805	0.0000
Younger	0.165*	0.095	3.017	0.0824
Middle-aged	0.120*	0.071	2.903	0.0884
Race	0.025	0.065	0.142	0.7061
Education	0.098*	0.059	2.744	0.0976
Length of employment	0.010**	0.005	4.070	0.0437
Home Care	-0.243**	0.101	5.820	0.0158
Flex time	-0.020	0.031	0.399	0.5274
Home Care*Flex time	0.036	0.122	0.088	0.7661

Likelihood Ratio Chi-Square=28.930, p=0.000; AIC=2348.379

*p<0.10, **p<0.05, ***p<0.01, ****p<0.001

Table 53. Moderating Effects of Being a Nursing Facility on the Relationship between Becoming a Higher-Level Direct Care Worker and a Direct Care Worker's Thoughts about Quitting controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.772****	0.101	58.480	0.0000
Younger	0.170*	0.095	3.217	0.0729
Middle-aged	0.114	0.071	2.634	0.1046
Race	0.054	0.065	0.690	0.4061
Education	0.102*	0.059	3.054	0.0805
Length of employment	0.008*	0.005	2.996	0.0835
Nursing facility	0.376****	0.093	16.249	0.0001
Assisted-living	0.142	0.096	2.185	0.1394
Higher-level direct care worker	0.014	0.074	0.035	0.8521
Nursing facility*Higher-level direct care worker	-0.212**	0.120	3.156	0.0757

Likelihood Ratio Chi-Square=33.968, p=0.000; AIC=2345.341

*p≤0.10, **p≤0.05, ***p≤0.01, ****p≤0.001

Table 54. Moderating Effects of Being a Nursing Facility on the Relationship between Becoming a Licensed Practical Nurse and a Direct Care Worker's Thoughts about Quitting controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.763****	0.092	68.732	0.0000
Younger	0.167*	0.094	3.144	0.0762
Middle-aged	0.108	0.070	2.390	0.1221
Race	0.065	0.065	1.001	0.3170
Education	0.102*	0.058	3.073	0.0796
Length of employment	0.008*	0.005	2.912	0.0879
Nursing facility	0.298****	0.090	10.823	0.0010
Assisted-living	0.077	0.101	0.583	0.4453
Licensed Practical Nurse	0.173**	0.073	5.615	0.0178
Nursing facility*Licensed Practical Nurse	-0.226**	0.093	5.901	0.0151

Likelihood Ratio Chi-Square=39.560, p=0.000; AIC=2339.749

*p≤0.10, **p≤0.05, ***p≤0.01, ****p≤0.001

Table 55. Moderating Effects of Being a Nursing Facility on the Relationship between Peer Mentoring and a Direct Care Worker's Thoughts about Quitting controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.804****	0.099	66.211	0.0000
Younger	0.169*	0.094	3.205	0.0734
Middle-aged	0.116*	0.070	2.732	0.0984
Race	0.052	0.065	0.629	0.4276
Education	0.103*	0.059	3.124	0.0771
Length of employment	0.009*	0.005	3.079	0.0793
Nursing facility	0.388****	0.089	19.190	0.0000
Assisted-living	0.143	0.096	2.251	0.1335
Peer mentor	-0.056	0.067	0.713	0.3983
Nursing facility*Peer mentor	-0.192**	0.094	4.196	0.0405

Likelihood Ratio Chi-Square=34.680, $p=0.000$; AIC=2344.629

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 56. Moderating Effects of Being a Nursing Facility on the Relationship between Direct Care Worker Training and a Direct Care Worker's Thoughts about Quitting controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.824****	0.123	44.690	0.0000
Younger	0.173*	0.095	3.332	0.0680
Middle-aged	0.114	0.071	2.596	0.1072
Race	0.017	0.066	0.067	0.7956
Education	0.094	0.059	2.565	0.1092
Length of employment	0.009*	0.005	3.204	0.0734
Nursing facility	0.361****	0.095	14.298	0.0002
Assisted-living	0.147	0.096	2.353	0.1251
Direct care worker training	-0.003	0.020	0.029	0.8652
Nursing facility*Direct care worker training	-0.185*	0.112	2.716	0.0993

Likelihood Ratio Chi-Square=33.620, $p=0.000$; AIC=2345.689

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 57. Moderating Effects of Being a Nursing Facility on the Relationship between Supervisor Training and a Direct Care Worker's Thoughts about Quitting controlling for Direct Care Worker Characteristics

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.889****	0.139	40.736	0.0000
Younger	0.160*	0.095	2.853	0.0912
Middle-aged	0.112	0.071	2.539	0.1111
Race	0.025	0.066	0.137	0.7109
Education	0.100*	0.059	2.913	0.0879
Length of employment	0.009*	0.005	3.404	0.0650
Nursing facility	0.251**	0.107	5.499	0.0190
Assisted-living	0.149	0.096	2.433	0.1188
Supervisor training	-0.021	0.023	0.826	0.3635
Nursing facility*Supervisor training	-0.032	0.125	0.066	0.7975

Likelihood Ratio Chi-Square= 31.591, $p=0.000$; AIC= 2347.718

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Longitudinal Results

Changes in Management Practices on Changes in Organizational Commitment

Recommend Organization for a Job

Table 58. Effects of Changes in Work Design on Changes in a Direct Care Worker's Recommendation of the Organization for a Job controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	S.E.	Wald Chi-Square	<i>p</i>
Intercept	-0.010	0.129	0.006	0.9404
Younger to middle-aged	0.295	0.202	2.137	0.1438
Middle-aged to older	-0.097	0.093	1.082	0.2983
Race	-0.013	0.061	0.047	0.8279
Education	-0.063	0.094	0.451	0.5017
Length of employment	-0.046	0.094	0.237	0.6264
Nursing facility	0.040	0.061	0.438	0.5082
Assisted-living	-0.069	0.086	0.633	0.4263
Change in work design	0.042	0.129	0.561	0.4537

Likelihood Ratio Chi-Square=4.609, *p*=0.798; AIC=2233.281

p*≤0.10, *p*≤0.05, ****p*≤0.01, *****p*≤0.001

Table 59. Effects of Changes in Participation in Care Planning on Changes in a Direct Care Worker's Recommendation of the Organization for a Job controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	S.E.	Wald Chi-Square	<i>p</i>
Intercept	-0.012	0.128	0.009	0.9251
Younger to middle-aged	0.294	0.203	2.103	0.1470
Middle-aged to older	-0.096	0.094	1.055	0.3045
Race	-0.002	0.060	0.002	0.9683
Education	-0.066	0.094	0.496	0.4812
Length of employment	-0.043	0.093	0.219	0.6399
Nursing facility	0.031	0.059	0.268	0.6046
Assisted-living	-0.076	0.084	0.819	0.3655
Change in participation in care planning	0.011	0.032	0.126	0.7224

Likelihood Ratio Chi-Square=4.224, *p*=0.836; AIC=2233.666

p*≤0.10, *p*≤0.05, ****p*≤0.01, *****p*≤0.001

Table 60. Effects of Changes in Communication about Tasks on Changes in a Direct Care Worker's Recommendation of the Organization for a Job controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.019	0.130	0.022	0.8809
Younger to middle-aged	0.290	0.202	2.060	0.1512
Middle-aged to older	-0.096	0.094	1.055	0.3044
Race	0.007	0.061	0.012	0.9114
Education	-0.068	0.093	0.537	0.4638
Length of employment	-0.033	0.095	0.124	0.7249
Nursing facility	0.013	0.064	0.040	0.8409
Assisted-living	-0.081	0.085	0.920	0.3375
Change in communication about tasks	-0.029	0.047	0.362	0.5474

Likelihood Ratio Chi-Square=4.479, $p=0.812$; AIC=2233.411

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 61. Effects Changes in Feedback on Changes in a Direct Care Worker's Recommendation of the Organization for a Job controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.009	0.129	0.005	0.9438
Younger to middle-aged	0.292	0.198	2.169	0.1409
Middle-aged to older	-0.098	0.093	1.111	0.2919
Race	-0.014	0.060	0.057	0.8112
Education	-0.059	0.094	0.389	0.5331
Length of employment	-0.045	0.093	0.236	0.6268
Nursing facility	0.026	0.059	0.190	0.6631
Assisted-living	-0.055	0.087	0.404	0.5250
Change in feedback	0.056	0.037	2.253	0.1333

Likelihood Ratio Chi-Square=6.255, $p=0.619$; AIC=2231.635

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 62. Effects of Changes in Flex Time on Changes in a Direct Care Worker's Recommendation of the Organization for a Job controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.017	0.129	0.017	0.8976
Younger to middle-aged	0.296	0.203	2.135	0.1440
Middle-aged to older	-0.100	0.094	1.138	0.2860
Race	-0.022	0.062	0.125	0.7237
Education	-0.064	0.095	0.451	0.5016
Length of employment	-0.030	0.092	0.109	0.7414
Nursing facility	0.028	0.059	0.232	0.6298
Assisted-living	-0.067	0.085	0.631	0.4268
Change in flex time	0.024	0.020	1.487	0.2227

Likelihood Ratio Chi-Square=5.617, $p=0.690$; AIC=2232.273

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 63. Effects of Having a Career Ladder Program to Become a Higher Level Direct Care Worker on Changes in a Direct Care Worker's Recommendation of the Organization for a Job controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.008	0.129	0.004	0.9493
Younger to middle-aged	0.287	0.201	2.026	0.1546
Middle-aged to older	-0.099	0.093	1.126	0.2887
Race	-0.007	0.059	0.015	0.9040
Education	-0.073	0.095	0.587	0.4434
Length of employment	-0.049	0.094	0.269	0.6041
Nursing facility	0.050	0.061	0.658	0.4174
Assisted-living	-0.065	0.083	0.615	0.4330
Change in higher-level direct care worker	0.055	0.049	1.266	0.2605

Likelihood Ratio Chi-Square=5.453, $p=0.708$; AIC=2232.437

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 64. Effects of Changes in Having a Career Ladder Program to Become a Licensed Practical Nurse on Changes in a Direct Care Worker’s Recommendation of the Organization for a Job controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.054	0.129	0.176	0.6747
Younger to middle-aged	0.288	0.196	2.152	0.1424
Middle-aged to older	-0.110	0.096	1.331	0.2487
Race	0.007	0.060	0.015	0.9036
Education	-0.072	0.093	0.589	0.4426
Length of employment	-0.028	0.093	0.089	0.7648
Nursing facility	0.025	0.059	0.187	0.6653
Assisted-living	-0.033	0.088	0.143	0.7057
Change in Licensed Practical Nurse	0.103*	0.057	3.265	0.0708

Likelihood Ratio Chi-Square=7.333, $p=0.501$; AIC=2230.557

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 65. Effects of Changes in Peer Mentoring on Changes in a Direct Care Worker’s Recommendation of the Organization for a Job controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.030	0.131	0.053	0.8177
Younger to middle-aged	0.281	0.204	1.905	0.1675
Middle-aged to older	-0.101	0.093	1.181	0.2771
Race	0.000	0.060	0.000	0.9957
Education	-0.070	0.094	0.556	0.4560
Length of employment	-0.037	0.094	0.154	0.6945
Nursing facility	0.048	0.060	0.646	0.4216
Assisted-living	-0.082	0.084	0.959	0.3273
Change in peer mentor	0.111	0.070	2.488	0.1147

Likelihood Ratio Chi-Square=6.452, $p=0.597$; AIC=2231.438

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 66. Effects of Changes in Direct Care Worker Training on Changes in a Direct Care Worker's Recommendation of the Organization for a Job controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.010	0.140	0.005	0.9416
Younger to middle-aged	0.292	0.203	2.081	0.1492
Middle-aged to older	-0.096	0.094	1.053	0.3048
Race	-0.001	0.060	0.000	0.9909
Education	-0.067	0.094	0.511	0.4746
Length of employment	-0.043	0.098	0.188	0.6645
Nursing facility	0.031	0.058	0.278	0.5981
Assisted-living	-0.080	0.085	0.891	0.3451
Change in direct care worker training	-0.002	0.016	0.022	0.8810

Likelihood Ratio Chi-Square=4.136, $p=0.845$; AIC=2233.754

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 67. Effects of Changes in Supervisor Training on Changes in Direct Care Worker's Recommendation of the Organization for a Job controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.057	0.132	0.185	0.6667
Younger to middle-aged	0.287	0.201	2.029	0.1543
Middle-aged to older	-0.096	0.092	1.086	0.2974
Race	-0.015	0.060	0.064	0.8009
Education	-0.070	0.095	0.547	0.4595
Length of employment	-0.002	0.095	0.000	0.9871
Nursing facility	0.001	0.058	0.000	0.9921
Assisted-living	-0.070	0.084	0.704	0.4014
Change in supervisor training	0.025*	0.015	2.841	0.0919

Likelihood Ratio Chi-Square=6.786, $p=0.560$; AIC=2231.104

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Intent to Leave

Table 68. Effects of Changes in Work Design on Changes in a Direct Care Worker’s Intent to Leave controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	S.E.	Wald Chi-Square	p
Intercept	-0.164	0.117	1.951	0.1625
Younger to middle-aged	0.190	0.231	0.677	0.4106
Middle-aged to older	0.085	0.111	0.591	0.4420
Race	0.011	0.051	0.048	0.8270
Education	-0.032	0.071	0.205	0.6504
Length of employment	0.148	0.093	2.509	0.1132
Nursing facility	0.069	0.052	1.792	0.1807
Assisted-living	0.190***	0.073	6.672	0.0098
Change in work design	-0.028	0.050	0.326	0.5680

Likelihood Ratio Chi-Square=14.390, p=0.072; AIC=1818.001

*p≤0.10, **p≤0.05, ***p≤0.01, ****p≤0.001

Table 69. Effects of Changes in Participation in Care Planning on Changes in a Direct Care Worker’s Intent to Leave controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	S.E.	Wald Chi-Square	p
Intercept	-0.168	0.117	2.060	0.1512
Younger to middle-aged	0.189	0.233	0.653	0.4190
Middle-aged to older	0.084	0.111	0.581	0.4459
Race	0.006	0.048	0.017	0.8972
Education	-0.031	0.071	0.187	0.6651
Length of employment	0.152	0.093	2.665	0.1026
Nursing facility	0.074	0.049	2.249	0.1337
Assisted-living	0.192***	0.072	7.118	0.0076
Change in participation in care planning	-0.023	0.028	0.655	0.4185

Likelihood Ratio Chi-Square=14.737, p=0.064; AIC=1817.654

*p≤0.10, **p≤0.05, ***p≤0.01, ****p≤0.001

Table 70. Effects of Changes in Communication about Tasks on Changes in a Direct Care Worker's Intent to Leave controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.157	0.117	1.802	0.1795
Younger to middle-aged	0.194	0.233	0.688	0.4069
Middle-aged to older	0.084	0.110	0.583	0.4450
Race	-0.002	0.049	0.001	0.9742
Education	-0.029	0.071	0.166	0.6838
Length of employment	0.140	0.094	2.230	0.1354
Nursing facility	0.086	0.057	2.284	0.1307
Assisted-living	0.198***	0.071	7.652	0.0057
Change in communication about tasks	0.016	0.039	0.174	0.6764

Likelihood Ratio Chi-Square=14.223, *p*=0.076; AIC=1818.169

p*≤0.10, *p*≤0.05, ****p*≤0.01, *****p*≤0.001

Table 71. Effects of Changes in Feedback on Changes in a Direct Care Worker's Intent to Leave controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.166	0.117	2.001	0.1572
Younger to middle-aged	0.193	0.229	0.707	0.4003
Middle-aged to older	0.086	0.112	0.589	0.4427
Race	0.015	0.049	0.095	0.7581
Education	-0.037	0.071	0.274	0.6007
Length of employment	0.149	0.093	2.566	0.1092
Nursing facility	0.080	0.050	2.613	0.1060
Assisted-living	0.175**	0.074	5.619	0.0178
Change in feedback	-0.051	0.032	2.595	0.1072

Likelihood Ratio Chi-Square=16.845, *p*=0.032; AIC=1815.547

p*≤0.10, *p*≤0.05, ****p*≤0.01, *****p*≤0.001

Table 72. Effects of Changes in Flex Time on Changes in a Direct Care Worker’s Intent to Leave controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.159	0.117	1.837	0.1753
Younger to middle-aged	0.193	0.232	0.694	0.4047
Middle-aged to older	0.084	0.110	0.576	0.4478
Race	-0.001	0.050	0.000	0.9855
Education	-0.029	0.071	0.171	0.6793
Length of employment	0.144	0.094	2.379	0.1230
Nursing facility	0.076	0.050	2.376	0.1232
Assisted-living	0.198***	0.071	7.725	0.0054
Change in flex time	0.004	0.016	0.057	0.8117

Likelihood Ratio Chi-Square=14.100, *p*=0.079; AIC=1818.291

p*≤0.10, *p*≤0.05, ****p*≤0.01, *****p*≤0.001

Table 73. Effects of Changes in Having a Career Ladder Program to Become a Higher Level Direct Care Worker on Changes in a Direct Care Worker’s Intent to Leave controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.164	0.117	1.969	0.1606
Younger to middle-aged	0.196	0.234	0.699	0.4032
Middle-aged to older	0.086	0.111	0.607	0.4360
Race	0.007	0.048	0.020	0.8881
Education	-0.026	0.072	0.134	0.7147
Length of employment	0.149	0.093	2.565	0.1093
Nursing facility	0.064	0.051	1.586	0.2079
Assisted-living	0.188***	0.071	7.028	0.0080
Change in higher-level direct care worker	-0.035	0.040	0.768	0.3809

Likelihood Ratio Chi-Square=14.871, *p*=0.062; AIC=1817.521

p*≤0.10, *p*≤0.05, ****p*≤0.01, *****p*≤0.001

Table 74. Effects of Changes in Having a Career Ladder Program to Become a Licensed Practical Nurse on Changes in a Direct Care Worker’s Intent to Leave controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.156	0.120	1.680	0.1949
Younger to middle-aged	0.193	0.232	0.692	0.4056
Middle-aged to older	0.086	0.111	0.599	0.4390
Race	0.002	0.048	0.002	0.9681
Education	-0.029	0.071	0.172	0.6785
Length of employment	0.142	0.094	2.286	0.1306
Nursing facility	0.077	0.050	2.392	0.1219
Assisted-living	0.192***	0.074	6.834	0.0089
Change in Licensed Practical Nurse	-0.008	0.049	0.029	0.8642

Likelihood Ratio Chi-Square=14.072, p=0.080; AIC=1818.319

*p≤0.10, **p≤0.05, ***p≤0.01, ****p≤0.001

Table 75. Effects of Changes in Peer Mentoring on Changes in a Direct Care Worker’s Intent to Leave controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.160	0.118	1.831	0.1760
Younger to middle-aged	0.192	0.233	0.681	0.4091
Middle-aged to older	0.084	0.110	0.583	0.4453
Race	0.003	0.048	0.003	0.9566
Education	-0.030	0.071	0.179	0.6726
Length of employment	0.143	0.093	2.348	0.1255
Nursing facility	0.078	0.050	2.425	0.1194
Assisted-living	0.196***	0.071	7.618	0.0058
Change in peer mentor	0.006	0.065	0.009	0.9263

Likelihood Ratio Chi-Square=14.050, p=0.080; AIC=1818.341

*p≤0.10, **p≤0.05, ***p≤0.01, ****p≤0.001

Table 76. Effects of Changes in Direct Care Worker Training on Changes in a Direct Care Worker's Intent to Leave controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.113	0.122	0.853	0.3558
Younger to middle-aged	0.195	0.235	0.689	0.4064
Middle-aged to older	0.084	0.111	0.571	0.4497
Race	0.001	0.048	0.001	0.9749
Education	-0.032	0.071	0.198	0.6562
Length of employment	0.115	0.095	1.456	0.2276
Nursing facility	0.085*	0.050	2.921	0.0875
Assisted-living	0.185***	0.071	6.717	0.0096
Change in direct care worker training	-0.017	0.013	1.814	0.1780

Likelihood Ratio Chi-Square=15.919, *p*=0.044; AIC=1816.473

p*≤0.10, *p*≤0.05, ****p*≤0.01, *****p*≤0.001

Table 77. Effects of Changes in Supervisor Training on Changes in a Direct Care Worker's Intent to Leave controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.132	0.120	1.208	0.2716
Younger to middle-aged	0.196	0.235	0.699	0.4030
Middle-aged to older	0.084	0.111	0.575	0.4483
Race	0.012	0.048	0.066	0.7968
Education	-0.028	0.071	0.151	0.6977
Length of employment	0.118	0.096	1.505	0.2199
Nursing facility	0.096*	0.053	3.336	0.0678
Assisted-living	0.191***	0.071	7.197	0.0073
Change in supervisor training	-0.017	0.013	1.628	0.2020

Likelihood Ratio Chi-Square=15.953, *p*=0.043; AIC=1816.438

p*≤0.10, *p*≤0.05, ****p*≤0.01, *****p*≤0.001

Think about Quitting

Table 78. Effects of Changes in Work Design on Changes in a Direct Care Worker’s Thoughts about Quitting controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.044	0.138	0.102	0.7500
Younger to middle-aged	0.233	0.234	0.986	0.3207
Middle-aged to older	0.080	0.139	0.336	0.5621
Race	0.017	0.061	0.078	0.7799
Education	0.068	0.105	0.414	0.5201
Length of employment	0.094	0.107	0.780	0.3771
Nursing facility	0.074	0.063	1.370	0.2418
Assisted-living	0.024	0.091	0.067	0.7951
Change in work design	0.043	0.061	0.495	0.4818

Likelihood Ratio Chi-Square=5.390, *p*=0.715; AIC=2196.866

p*≤0.10, *p*≤0.05, ****p*≤0.01, *****p*≤0.001

Table 79. Effects of Changes in Participation in Care Planning on Changes in a Direct Care Worker’s Thoughts about Quitting controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.070	0.139	0.252	0.6155
Younger to middle-aged	0.221	0.237	0.871	0.3508
Middle-aged to older	0.081	0.138	0.349	0.5546
Race	0.037	0.058	0.409	0.5224
Education	0.062	0.104	0.357	0.5503
Length of employment	0.120	0.107	1.246	0.2643
Nursing facility	0.058	0.060	0.938	0.3327
Assisted-living	0.005	0.089	0.003	0.9567
Change in participation in care planning	-0.046	0.034	1.845	0.1744

Likelihood Ratio Chi-Square=6.728, *p*=0.566; AIC=2195.528

p*≤0.10, *p*≤0.05, ****p*≤0.01, *****p*≤0.001

Table 80. Effects of Changes in Communication about Tasks on Changes in a Direct Care Worker's Thoughts about Quitting controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.039	0.137	0.082	0.7746
Younger to middle-aged	0.236	0.235	1.015	0.3137
Middle-aged to older	0.081	0.138	0.343	0.5580
Race	-0.001	0.060	0.000	0.9879
Education	0.071	0.105	0.459	0.4982
Length of employment	0.078	0.106	0.545	0.4605
Nursing facility	0.133*	0.068	3.816	0.0508
Assisted-living	0.026	0.089	0.087	0.7684
Change in communication about tasks	0.121**	0.049	6.247	0.0124

Likelihood Ratio Chi-Square=11.738, $p=0.163$; AIC=2190.517

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 81. Effects of Changes in Feedback on Changes in a Direct Care Worker's Thoughts about Quitting controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.054	0.137	0.155	0.6942
Younger to middle-aged	0.229	0.237	0.934	0.3337
Middle-aged to older	0.082	0.138	0.352	0.5530
Race	0.035	0.059	0.353	0.5522
Education	0.061	0.105	0.339	0.5607
Length of employment	0.104	0.105	0.973	0.3240
Nursing facility	0.065	0.060	1.156	0.2822
Assisted-living	0.005	0.091	0.003	0.9554
Change in feedback	-0.020	0.039	0.274	0.6006

Likelihood Ratio Chi-Square=5.156, $p=0.741$; AIC=2197.009

* $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.01$, **** $p \leq 0.001$

Table 82. Effects of Changes in Flex Time on Changes in a Direct Care Worker’s Thoughts about Quitting controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.051	0.137	0.139	0.7091
Younger to middle-aged	0.229	0.236	0.940	0.3322
Middle-aged to older	0.082	0.139	0.344	0.5573
Race	0.031	0.061	0.258	0.6118
Education	0.064	0.104	0.375	0.5406
Length of employment	0.101	0.105	0.927	0.3356
Nursing facility	0.063	0.060	1.103	0.2935
Assisted-living	0.013	0.089	0.022	0.8827
Change in flex time	-0.001	0.020	0.002	0.9630

Likelihood Ratio Chi-Square=4.861, $p=0.772$; AIC=219.395

* $p\leq 0.10$, ** $p\leq 0.05$, *** $p\leq 0.01$, **** $p\leq 0.001$

Table 83. Effects of Changes in Having a Career Ladder Program to Become a Higher Level Direct Care Worker on Changes in a Direct Care Worker’s Thoughts about Quitting controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.053	0.137	0.151	0.6976
Younger to middle-aged	0.230	0.237	0.947	0.3304
Middle-aged to older	0.082	0.138	0.352	0.5528
Race	0.032	0.059	0.291	0.5894
Education	0.065	0.104	0.395	0.5299
Length of employment	0.104	0.105	0.974	0.3237
Nursing facility	0.058	0.062	0.884	0.3472
Assisted-living	0.010	0.089	0.013	0.9076
Change in higher-level direct care worker	-0.014	0.044	0.093	0.7607

Likelihood Ratio Chi-Square=4.942, $p=0.764$; AIC=2197.314

* $p\leq 0.10$, ** $p\leq 0.05$, *** $p\leq 0.01$, **** $p\leq 0.001$

Table 84. Effects of Changes in Having a Career Ladder Program to Become Becoming a Licensed Practical Nurse on Changes in a Direct Care Worker’s Thoughts about Quitting controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.054	0.139	0.150	0.6988
Younger to middle-aged	0.229	0.236	0.940	0.3323
Middle-aged to older	0.080	0.139	0.336	0.5620
Race	0.031	0.059	0.271	0.6030
Education	0.064	0.105	0.371	0.5426
Length of employment	0.102	0.106	0.936	0.3332
Nursing facility	0.063	0.060	1.089	0.2966
Assisted-living	0.017	0.091	0.034	0.8531
Change in Licensed Practical Nurse	0.008	0.057	0.018	0.8922

Likelihood Ratio Chi-Square=4.877, *p*=0.771; AIC=2197.378

p*≤0.10, *p*≤0.05, ****p*≤0.01, *****p*≤0.001

Table 85. Effects of Changes in Peer Mentoring on Changes in a Direct Care Worker’s Thoughts about Quitting controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.048	0.137	0.120	0.7286
Younger to middle-aged	0.232	0.237	0.958	0.3276
Middle-aged to older	0.083	0.138	0.356	0.5508
Race	0.030	0.059	0.259	0.6106
Education	0.065	0.105	0.384	0.5356
Length of employment	0.101	0.105	0.918	0.3380
Nursing facility	0.058	0.061	0.912	0.3396
Assisted-living	0.015	0.090	0.027	0.8700
Change in peer mentor	-0.029	0.075	0.147	0.7012

Likelihood Ratio Chi-Square=5.022, *p*=0.755; AIC=2197.234

p*≤0.10, *p*≤0.05, ****p*≤0.01, *****p*≤0.001

Table 86. Effects of Changes in Direct Care Worker Training on Changes in a Direct Care Worker's Thoughts about Quitting controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	0.021	0.142	0.022	0.8825
Younger to middle-aged	0.233	0.237	0.967	0.3253
Middle-aged to older	0.080	0.139	0.334	0.5633
Race	0.028	0.059	0.236	0.6274
Education	0.061	0.105	0.335	0.5628
Length of employment	0.057	0.107	0.283	0.5948
Nursing facility	0.077	0.061	1.590	0.2074
Assisted-living	-0.004	0.090	0.002	0.9663
Change in direct care worker training	-0.026*	0.016	2.721	0.0990

Likelihood Ratio Chi-Square= 7.856, $p=0.448$; AIC=2194.399

* $p\leq 0.10$, ** $p\leq 0.05$, *** $p\leq 0.01$, **** $p\leq 0.001$

Table 87. Effects of Changes in Supervisor Training on Changes in a Direct Care Worker's Thoughts about Quitting controlling for Changes in Direct Care Worker Characteristics and the Type of Long-Term Care Setting

Predictors	Coefficient	<i>S.E.</i>	Wald Chi-Square	<i>p</i>
Intercept	-0.006	0.137	0.002	0.9648
Younger to middle-aged	0.235	0.237	0.985	0.3209
Middle-aged to older	0.081	0.138	0.343	0.5582
Race	0.046	0.059	0.608	0.4355
Education	0.068	0.104	0.425	0.5144
Length of employment	0.060	0.107	0.311	0.5773
Nursing facility	0.095	0.063	2.292	0.1301
Assisted-living	0.005	0.089	0.003	0.9588
Change in supervisor training	-0.028**	0.016	3.052	0.0806

Likelihood Ratio Chi-Square=8.367, $p=0.398$; AIC= 2193.888

* $p\leq 0.10$, ** $p\leq 0.05$, *** $p\leq 0.01$, **** $p\leq 0.001$

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EDUCATION

- PhD August 2009 The Pennsylvania State University, University Park, Pennsylvania
Health Policy and Administration, Minor in Gerontology
- MS May 1998 Sage Graduate School, Troy, New York
Physical Therapy
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EXPERIENCE

- 2005-2008 National Institute on Aging Trainee, University Park, PA
- 2003-2005 Program Manager/Physical Therapist, Genesis Health Services, Kennett Square, PA
- 1998-2003 Physical Therapist: Sebastian River Medical Center, Barefoot Bay, FL;
HealthSouth Sports Medicine & Rehabilitation Center, Palm Bay, FL; Health First,
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PUBLICATIONS

- Stott, A. L., Brannon, S. D., Vasey, J., Dansky, K. H., and Kemper, P. (2007). Baseline management practices at providers in Better Jobs Better Care. *Gerontology and Geriatrics Education*, 28 (2), 17-36.
- Kemper, P., Brannon, S. D., Barry, T., Stott, A. L., & Heier, B. (2008). Implementation of the Better Jobs Better Care demonstration: Lessons for long term care workforce initiatives. *The Gerontologist*, 48, 26-35.

SELECTED PRESENTATIONS

- Stott, A. L. (2008). "Did Better Jobs Better Care change management practices and processes?" Presented at the annual meeting of AcademyHealth, Washington, DC.
- Stott, A. L., Vasey, J., Brannon, S. D., Kemper, P., & Heier, B. (2007). Changes in management practices over the course of the BJBC demonstration. Presented at the annual meeting of the Gerontological Society of America, San Francisco, CA.
- Stott, A. L., Vasey, J., Brannon, S. D., & Kemper, P. (2006). The BJBC Demonstration: Management practices before implementing change. Presented at the annual meeting of the Gerontological Society of America, Dallas, TX.

FELLOWSHIPS AND AWARDS

- 2008 Juran Fellowship
- 2007 The Pennsylvania State University Graduate Exhibition Award, Third Place in the Social & Behavioral Sciences