Shift Work in the Long-TermCare Industry: an Examination of Organizational and Individual factors that influence Employee Outcomes

Kristin Elizabeth Charles
Portland State University

Follow this and additional works at: https://pdxscholar.library.pdx.edu/open_access_etds

Recommended Citation

This Dissertation is brought to you for free and open access. It has been accepted for inclusion in Dissertations and Theses by an authorized administrator of PDXScholar. Please contact us if we can make this document more accessible: pdxscholar@pdx.edu.
SHIFT WORK IN THE LONG-TERM CARE INDUSTRY: AN EXAMINATION OF ORGANIZATIONAL AND INDIVIDUAL FACTORS THAT INFLUENCE EMPLOYEE OUTCOMES

by

KRISTIN ELIZABETH CHARLES

A dissertation submitted in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY
in
SYSTEMS SCIENCE: PSYCHOLOGY

Portland State University
2007
DISSERTATION APPROVAL

The abstract and dissertation of Kristin Elizabeth Charles for the Doctor of Philosophy in Systems Science: Psychology were presented August 9, 2007, and accepted by the dissertation committee and the doctoral program.

COMMITTEE APPROVALS:

Robert K. Sinclair, Chair

Leslie B. Hammer

Steven T. Hunt

Mo Wang

Wayne W. Wakeland

Elizabeth D. Almer
Representative of the Office of Graduate Studies

DOCTORAL PROGRAM APPROVAL:

George G. Lendaris, Acting Director
Systems Science Ph.D. Program
ABSTRACT


Title: Shift work in the long-term care industry: An examination of organizational and individual factors that influence employee outcomes

The long-term care (LTC) industry provides medical and social services in facility-based settings to the elderly, chronically ill, and disabled. With the aging of the United States population, the need for LTC workers is expected to drastically increase in the next decade. However, the industry faces a significant staffing shortage. One potential cause of staffing problems in LTC is working non-standard work schedules. Because of the need to provide around the clock care, LTC employees often work non-standard shifts, long hours, night work, and over weekends and holidays. Although many studies have examined health and sleep-related outcomes associated with non-standard work schedules, few studies have examined their effects on job attitudes and retention-related outcomes.

To address these needs, the present study examines the effects of non-standard work schedules on three outcomes; emotional exhaustion, engagement, and intentions to leave. I tested several hypotheses concerning individual characteristics and work environment variables expected to moderate these relationships. The individual characteristics included circadian orientation (i.e., morningness) and non-work
schedule fit. The work environment influences included four aspects of organizational justice applied to work schedules, or work schedule justice. Both the main effects and interactions between the four justice facets were examined.

Participants for this study were 389 LTC workers from a single organization working in 21 different facilities. Participants filled out a paper and pencil survey asking them about their circadian preferences, non-work schedule fit, work schedule justice perceptions, amount of night work, emotional exhaustion, engagement, and intentions to leave the organization, job, and work schedule.

Results of this study were mixed. Few of the individual difference x night work interactions were significant. However, there were several interesting findings related to work schedule justice, including differential relationships for the justice facets of each schedule outcome and interactions among the justice facets in predicting some outcomes. Results of this research provide valuable information to health care organizations regarding improving employee engagement and designing work schedules that may result in less emotional exhaustion and lower turnover.
Dedicated to my father, Dr. Donald Charles, without whose love and support the completion of my degree would not have been possible.
Acknowledgements

I would like to acknowledge several people who helped me complete this project. First, my advisor, Dr. Robert Sinclair provided valuable input in all stages of this project. Additionally, I greatly appreciated the contributions of my committee members, Dr. Elizabeth Almer, Dr. Leslie Hammer, Dr. Steve Hunt, Dr. Mo Wang, and Dr. Wayne Wakeland. I am grateful to several colleagues also assisted with my data collection, including Dr. Autumn Krauss, Elizabeth McCune, Aarti Shayumsunder, Linda Newton-Curtis, Jessica Morea, Laura Estes, and Lindsay Sears. Toni Dancu has been a great support both professionally and personally throughout my graduate school career and I am forever thankful for her friendship.

I would also like to thank my family for their unfailing support and love, my parents Donald and Jayne Charles and my sister and brother in-law Sarah and Jasonmann. Finally, Joe Mount’s patience and love has been consistent throughout this process and a great source of strength. His ability to make me laugh is a great gift for which I will always be appreciative.
# Table of Contents

Acknowledgements ............................................................................................................ $i$
List of Tables ...................................................................................................................... $iv$
List of Figures ..................................................................................................................... $v$
Chapter 1: Introduction ........................................................................................................ 1
Chapter 2: The long-term care industry ............................................................................. 6
  Overview of long-term care .............................................................................................. 6
  The direct care workforce ................................................................................................. 7
  Causes of staffing problems ............................................................................................ 8
  Consequences of staffing shortages ................................................................................. 11
Chapter 3: Exploring shift work in the LTC industry .................................................... 14
  Overview of shift work research ...................................................................................... 14
  Work schedule design ..................................................................................................... 15
  Outcomes associated with shift work ............................................................................. 17
  Shift work interventions .................................................................................................. 20
  An in-depth focus on day versus night work .................................................................. 21
  A systems perspective of shift work research ............................................................... 23
  Gaps in current shift work literature ............................................................................... 26
Chapter 4: Work schedule tolerance: A person-schedule fit perspective ..................... 29
  Person-Environment Fit Theory ....................................................................................... 30
  Person-schedule fit in LTC ............................................................................................... 31
Chapter 5: Work schedule justice ..................................................................................... 37
  Organizational Justice Theory ......................................................................................... 37
  Organizational justice and organizational outcomes ...................................................... 42
  Work schedule justice .................................................................................................... 43
  Interactions between justice facets ................................................................................ 47
Chapter 6: Outcomes associated with work schedules in LTC ..................................... 51
  Emotional exhaustion ....................................................................................................... 51
  Employee engagement ..................................................................................................... 54
  Employee intentions to leave ........................................................................................... 56
Chapter 7: Present Study .................................................................................................. 61
  Systems approach ............................................................................................................ 61
  The effects of personal characteristics and reactions to night work ......................... 63
  The effects of work schedule justice on LTC workers ................................................ 67
Chapter 8: Qualitative Study ............................................................................................ 75
  Key findings from informational interviews .................................................................. 76
Chapter 9: Methods ........................................................................................................... 79
  Participants ....................................................................................................................... 79
  Data collection and procedure ....................................................................................... 80
  Power analysis ................................................................................................................ 83
  Measures .......................................................................................................................... 83
Chapter 10: Results ............................................................................................................. 88
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot study</td>
<td>88</td>
</tr>
<tr>
<td>Missing data</td>
<td>89</td>
</tr>
<tr>
<td>Measure testing</td>
<td>90</td>
</tr>
<tr>
<td>Group level control variables</td>
<td>92</td>
</tr>
<tr>
<td>Hypothesis testing</td>
<td>93</td>
</tr>
<tr>
<td>Research questions</td>
<td>101</td>
</tr>
<tr>
<td>Chapter 11: Discussion</td>
<td>105</td>
</tr>
<tr>
<td>Study findings</td>
<td>105</td>
</tr>
<tr>
<td>Potential explanations for limited study findings</td>
<td>116</td>
</tr>
<tr>
<td>Theoretical implications</td>
<td>129</td>
</tr>
<tr>
<td>Practical implications</td>
<td>133</td>
</tr>
<tr>
<td>Suggestions for future research</td>
<td>139</td>
</tr>
<tr>
<td>Conclusions</td>
<td>141</td>
</tr>
<tr>
<td>References</td>
<td>169</td>
</tr>
<tr>
<td>Appendix A: Questions used in informational interviews</td>
<td>196</td>
</tr>
<tr>
<td>Appendix B: Data collection protocol</td>
<td>198</td>
</tr>
<tr>
<td>Appendix C: List of measures</td>
<td>199</td>
</tr>
<tr>
<td>Appendix D: Pilot study survey</td>
<td>203</td>
</tr>
<tr>
<td>Appendix E: Full study survey</td>
<td>215</td>
</tr>
</tbody>
</table>
List of Tables

Table 1: Summary of Study Hypotheses .......................................................... 143
Table 2: Pilot Study Reliabilities ...................................................................... 144
Table 3: Results from Confirmatory Factor Analysis ...................................... 145
Table 4: ANOVA Results for Facility Effects on Dependent Variables ............ 146
Table 5: Means, Standard Deviations, and Correlations of Study Variables ...... 147
Table 6: Regression Results for Emotional Exhaustion ................................... 149
Table 7: Regression Results for Engagement .................................................. 150
Table 8: Regression Results for Intentions to Leave the Schedule ................. 151
Table 9: Regression Results for Intentions to Leave the Job ......................... 152
Table 10: Regression Results for Intentions to Leave the LTC Industry .......... 153
Table 11: Summary of Study Results ............................................................. 154
Table 12: Individual Differences Among Shifts .......................................... 155
Table 13: Reasons for Working Current Schedule by Shift .......................... 156
List of Figures

Figure 1: Proposed Model .......................................................... 157

Figure 2: Hypothesized Relationships Between Night Work and Morningness/
Eveningness and Non-Work Schedule Conflict on Employee Engagement .......... 158

Figure 3: Hypothesized Relationships Between Night Work and Morningness/
Eveningness and Non-Work Schedule Conflict on Emotional Exhaustion and
Intentions to Leave ........................................................................ 159

Figure 4: Hypothesized Interactions Between the Four Work Schedule Justice
Facets and Emotional Exhaustion and Intentions to Leave ................................. 160

Figure 5: Hypothesized Interactions Between the Four Work Schedule Justice
Facets and Employee Engagement ...................................................... 161

Figure 6: Interaction between Non-Work Schedule Fit and Night Work on
Emotional Exhaustion .......................................................................... 162

Figure 7: Interaction between Non-Work Schedule Fit and Night Work on
Intentions to Leave Schedule .................................................................. 163

Figure 8. Interaction between Distributive Schedule Justice and Interpersonal
Schedule Justice on Intentions to Leave the Job ......................................... 164

Figure 9: Interaction between Distributive Schedule Justice and Interpersonal
Schedule Justice on Intentions to Leave the Industry .................................... 165

Figure 10: Interaction between Distributive Schedule Justice and Informational
Schedule Justice on Employee Engagement .............................................. 166
Schedule Justice on Intentions to Leave the Job........................................167

Figure 12: Interaction between Distributive Schedule Justice and Informational Schedule Justice on Intentions to Leave the Industry.............................................168
Chapter 1: Introduction

As the largest industry in the United States (U.S.), healthcare provided 13.5 million jobs in 2004 (Bureau of Labor Statistics, 2006a). Predictions from the U.S. Bureau of Labor Statistics (BLS) suggest that healthcare will be the fastest growing industry in the next decade, with eight of the twenty fastest growing occupations in the healthcare sector. Additionally, the BLS estimates that 19% of new jobs created between 2006 and 2014 will be in healthcare, a larger proportion than any other industry (Bureau of Labor Statistics, 2006a). Approximately 32% of occupations in the healthcare industry fall within the direct care service group, that is, occupations involving the provision of direct care to patients and residents (i.e., direct care workers), and 42% of direct care workers are employed by long-term care (LTC) organizations (Bureau of Labor Statistics, 2006a). Furthermore, the BLS predicts these direct care occupations (e.g., certified nursing assistant, medication aide) will grow 33% between 2006 and 2014, the largest growth within the healthcare industry (Bureau of Labor Statistics, 2006a).

As the U.S. population continues to age, the need for LTC workers will become increasingly important. The U.S. Department of Health and Human Services’ Administration on Aging reports that the population of individuals 85 years and older will increase 40% from 2000 to 2010 and another 44% from 2010 to 2020. Predictions indicate that in 2020 there will be 7.3 million Americans over the age of 85 (U.S. Department of Health and Human Services, 2005). Furthermore, the number of Americans needing home care, nursing care facilities, or rehabilitative services is
Shift work in LTC

expected to increase from 15 million to 27 million between 2000 and 2050 (U.S. Department of Health and Human Services, 2003). These figures suggest that the need for staffing in the LTC industry will continue to grow.

As the need for LTC workers increases, the industry faces a significant staffing shortage. An increase in new position openings and high job turnover both contribute to this shortage. Indeed, the BLS cited the turnover rate for direct care workers as a serious issue; often resulting from the physical and emotional demands these workers face (Bureau of Labor Statistics, 2006b). One demand that can be problematic for direct care workers is working non-standard work schedules, or shift work. Rather than a traditional 9:00 a.m. to 5:00 p.m., Monday-Friday schedule, LTC employees often work long hours, night work, and over weekends and holidays. These schedules can create a variety of problems for employees, including health problems (Costa, 1996; Martens, Nijhuis, Van Boxtel, & Knottnerus, 1999), increased accidents (Gold et al., 1992), interference with family and leisure time (Fenwick & Tausig, 2001; Presser, 2000), and fatigue (Martens et al., 1999; Parkes, 2002).

Conducting work schedule research can be difficult because of the complex nature of employee scheduling needs and organizational staffing requirements. There is no “most” effective shift system because of individual schedule preferences and situational differences in the nature of the job (Snyder, 1995). For example, although most work schedule research focuses on the negative outcomes of night work, some people prefer to work at night because this type of schedule fits with their non-work life demands (Barton, 1994). For example, often in couples one member will work a
day schedule and his or her spouse will work a night shift to accommodate childcare needs (Presser, 1995).

Problems associated with shift work can be viewed from two perspectives; those associated with the individual and those associated with the work environment. The present study explores shift work from both of these perspectives. This approach is useful because it views the topic of shift work from a systems perspective, rather than as solely an individual-level phenomenon. Examining how both personal characteristics and work context factors influence the relationships between work schedules and employee outcomes can help researchers and organizational leaders gain a clearer picture of how work schedules impact meaningful results. In the present study, three outcomes were examined: emotional exhaustion, employee engagement, and intentions to leave.

From the individual perspective, this study explores whether two personal characteristics are related to working night work. Past research on shift work suggests that certain individuals may be more likely to be successful on night schedules, or more tolerant of night work. However, this research has revealed conflicting findings about which characteristics actually predict shift work tolerance. For example, some research suggests that engaging in physical activity, social interaction (Furnham & Hughes, 1999), more flexible sleeping habits, morningness (C. S. Smith et al., 1999), and positive and negative affective dispositions (Prizmic & Kalitema, 1995) may be possible shift work tolerance factors. However other research (Iskra-Golec, 1993; Nachreiner, 1998) has failed to find similar results. The present study examines how
circadian rhythm differences and non-work schedule fit influence shift workers' emotional exhaustion, engagement, and intentions to leave. This information may help employers make decisions about hiring and assigning employees to certain shifts.

The first personal characteristic that was examined in this study is circadian type, or morning and evening orientation. The morningness/eveningness distinction suggests that certain people have preferences for the extremes of the day, and when given the opportunity, will act in accordance with these preferences, with morning-oriented individuals preferring early activity and evening-oriented individuals preferring late night activity (Horne & Ostberg, 1976). Research suggests that shift workers who are more evening-oriented are more successful on night shifts (Folkard, Monk, & Lobban, 1979; Tankova, Adan, & Buela-Casal, 1994). Therefore, the relationships between amount of night work and emotional exhaustion, engagement, and intentions to leave should be stronger for individuals who are morning-oriented. In other words, people who work mostly more night hours and are evening-oriented should experience less emotional exhaustion, more engagement, and fewer intentions to leave than night workers who are morning-oriented.

In addition to morningness/eveningness, employees' non-work schedule fit was also examined. Direct care workers are commonly single mothers (Paraprofessional Healthcare Institute, 2004) and both married and single employees often cite child care issues as a reason for working shift work, with many individuals working night work to be with their children during the day (Presser, 1994). Additionally, school, religious activities, social events, or other extra curricular
activities may conflict with work schedules. Therefore, the extent to which employees' work schedules fit with their non-work responsibilities should impact their success working night hours. The present study examines whether the extent to which an employee's schedule fits with his or her non-work commitments moderates the relationship between amount of night work and emotional exhaustion, engagement, and intentions to leave.

This study also considers shift work from an organizational perspective. Using an Organizational Justice Theory framework, this research examines how fairness perceptions about schedule assignments, policies used to determine work schedules, interpersonal treatment regarding these assignments, and information about work schedule policies are related to employee outcomes. In the LTC industry, requiring people to work undesirable shifts is inevitable because of the need to staff facilities 24 hours a day, 365 days a year. Therefore, understanding the best ways to assign and manage employee schedules is vital. Employees who believe their organizations manage their schedules fairly should be less likely to report emotional exhaustion and intentions to leave and should be more engaged in their work. Results from this study provide valuable information to health care organizations to help them improve employee engagement and design work schedules that may result in less emotional exhaustion and lower intentions to leave. For an overview of the model proposed in this study, please see Figure 1.
Chapter 2: The long-term care industry

Overview of long-term care

The phrase long-term care (LTC) is used to define the administration of both medical and social services provided in home, community, and facility-based settings to the elderly, chronically ill, and disabled (Dawson et al., 2001). The present study focuses on LTC facilities that provide services to mostly elderly patients. There are two major categories of these care facilities. Assisted Living Facilities (ALFs) are designed for long-term residence. Accommodations are usually apartments or rooms where patients receive minimal medical care but need assistance with some daily living activities, such as cooking and cleaning. Skilled nursing facilities (SNFs) provide more intense care, with patients staying for either a short period of time, often to rehabilitate after surgery, or for more long-term residence. SNFs more closely resemble hospitals in that residents either live in a single or double occupancy room. Many SNFs also have units specifically designed to care for patients with Alzheimer’s and Dementia. These units are often set up as “houses” with a limited number of residents and a greater staff to resident ratio.

Presently, the LTC industry faces a major crisis with staffing and retaining employees. A recent report found that more than 40 states in the U.S. report critical shortages of direct care employees (Dawson et al., 2001). Additionally, turnover in this industry is reported to be as high as 70% or more (Decker et al., 2003). As the number of people needing LTC increases with the aging population, LTC staffing is likely to become more difficult in the future. Not surprisingly, across the U. S. there
are calls to address the growing disparity between the need for direct care workers and the shortage of potential employees (Dawson et al., 2001; Stone & Wiener, 2001).

Similar to the national shortage, Oregon faces a severe shortage of direct care workers. In 2001, the vacancy rate for CNAs was 23.1%, and the turnover rate was 64.4% in Oregon (National Clearinghouse for the Direct Care Workforce, 2004). According to a report by the Northwest Health Foundation (2001), by 2010, there will be a 1.4% decrease in the number of direct care workers in Oregon, creating a shortage of over 7,000 the LTC workforce. It is anticipated that the state's already high rates of direct care worker vacancies and turnover will get worse as the population continues to age, and the gap between those needing care and those available to care for them will continue to widen (National Clearinghouse for the Direct Care Workforce, 2004).

The direct care workforce

Several characteristics define the direct care worker population. Nine out of ten direct care workers are women, and about 50% are White (Paraprofessional Healthcare Institute, 2004). Long-term caregivers tend to have low levels of educational attainment, with as many as half not finishing high school (Paraprofessional Healthcare Institute, 2004). Most direct care workers tend to be economically disadvantaged, with many living below the national poverty level (Crown, 1994). Additionally, one third of direct care workers in nursing homes are single mothers (Paraprofessional Healthcare Institute, 2004). Individuals working in LTC not only have economic and family stressors, but also work in demanding jobs, all of which contribute to the current staffing shortage.
Causes of staffing problems

The staffing problem in LTC stems mainly from two sources: recruitment and retention. Recruitment refers to the process of attracting and hiring qualified applicants. Recruiting quality applicants in LTC can be difficult because of low wages and demanding working conditions. Additionally, because of the current staffing shortage, there is high competition for qualified employees. Retention refers to encouraging good employees to stay with the organization and is related to turnover. Turnover rates in LTC organizations can be very high, with a national estimate for CNA turnover at 71% in 2002 (Decker et al., 2003). Additionally, there is some turnover of caregivers who leave the LTC field completely, reducing the pool of available caregivers. The combination of a lack of qualified applicants and high turnover rates make it difficult for LTC facilities to keep positions adequately staffed.

Because of the turnover rate and high demand for LTC workers, most LTC facilities are constantly hiring. This means that LTC employees have ample job opportunities. Indeed, most LTC employees are aware that they can quit their job and be hired somewhere else on the same day. In fact, one of the reasons for such high turnover is that employees often impulsively quit their jobs for a slightly higher pay rate or different work schedule at another facility. This unique job market may differentiate LTC employees from employees in other industries where employees are not guaranteed employment if they quit their jobs.

Direct care jobs usually do not pay well, with some of the lowest wages in the healthcare industry (O*NET, 2004). In fact, many caregivers earn wages that are not
much higher than working at a fast food restaurant or in a retail organization. Additionally, many of these individuals do not have health insurance (Stone & Wiener, 2001), and even when organizations do provide healthcare options to employees, it is often too expensive to afford on their low wages (Lipson, 2004). In addition to low financial compensation, direct care workers rarely receive respect and gratitude from society for their efforts. Many people see these jobs as undesirable and do not value the services direct care workers provide. Indeed, direct care workers report receiving little or no respect for their work (Stone & Wiener, 2001).

However, it is important to note that some direct care workers experience great satisfaction with their jobs because they feel good about helping people. Additionally, among other unskilled positions, the healthcare industry may be viewed as more prestigious than retail or food service. Conversations with LTC workers indicate that many of them view their jobs as very important to society and take pride in the care they provide. This reality might go against societal perceptions that the work is only negative and undesirable. However, despite the positive feelings some employees have about these jobs, there is no denying that they can often be very difficult and stressful.

In addition to low pay and lack of respect LTC caregivers often receive; these jobs are very physically and emotionally demanding. A major reason staffing in LTC can be difficult is the nature of the job itself. LTC employees face several stressors at work, including heavy workloads and low decision latitude (Sawatzky, 1996). Many caregivers work long and irregular hours and many have more than one job (Bureau of Labor Statistics, 2006a). Because LTC facilities need to be staffed at all times,
employees must work overnight and on weekends and holidays. Direct care workers are on their feet most of their shift, often for 10 to 12 hours. The job duties include assisting residents with personal hygiene, lifting patients, and cleaning. This work is physically demanding, especially since many facilities are understaffed, which further increases the workload for individual employees. Additionally, in the past ten years, the nursing home population has become older and more severely disabled, therefore increasing the workload of direct care workers (Rhoades & Kraus, 1999).

In addition to the physical demands, there are large emotional demands associated with working in the LTC industry. These demands range from the death of a resident to working in an environment where many patients are ill and/or dying to contending with grieving families. Additionally, employees often endure emotional and physical abuse from their patients and sometimes from patients' families. This physical and psychological aggression can have a negative impact on workers, leading to increased emotional exhaustion and depersonalization (Evers, Tomic, & Brouwers, 2002).

An examination of these job characteristics helps to shed light on the current staffing problems in this industry. The difficult conditions of many direct care jobs and the stress associated with them can result in a variety of negative consequences, including burnout (Bakker, Demerouti, Taris, Schaufeli, & Schreurs, 2003; Evers et al., 2002), absenteeism (Verhaeghe, Mak, Van Maele, Kornitzer, & De Backer, 2003), employee turnover intentions (Irvine & Evans, 1995), increased injury (Stobbe, Plummer, Jensen, & Attfield, 1988), reduced patient safety (Rogers, Hwang, Scott,
Aiken, & Dinges, 2004) and lower patient satisfaction (Sawatzky, 1996). Taken together, these negative job characteristics and related outcomes may be responsible for the high turnover in this industry.

**Consequences of staff shortages**

An adequate staff of quality, dedicated employees is vital to operations of LTC facilities. There are two important issues to consider when examining staffing levels. The first is simply the ratio of residents to staff members. When a facility is not adequately staffed, each employee is responsible for more residents, potentially lowering the quality of care. Additionally, because LTC is very highly regulated, many states require minimums for staff to patient ratios. The second important staffing variable is consistency of staffing. Having a consistent workforce means that residents receive care from the same person as opposed to constantly changing caregivers. Research suggests that staffing consistency is related to quality of care residents receive because caregivers can form relationships with the residents they care for, resulting in more familiarity with the residents needs, and ultimately a higher level of care (Bowers, Esmond, & Jacobson, 2000). Additionally, when facilities are understaffed, caregivers often have to cut corners to complete their work. This often means lowering the standards of personal hygiene care, eliminating range of motion exercises and walks, and an inability to give the resident personalized attention (Bowers, Esmond, & Jacobson, 2000).

Solving the staffing problem in LTC is about more than just hiring enough people to fill available positions. Due to the nature of this work, it is important to have
a stable, committed workforce that will provide quality care to their patients (Stone & Wiener, 2001). To achieve this, an organization must attract applicants and select employees who can tolerate the sometimes difficult working conditions associated with LTC while still providing quality care. Once the right people are selected, organizations must work to support employees in order to avoid the negative attitudes and stress associated with retention problems.

Several factors contribute to the LTC industry's ability to recruit and retain direct care employees, including the nature of the job, compensation, and the increasing demand for healthcare workers. The present study focuses on one job characteristic, shift work. Due to the nature of direct care jobs, facilities must be staffed 24 hours a day, 365 days a year. Therefore, staff members are required to work overnight and on weekends and holidays. As with many shift schedules in the health care industry, extended hour shift schedules (e.g., 10 and 12 hour shifts) are often utilized (Kundi, et al., 1995). Because of staffing shortages in this industry, employees often pick up extra shifts, sometimes working double shifts or many days in a row with no time off. Working these non-standard schedules in combination with staffing shortages and demanding work can negatively affect direct care workers and their residents. Due to the current labor market in LTC, employees may leave a job if they don't like their current schedule. Indeed, conversations with LTC employees and staffing coordinators suggest that work schedules are very salient to employees in selecting and remaining in jobs.
In summary, the LTC industry is facing a major staffing crisis. As the U.S. population ages, there will be an even greater demand in the future for these types of services. The staffing shortage is due to many different factors, including low pay, lack of societal value of direct care jobs, and demanding job characteristics. Research has demonstrated that staffing shortages have a negative impact on quality of patient care. Identifying job characteristics, such as shift work, that may influence employee staffing is important to help resolve the staffing problem by informing possible interventions for LTC organizations.
Overview of shift work research

The Handbook of Occupational Health Psychology defines shift work as "...any arrangement of daily working hours that differs from the standard daylight hours" (C. S. Smith, Folkard, & Fuller, 2003, p. 163). Organizations use a variety of scheduling patterns depending on the nature of specific jobs and their organizational goals. An employee's work schedule can be defined in terms of combinations of work status (full-time or part-time), hours (number of hours worked), shift (time the hours are worked), schedule (combination of hours and shifts worked, Holtom, Lee, & Tidd, 2002), and weekday versus weekend work (Demerouti, Geurts, Bakker, & Euwema, 2004).

With a move towards a 24-hour society, more and more employees in the U.S. and throughout the world are working non-standard schedules. In the U.S., more than 17% of the full-time workforce and 36% of the part-time workforce works non-standard shift work (Beers, 2000). Employees work these non-standard schedules for various reasons, including complying with job requirements, obtaining greater compensation (i.e., shift premiums), alleviating non-work conflicts (e.g., sharing child care responsibilities), and because they are unable to find other jobs with more desirable work schedules.

Work schedule research comes from psychology, human factors, industrial hygiene, and other related fields. The next section provides an overview of this research. Subsequent sections focus on specific aspects of shift work research that
were examined in the present study, including research on night work, personal characteristics that affect reactions to night work, and work schedule justice.

**Work schedule design**

Several work schedule design variables have been addressed in shift work literature, including comparisons of night versus day work (Blau & Lunz, 1999; Furnham & Hughes, 1999), fixed versus mixed schedules (Knauth, 1996), changeover times between shifts (Tucker, Smith, Macdonald, & Folkard, 1998), full versus part time work status, weekend work, and shift length (Pierce & Dunham, 1992; Tucker et al., 1998). Each of these components addresses a different aspect of a person’s schedule. For example, one part time employee may work a ten-hour shift that is on a rotating basis between night and day shifts. A co-worker may be a full time employee who works a permanent eight-hour day shift Monday through Friday that begins and ends at the same time each day. These complexities can make it difficult to design effective work schedules and conduct work schedule research. The following sections briefly outline these various work schedule variables.

*Mixed vs. fixed shift work*. Mixed versus fixed shift work refers to the level of regularity in a person’s schedule. Fixed shift schedules are those in which the employee works the same hours at the same times from week to week. A mixed shift schedule can include a regular rotating or a completely random schedule. For example, rotating schedules occur when an employee’s schedule changes from week to week at fixed intervals. A mixed schedule also can involve a different schedule each week.
Shift work in LTC  

Many organizations use mixed schedules to spread out night work among employees or to remain flexible in their staffing.

*Day versus night shift work.* Due to recent changes in the U.S. economy, night work is becoming increasingly common (Barton, 1994), with approximately 8% of U.S. employees working at evening or night (U.S. Census Bureau, 2006). Night work can be a permanent shift, or part of a rotating shift system. For example, some individuals work only at night (fixed night shift), whereas other schedules include some night shifts as well as day shifts (mixed schedule). Many health care organizations and other hourly industries use a three-shift system, with day, evening, and night shifts that each last eight hours, while others use a rotating shift system.

*Changeover times.* Changeover times of shifts, or the start and stop times of shifts, can influence the effects of night work on employees. Tucker et al. (1998) found that for employees working in the early morning, starting work later allows individuals to get more sleep, since most people go to bed at the same time regardless of when they have to get up. However, for individuals who sleep during the day, early changeovers are more favorable. Getting off work later may cut afternoon sleep short because of children, housework, and other daytime distractions. Flexibility over changeover times can help accommodate individual preferences and reduce sleep-related problems.

*Extended hours shift work.* Many people work extended shifts, as opposed to the traditional eight-hour shift. For example, some employees work ten and twelve hour shifts, but work fewer days of the week (Kundi et al., 1995). Number of hours
worked per week is significantly related to emotional exhaustion and
depersonalization for nursing home caregivers in the Netherlands (Evers et al., 2002).
Additionally, nurses working either 10- or 12-hour shifts appear to have more
subjective health complaints and expectations of adverse health effects due to schedule
than nurses working 8-hour shifts (Kundi et al., 1995).

Outcomes associated with shift work

Work schedule research has revealed a variety of negative outcomes associated
with different schedule arrangements. These effects fall into several broad categories,
including health and sleep-related, social/family-related, and organizational outcomes.
Past research has examined both outcomes associated with working specific schedules
and the congruence between a person's schedule and their non-work lives.

Health effects of non-standard work schedules. Employees working non-
standard schedules are often considered to be at greater risk for physical and
psychological problems than those working standard hours (Costa, 1996). Shift work
has been associated with sleep deprivation, fatigue, increased accidents and injuries,
gastrointestinal disorders, cardiovascular disorders and women’s reproductive
disorders (for a review see Smith, Folkard, & Fuller, 2003). Parkes (1999) found that
gastric complaints and sleep problems were related to non-standard shift work.
Furthermore, Khaleque (1999) found that the majority of mixed shift workers
perceived that their work adversely affected health.

Shift work has also been linked to psychological problems. For example,
Healy, Minors, and Waterhouse (1993) proposed that shift work might lead to a
certain amount of learned helplessness, which can lead to depression. Participants who made an external attribution to the temporary stress of shift work had more intense emotional responses and more psychosomatic complaints. These affective responses were strongest following night shift work (Healy et al., 1993). However, in a conflicting study, Goodrich and Weaver (1998) found no relationship between shift work and depression. Working evening shifts has also been related to psychological distress (Shields, 2002). Thus, although some evidence suggests a link between shift work and psychological problems, more research is needed in this area.

Social/Family outcomes of non-standard work schedules. There are mixed findings concerning the effects of non-standard work schedules on an employee’s family and social life. Data from the National Survey of Families and Household indicate that among married couples, 11.4% of husbands and 8.1% of wives work non-standard shifts (Presser, 2000). Bourdouxhe and colleagues (1999) found that extended shifts (12 hours) did not result in work load-related, conjugal, or family problems. However, most research indicates a negative relationship between shift work and family and social life outcomes and suggests that family and social variables may moderate the relationship between shift work and outcomes.

Khaleque (1999) found that the majority of rotating shift workers reported that their work schedules disturbed their family and social lives, leisure activities, and mealtimes. Shift work has also been linked to difficulty scheduling family activities, less time in family roles, and higher levels of work family conflict (Staines & Pleck, 1984). Working non-standard schedules has also been associated with increased
instance of separation and divorce for couples with children (Presser, 2003). Factors influencing the relationship between shift work and higher divorce rates include whether the wife worked night or rotating shifts, whether the couple had children, and the length of the couple's marriage (Presser, 1994).

**Organizational outcomes of shift work.** In addition to the outcomes associated with shift work for employees, there are also several organizational outcomes of shift work. This topic has been examined in the research literature much less than individual outcomes. However, research on the organizational outcomes of shift work is needed to help organizational leaders understand the importance of designing work schedules that alleviate or at least minimize the negative outcomes for both individuals and organizations. Although employee health related outcomes are critical, unfortunately in some cases the effect on the organization needs to be demonstrated in order to stimulate action. Therefore, demonstrating the organizationally relevant outcomes associated with work schedules may be helpful in improving work schedule related issues for employees.

Several aspects of work schedules can lead to meaningful organizational outcomes. Jamal (1981) found that nurses working fixed schedules reported better mental and emotional health, more job satisfaction, higher levels of social involvement, and stronger organizational commitment than those working mixed schedules. Jamal also found that nurses on fixed shifts reported fewer turnover intentions and were less likely to be absent or tardy than those working mixed shifts. In a similar study, Jamal and Baba (1992) concluded that mixed shift workers reported
more job stress and turnover intentions, and less organizational commitment, job satisfaction, and work hours satisfaction than fixed shift workers. Pattanayak (2002) found that for supervisors in India, individuals working a three shift non-standard schedule reported lower levels of organizational commitment than those working a standard (9-5) schedule. These results suggest that organizations may be able to improve job attitudes and reduce withdrawal thoughts and behaviors through effective work schedule management.

In the healthcare context, long work hours are related to patient safety, with employees working shifts longer than twelve hours or over 40 hours a week having increased risk of making an error (Rogers et al., 2004). Night work is also related to nurses' well-being, with night workers experiencing less job satisfaction, and lower intrinsic motivation than day and rotating shift workers (Jamal & Baba, 1997). Additionally, when nurses' schedules permit them to have control over their social lives, they are more satisfied and less likely to report intentions to leave their jobs (Choi, Jameson, Brekke, Anderson, & Podratz, 1989). Taken together, this research suggests that several work schedule variables are related to important outcomes in the healthcare context.

**Shift work interventions**

Several interventions have been suggested to help individuals deal with the negative effects of shift work. Some shift work interventions revolve around the concept of “tricking” the body’s natural circadian rhythm; through such strategies as prescription sleep aids and placing bright lights in the work environment. Some
organizations also use education and counseling programs to assist individuals with shift work adaptation (Smith et al., 2003). Another approach to curbing the negative effects of shift work is to change the nature of the work environment itself, as well as the policies and procedures used to design schedules. Although there is great potential in these methods, little research has been conducted to evaluate the effectiveness of organizational change interventions for shift work.

*An in-depth focus on day versus night work*

The majority of shift work studies include night work in some fashion. Night work presents a unique set of considerations for employees, including increased risk of occupational violence (Salminen, 1998), affective disturbances such as loneliness and irritation (Bohle & Tilley, 1998), poor sleep quality (Bourdouxhe et al., 1999; Parkes, 2002), increased social/domestic problems (Presser, 2000), and more frequent accidents (Williamson & Feyer, 1995). Employees working night shifts may also have less job discretion and greater exposure to hazardous physical work conditions (e.g., loud noise, poor air quality) than their day working counterparts in the same job (Parkes, 1999). However, certain employees may prefer night work because it fits with their non-work responsibilities, such as child care arrangements and second jobs (Barton, 1994).

Night work can be a permanent shift, or part of a rotating shift system. A fixed night shift means that individuals work only at night, whereas a mixed schedule includes both night and day shifts. There is debate in the literature concerning the advantages and disadvantages of fixed and mixed night work schedules. Permanent
night shift work may be more desirable because it allows an employee's circadian rhythm to adjust to a nocturnal schedule (Barton, 1994). For example, Barton found that nurses working permanent night shifts reported fewer health, sleep, social, and domestic problems than nurses working mixed schedules. However, a full adjustment is often difficult or impossible to accomplish because employees often revert back to staying awake during the day and sleeping at night on their days off. Therefore quickly rotating system, with as few night shifts as possible, may be preferable to permanent night work (Knauth, 1996).

Sleep related outcomes of night work. One of the most heavily studied topics concerning night work and health is sleep deprivation and circadian rhythm disturbances. Working non-standard schedules can disrupt the body's natural cycle (C. S. Smith et al., 2003). Human circadian rhythms generally function on a twenty-four hour cycle, based on a light-dark cycle. However, since night workers work when it is dark and sleep during the day, their rhythms are often disturbed, and night workers often get less sleep and have more disturbed sleep than employees who work during the day (Kogi, 1982). Khaleque (1999) found that work schedules affect quantity of sleep, with night workers sleeping the least number of hours. These sleep disturbances can lead to frequent lapses of attention, increased reaction time, and increased error rates on performance tasks (Khaleque, 1999). Additionally, working a night shift can be difficult because society functions on a diurnal schedule. Consequently, night workers may miss out on day activities with family and friends because they are sleeping.
Health-related outcomes of night work. Disrupted sleep and circadian rhythm patterns can lead to several health consequences, including fatigue and gastrointestinal problems (Costa, 1996). There also is evidence that individuals working night shifts may engage in poorer health behavior than day workers. For example, missing standard meal times and lack of availability of healthy food may lead to unhealthy eating habits (e.g., eating out of a vending machine during a break). High instances of overweight shift workers may be due to their diet and disturbances of gastrointestinal and psychophysiological functioning (Kivimaki, Kuisma, Virtanen, & Elovainio, 2001). Thus, it is not surprising that shift workers are 1.5 times more likely to be overweight than day workers (Kivimaki et al., 2001). Shift workers with disrupted sleep patterns also may consume alcohol in greater quantities to help them fall asleep after a shift (Kivimaki, et al., 2001). In addition, workers may smoke or consume large amounts of caffeine to stay awake during night or early morning shifts. Often, this self-medication creates a cycle of consuming large amounts of alcohol to fall asleep and caffeine to stay awake. In a study of Canadian workers, men who worked an evening shift were more likely to be daily smokers than those working day shifts (Shields, 2002). Overall, research suggests that night workers are more likely to have a variety of health-related problems than people working standard schedules.

A systems perspective of shift work research

Traditional Industrial/Organizational (I/O) psychology research often focuses on the individual level with little discussion of the larger environment or culture of the organization. A systems perspective provides a conceptual framework for
understanding how the context of the organization influences the individual level phenomena that researchers often study. Lendaris (1986) defines a system as a focal unit with attributes perceived relative to its external environment where that unit contains sub-units which operate together to manifest the perceived attributes of the unit. Using this definition, typical systems studied in I/O Psychology include individuals, work teams, and organizations.

A major advantage of the systems perspective is the consideration of the focal units' relevant environment. The environment of the system is defined as anything which is not included as part of the perceived unit. More specifically, the relevant environment, or supra-system, includes the aspects or the components of the environment that are relevant to the task at hand (Lendaris, 1986). Determining the relevant aspects of the environment is vital because of the vast array of environmental factors surrounding every system. Focusing on those aspects of the environment that are relevant to the research question provides a valuable context for the study focus. For example, in the study of work schedules, the relevant environment might include the organization's culture, supervisor-subordinate relationships, relationships among co-workers, the legal environment, and the production goals of the organization.

In addition to the supra-system, or relative environment, Lendaris defines a focal unit's sub-system as the interaction of sub-units that work together to manifest the attributes of the focal unit. For example, if an individual is the focal unit, the sub-units include the individual's characteristics (e.g., personality, demographics). Utilizing a systems perspective to identify the focal unit and its sub- and supra-
systems can help researchers better define their research questions and interpret their research findings.

In addition to identifying the focal unit and relative environment, the systems perspective can also guide researchers in identifying potential biases in their studies. Observers of systems bring with them unique perspectives, or perceptual filters, which can influence how they approach a research question, including how data are collected and analyzed (Lendaris, 1986). For example, the choice of variables to include in a study is partly determined by the researcher's ideas about what is most important. These filters are developed from individual assumptions, attitudes, and experiences. Acknowledging one's own perceptual filters can assist researchers in acknowledging potential underlying bias and considering how these preconceived notions might influence their research.

The systems perspective can contribute to the study of work schedules. Considering the relative environment of the individual shift worker can provide insight into how work schedules influence employee outcomes. Aspects of the relevant environment for a shift worker in LTC include their family and non-work lives, state regulations regarding staffing ratios, the staffing coordinator at the facility, relationships among co-workers (e.g., willingness to trade shifts), and organizational policies regarding scheduling. In the present study, one aspect of a shift worker's relevant environment, work schedule justice was examined. Work schedule justice considers an organization's scheduling policies, the staffing coordinators treatment of
the employee, and the communication an employee receives regarding his or her work schedule.

Considering the sub-system of a shift worker can also help researchers understand why certain individuals are more successful at shift work than others. For example, the way various individual differences of a shift worker manifest into that individual’s attributes influences their ability to successfully work a night shift. In the present study, two individual factors, or sub-units were examined. Including both sub-system and supra-system elements of the shift worked can provide a more rich understanding of how shift work is related to relevant organizational outcomes.

**Gaps in current shift work literature**

Although there are numerous empirical studies investigating shift work, there are several gaps in the current literature. In spite of the number of studies, very few researchers have presented or tested theoretical models to explain the process through which shift work affects employee outcomes. For example, in a review of models of shift work and health, Taylor, Briner, and Folkard (1997) suggest a need for more mid-range theories linking specific features of shift work to relevant outcomes. This type of theory can explore how specific schedule features relate to certain outcomes, rather than explaining how shift work generally relates to all possible outcomes. Totterdell (2005) echoes this call, calling for more theory development and testing in shift work research. The present study examines how personal characteristics and perceptions of work schedule justice influence the relationship between shift work and employee outcomes. Taken together, results of this study should contribute to
understanding how both individual and organizational shift work-related variables influence employee outcomes.

One line of shift work research that has received consistently mixed results is the role that personal characteristics play in buffering shift workers from the negative outcomes associated with night work. Studying both circadian rhythm and non-work schedule fit differences simultaneously is useful because it can inform employee interventions related to shift work. For example, if an organization knows that morning-oriented people tend to be less successful in the night shift, they can use this information to help their morning-oriented adjust by providing education on night work adaptation. Although both these variables have been addressed in the literature, there have not been clear findings on how they influence night work. The present study examines the influence of both these individual factors to determine which of these variables are influential in buffering the negative effects associated with night work.

Another major gap in the shift work literature is a lack of studies examining organizational policies associated with shift work, such as employee control over schedule, flexibility in scheduling, and fairness of procedures used to assign work schedules. While a large body of research has examined outcomes associated with various shift work designs, much less research has examined the impact of the processes used to design and assign work schedules. The few studies that have examined these issues provide some evidence that when employees have input, flexibility, and choice in their schedules they experience more positive outcomes (e.g.
The present study integrates this research by using an organizational justice framework. Examining the impact of policies associated with work schedules is a valuable avenue for shift work researchers to further understand how shift work influences employee outcomes.
LTC employees often work schedules that many people would describe as unpleasant, such as working the night shift, on holidays, or on weekends. Because of the nature of the work, facilities must be staffed 24-7, 365 days a year. Although few people would choose these schedules, there are certain individuals who may be more likely to tolerate or even prefer them. For example, some people may have no problem working the night shift while others might find it very difficult to stay awake all night and sleep during the day. People who work in the LTC industry often describe the night shift employees as being a certain type of person that enjoys that schedule.

Certain individuals may have characteristics or circumstances that reduce or exacerbate the potentially negative effects of night work. Identifying individual variables related to night work is important for several reasons. First, from a selection perspective, identifying characteristics that are related to night work tolerance can help organizations select people who are more likely to be successful working a certain shift schedule. Additionally, understanding which employees may have difficulty adapting to specific shifts can help target interventions aimed at reducing the negative effects of night work. Finally, looking at personal characteristics beyond standard personality variables can help organizations understand what individual variables may make it more difficult for their employees to adapt to night work. This information can provide further insight to interventions.
In the present study, the relationship between personal characteristics and shift work was explored through a Person-Environment (P-E) fit perspective. The concept of P-E fit suggests that some individuals have certain characteristics and preferences that are more likely to be congruent with certain organizational characteristics than others. Work environments and jobs differ in terms of many variables, including organizational culture, norms, supervisor-subordinate relationships, and job duties. Certain people may be more suited to work in certain types of environments or jobs than others. For example, an extraverted person might have a better fit working in a busy, customer facing position, as opposed to sitting at a computer all day with little to no personal interaction. Research on P-E fit has been extended to examine fit between employees and their organizations (P-O fit), supervision (P-S fit), teams (P-T fit), and jobs (P-J fit) (Krisof-Brown, Zimmerman, & Johnson, 2005). Although most research on various forms of P-E fit considers employee preferences, the present study focuses on how certain personal characteristics influence the relationship between an employee's characteristics and his or her work schedule.

According to the P-E fit perspective, a mismatch between an individual and his or her environment, job, organizational culture, or team results in psychological, physical, and/or behavioral strain (Edwards & Van Harrison, 1993). This mismatch can take on two different forms. Needs-supplies fit focuses on whether employees' needs, desires and preferences are met by their jobs. Demands-abilities fit is based on whether employees have the knowledge, skills, and abilities to perform job
requirements (Edwards, 1991). When employees' needs are not met or they do not have the abilities to successfully perform their jobs, strain and other negative outcomes can result (Edwards, 1991; Edwards & Van Harrison, 1993).

The present study considers the fit between employees and their work schedules from a demands-abilities fit perspective. Using this framework, the present study examines the fit between an individual and his or her work schedule, or Person-Schedule (P-Sc) fit. The demands of night work can be thought of as the need to remain alert and awake to successfully perform the job tasks required of night shift workers. The abilities required of the employees include the capacity to stay awake and alert at night over a period of days and perform the required job tasks even when tired. Additionally, the employee must be able to work the hours scheduled. A P-E fit framework suggests that a night-shift employee who has difficulty staying awake and alert on his or her shift will have a mismatch that will eventually result in strain and other negative outcomes.

*Person-schedule fit in LTC*

Several different individual factors may influence P-Sc fit for LTC employees. For example, many LTC workers describe night workers as being a certain "breed" or having certain characteristics that make them able to successfully work that shift. Some research has explored this concept, suggesting that some of the negative health and well-being outcomes associated with night work are less pronounced in certain individuals. For example, people who are more evening-oriented may experience
fewer sleep and health-related problems associated with shift work (Akerstedt & Torsvall, 1981; Steele, Ma, Watson, & Thomas, 2000).

Differences in morningness/eveningness and non-work commitments have been related to more positive outcomes when working the night shift.

Morningness/eveningness. Possibly the most supported tolerance factor for night work is morning/evening orientation. This individual difference suggests that certain people have preferences for the extremes of the day, and when given the opportunity, will act in accordance with these preferences (Horne & Ostberg, 1976).

Morning types prefer activities early in the morning, and evening types prefer activities in the late evening, suggesting that morning types should be more suited for early morning work and evening types should be best on late night shifts (Tankova et al., 1994).

Humans are biologically geared towards daytime activities and sleep at night. Circadian rhythms refer to the performance of various body functions that occur on a 24-hour cycle. One of the most commonly referred to circadian rhythms is the daily change in body core temperature. Humans are at their coolest in the early morning and their warmest in the late afternoon and early evening. These temperature changes can affect performance on physical and mental tasks (Oxford University Press, 1997). Other circadian rhythms include physical strength, heart rate, metabolic rate, wakefulness, blood pressure, and flexibility. However, certain individuals' daily cycles may vary somewhat (Oxford University Press, 1997; C. S. Smith et al., 2003).
Morningness/eveningness is defined by these biological differences, as well as preferences, affect, and behaviors regarding different times of day (Kerkoff, 1985). Research has demonstrated a link between individuals' who state preferences for activities at extremes of the day and actual biological differences in their circadian rhythms (Tankova et al., 1994). Therefore, several self-report measures have been developed to assess individual preferences for morning or evening activities.

The concept of morningness/eveningness has been applied to shift work as a tolerance factor for working certain shift schedules, particularly night work. Although results are mixed, some research suggests that people who are more evening-oriented might be more tolerant of shift work; experiencing fewer sleep and health-related problems associated with shift work (Akerstedt & Torsvall, 1981; Steele et al., 2000). For example, morning-oriented people tend to have more rigid sleep habits (Hildebrandt & Stratmann, 1979; C. S. Smith et al., 2003), which can cause them to have a harder time adapting to a nocturnal or rotating sleep cycle. Additionally, shiftworkers who are morning-oriented experience reduced alertness during the night shift (Ognianova, Dalbokova, & Stanchev, 1998).

Compared to morning-oriented workers, evening-oriented workers are more likely to work night shifts (Paine, Gander, & Travier, 2006). People who are more evening-oriented tend to spend less time in bed during the week compared to their ideal sleep needs (i.e., don't get enough sleep), spend more time in bed during the weekend, have a later bedtime and wake-up time especially on the weekend, have more irregular sleep/wake habits, and consume greater amounts of caffeine (Taillard,
Philip, & Bioulac, 1999). These erratic sleep patterns of evening-oriented workers may enable them better able to adapt to non-standard shift schedules, such as night work. For instance, because they are more flexible in their sleep habits, evening-oriented people sleep more during the weekends to catch up on sleep (Taillard et al., 1999).

Based on a P-Sc fit perspective, it seems logical that evening-oriented workers should be more successful at night work. Although most research on morning and evening orientation has focused on sleep and physical health related outcomes, it follows that these individual characteristics might also act as a buffer for more attitudinal outcomes, such as emotional exhaustion, employee engagement, and employees' intentions to leave. For example, if a morning-oriented person works the night shift, they may be more likely to have sleep problems and trouble staying awake on the shift than more evening-oriented individuals. The fatigue associated with a lack of sleep also may cause morning-oriented people to be more susceptible to emotional exhaustion, and more likely to want to leave their jobs, or at least the night shift.

Non-work schedule fit. Shift workers' non-work demands can make it more difficult for them to get adequate sleep when working on the night shift. Women may be more vulnerable to the negative effects of night work because they also often have household and childcare responsibilities that prevent them from getting enough sleep (Presser, 1995). For example, the number of domestic commitments in a household is related to reduced sleep duration, more sleep difficulties, and reduced on-shift alertness (Spelten, Totterdell, Barton, & Folkard, 1995). Additionally, married night

However, some people may prefer night work because it allows them to spend time during the day with their children. For example, some couples rotate day and night shift work to avoid expensive childcare costs (Presser, 1995). Therefore, the influence of family may be more related to whether peoples schedules’ fit with their non-work demands, than the actual shift that they work. Indeed, in a study of physicians, the relationship between number of hours and burnout was moderated by the extent to which their work schedule met the needs of the employee, and his or her spouse and children (Barnett, Gareis, & Brennan, 1999). Therefore, if a night worker works that schedule because it facilitates his or her non-work demands they may report more positive outcomes than a night workers whose schedule hinders his or her demands.

Non-work schedule fit refers to an employee’s perceptions of how convenient certain aspects of their schedules (e.g., pattern of days) are with their non-work responsibilities. This concept is somewhat similar to working a preferred shift or voluntary shift work, but is still a different concept. Non-work schedule fit captures compatibility with non-work lives, but does not ask employees to indicate their preferred shift in the absence of other constraints. For example, even if an employee’s
schedule fits with their non-work demands, he or she still might not enjoy working the night shift or prefer that shift if their circumstances were different. Additionally, an employee may be working a shift they don’t prefer but if they do not have a lot of non-work responsibilities that shift may not create conflict. Understanding how employees’ non-work lives interact with their work schedules to influence outcomes can have important implications when developing interventions and supports for employees.
Chapter 5: Work schedule justice

Organizational Justice Theory

Organizational justice is a term used to describe employees' perceptions of fairness. The concept of organizational justice extends prior research examining the effects of justice perceptions in various social settings to the workplace. Homans (1958; 1961) viewed interactions between people as involving a social exchange of both tangible and intangible goods. For example, an employee might provide his or her supervisor with hard work and loyalty, and the supervisor in return can provide favorable work assignments or promotion opportunities. However, if one member of the exchange believes what she or he is not getting as much out of the relationship as what she or he is contributing, she or he may perceive unfairness and leave the relationship. Today, the concept of organizational justice has been extended to examine four types of justice; distributive, procedural, interpersonal, and informational.

Distributive justice. The first conceptualization of organizational justice was largely based on Adams' (1965) Equity Theory, and is referred to as distributive justice. Equity Theory posits that people compare their input and output ratios to those of similar others. Examples of outcomes include pay and benefits, status symbols, and good supervision. Examples of inputs include education, experience, skills, and effort on the job. Equity theory posits that when people perceive a discrepancy between inputs and outcomes they may respond behaviorally (e.g., withdrawal, reducing...
inputs) or cognitively (e.g., reevaluating outputs and inputs, selecting a different comparison other).

Distributive justice concerns employees' perceptions about the fairness of the outcomes they receive at work (e.g., pay, promotions). Individuals evaluate the outcomes they receive by comparing them to outcomes received by similar others in the same position (e.g., coworkers) or their own past experiences (e.g., previous jobs). If these outcomes are perceived to be less favorable than these comparison others, perceived injustice results. There are three distributive rules people use to evaluate the fairness of outcome allocation. Equity refers to the traditional distributive rule presented by Adams, which states that individuals should receive outcomes equal to their contributions. For example, employees with greater skill levels should be paid more. The second distributive rule, need, states that individuals should receive outcomes based on their needs. Finally, equality refers to a distributive rule where everyone receives the same outcomes, regardless of their inputs (Leventhal, 1976). The application of these different rules depends on the social context and the reward at stake (Deutsch, 1975). However, in the work context, the equity rule is most commonly applied.

Regardless of the distribution rule used, perceptions of inequity can influence employees’ attitudes and behaviors. For example, if employees believe they are giving more than they are receiving, they may take action to reduce the perceived inequity. One way for the individual to achieve this resolution is by reducing his or her inputs (e.g., effort in work). Alternatively, an individual may attempt to either reduce or
increase their outcomes (e.g., asking for a raise, or changing their comparison other). Research suggests that when employees report negative perceptions of distributive justice, they are more likely to experience job dissatisfaction (Colquitt, 2001; Dailey & Kirk, 1992), psychological strain (Francis & Barling, 2005), reduced organizational commitment, increased job withdrawal (Colquitt, 2001), and are more likely to engage in counterproductive work behaviors (Fox, Spector, & Miles, 2001).

Procedural justice. Procedural justice refers to the fairness of the processes and procedures used to make distributive decisions. This concept was first explored in a legal context. Thibault and Walker (1975) introduced the concept of process control, which refers to the amount of control individuals have over the procedures used to settle their grievances. Research in the legal context exploring process control indicates that when people perceive they have process control, both positive and negative verdicts are seen as more fair and are better accepted (e.g., Walker, Lind, & Thibault, 1979). Procedural justice was later applied to the workplace, examining such process variables as the extent to which organizational allocation procedures suppress bias, ensure consistency, and rely on accurate information (Leventhal, 1980; Leventhal, Karuza, & Fry, 1980).

Procedural justice differs from distributive justice in that it focuses on the process used to determine outcomes, rather than the fairness of the outcomes themselves. Research suggests that individuals will react more positively to negative outcomes if they perceive the procedures that lead to those outcomes were fair than if they perceive the procedures were unfair. For example, perceptions about the fairness
of the processes used by organizations to make decisions and manage employees can have a significant impact on employee and organizational outcomes. Negative perceptions of procedural justice have been related to organizational commitment and trust in supervisor (Folger & Konovosky, 1989), turnover intentions (Konovsky & Cropanzano, 1991), outcome satisfaction, trust (Colquitt, 2001), job satisfaction, and organizational commitment (Colquitt, 2001; Konovsky & Cropanzano, 1991).

*Interactional Justice.* More recently in the literature is the emergence of the concept of "interactional justice" (Bies & Moag, 1986). This extension emerged as a result of research on procedural justice examining what procedural elements (e.g., voice in decision making, fair treatment by authority figures) enhance fairness perceptions (Greenberg, 1987). That is, while procedural justice focuses on the structure of how decisions are made, interactional justice focuses on the way these procedures are carried out. Although there has been debate in the literature as to whether interactional justice is distinct from procedural justice (e.g., Cropanzano & Greenburg, 1997; Lind & Tyler, 1988), many researchers now recognize them as distinct constructs (e.g., Bies, 2005; Skarlicki & Folger, 1997). Furthermore, interactional justice has been further divided into two distinct concepts; interpersonal and informational justice (Greenberg, 1990) and meta-analytic research supports the four-factor model of organizational justice, with each of the justice dimensions having unique relationships with various organizational outcomes (Colquitt, Conlon, Wesson, Porter, & Ng, 2001).
Interpersonal justice. The concept of interpersonal justice posits that the way people are treated by decision makers at work is an important influence on their perceptions of fairness (Colquitt, 2001). While traditional procedural justice focuses on the structure of allocation decisions, the quality of interpersonal treatment a person perceives is also an important determinant of fairness perceptions (Greenberg, 1993). Examples of positive interpersonal treatment include respect, honesty, and timely feedback (Bies & Moag, 1986). The extent to which decision making authorities are truthful, respectful, and considerate in communicating decisions (Bies & Moag, 1986). Interpersonal justice is related to trust in management (Keman & Hanges, 2002) and general job satisfaction (Cohen-Charash & Spector, 2001).

Informational justice. Informational justice refers to the explanations employees receive about work-related procedures or decisions (Colquitt, 2001). Greenberg (1993) describes informational justice as relating to the procedures that demonstrate regard for peoples’ concerns. When employees are informed about the rationale behind a decision with negative outcomes, they are more likely to perceive it as fair and accept the decision than when they are given no information (Bies & Shapiro, 1987). However, not all information leads to positive perceptions of justice. Information must be based on sound reasoning and must be perceived as sincere (Bies, Shapiro, & Cummings, 1988). Informational justice is related to benefit satisfaction (Tremblay, Sire, & Pelchat, 1998) general job satisfaction, and trust in management (Keman & Hanges, 2002).
Organizational justice and organizational outcomes

Organizational justice research has been applied to specific workplace issues, such as employee selection (Gilliland, 1993; Truxillo, Bauer, Campion, & Paronto, 2002), compensation (Folger & Konovsky, 1989; Greenberg, 1990), and drug testing (Truxillo, Normandy, & Bauer, 2001). Additionally, a great deal of research has been conducted examining the importance of fairness in applicant reactions. Gilliland's (1993) model is perhaps the most well known framework for exploring fairness perceptions in selection. This model presents a series of "justice rules" that influence applicant reactions. For example, Gilliland proposed that selection procedures are seen as more procedurally fair if they are job-related, consistently applied to all applicants, if applicants receive honest feedback, have the opportunity to ask questions, and are treated with respect.

Organizational justice theory has also been applied to drug testing in the workplace. Procedural justice seems to be especially salient in influencing applicant and employee reactions to drug testing. For example, Paronto, Truxillo, Bauer, and Leo (2002) found that employed adults perceived drug-testing policies as being fairer when the job was safety sensitive. Additionally, policies offering voluntary drug treatment (e.g., employee assistance programs) in response to failed drug tests were perceived as fairer than policies requiring mandatory treatment or resulting in termination.

Taken together, these results suggest that an organizational justice framework can be applied to a variety of workplace issues. One such factor that this framework
Shift work in LTC

seems well suited for is work schedule policies. Although there is an established body of research examining outcomes associated with different types of shift work arrangements (e.g., C. S. Smith et al., 2003) far less research has examined outcomes associated with policies and procedures used to assign work schedules. Organizational justice theory provides an integrative conceptual framework for examining schedule policy related issues identified in previous research such as having a desirable number of hours and shift worked (Holtom et al., 2002), work schedule flexibility (Ng et al., 2005), and control over work schedule (Barton, 1994; Barton, Smith, Totterdell, Spelten, & Folkard, 1993; Morrow, McElroy, & Elliot, 1994). I will describe below how these different shift work variables apply to the four justice facets.

**Work schedule justice**

The four-factor organizational justice framework is useful in examining employee outcomes related to work schedules. Work schedule justice is a concept first introduced by Sinclair, Ford, Hahn, Buck, and Truxillo (2007). Sinclair and colleagues, applied the four-component justice framework to work schedules and related polices.

**Distributive schedule justice** reflects an employee's sense of the fairness of his or her actual schedule in comparison to those of other people, to his or her own needs, or relative to his or her contributions to the organization (Sinclair et al., 2007). For example, if two employees have equal tenure and experience but one never has to work weekends, the weekend worker may perceive less distributive schedule justice. A more distributively just approach would be to employ a schedule where weekends
are rotated, so every employee has some weekends free. Another important aspect of distributive schedule justice is schedule stability. A schedule may be perceived as unfair if employees are frequently scheduled for extra shifts with little or no advanced notice, or shifts they were told they would not have to work when they were hired, such as night shifts.

Perceptions of fairness or satisfaction with work schedules have been related to a variety of positive outcomes for employees. In a sample of female physicians, the extent to which schedules met the needs of employees and their families mediated the relationship between number of hours worked and burnout (Barnett et al., 1999). Additionally, nurses who work their desired work schedules report fewer rest and sleep-related problems, less interference with their family and social activities, greater satisfaction towards their current work schedules and better quality of service to patients (Havlovic, Lau, & Pinfield, 2002). This research suggests that outcome fairness regarding schedules may be related to positive employee outcomes.

*Procedural schedule justice* captures whether procedures used to determine work schedules are applied consistently, are free from bias, and include opportunities for people to provide input (Sinclair et al., 2007). When making schedules, employers may assume which work arrangement employees prefer without getting direct input. For example asking employees about their preferences and making schedules as compatible as possible with these preferences may increase employees' perceptions of fairness and job attitudes. The ability to adjust ones schedule for personal needs and
the amount of personal control over one's schedule both contribute to perceptions of procedural schedule justice.

One important aspect of procedural schedule justice is the amount of control employees have over the shifts they work. For example, even though there are negative effects associated with night work (C. S. Smith et al., 2003), employees who choose to work at night suffer fewer negative consequences, are better able to adapt to night work, and report more positive job attitudes than employees who work the night shift but would prefer a different schedule (Barton, 1994). Similarly, both full time and part time employees who are awarded preferences for scheduling report they are more satisfied and committed, exhibit higher in and extra role behaviors, and are less likely to turn over (Holtom et al., 2002). Furthermore, scheduling control has been positively related to higher levels of commitment and satisfaction, lower levels of burnout, work-home balance, distress, and poor general health (Fenwick & Tausig, 2001; Krausz, Sagie, & Bidermann, 2000).

Interpersonal schedule justice captures the extent to which authority figures (e.g., supervisors, staffing coordinators) treat people well during the implementation of work schedule assignment processes. Many LTC facilities have a staffing coordinator that is responsible for scheduling all employees. This individual can be extremely influential on employee perceptions of justice. For example, if an employee needs to ask for a shift change, the staffing coordinator can be understanding and try to help the employee find someone to cover a shift or be unhelpful and rude. If the former occurs, even if there is no one to cover the shift, the employee may not
experience feelings of unfairness because she knows the staffing coordinator has honestly tried to help. A staffing coordinator who treats employees with respect, does her best to help accommodate personal and family needs, and genuinely cares about employees will generate increased perceptions of interpersonal schedule justice.

Finally, *Informational schedule justice* reflects the extent to which schedule makers explain schedule processes, communicate changes in a timely manner, and tailor communications to individual needs. Because of staffing shortages, high turnover, and maintaining patient-staff ratios, LTC facilities often have more shifts to fill than employees scheduled. These demands often result in direct care workers working double shifts and overtime. A staffing coordinator that is not well organized or a facility that is severely understaffed may cause employees' schedules to continuously change. This can create problems for employees trying to plan family and social events, arrange childcare, or enroll in school. For employees to have positive perceptions of informational schedule justice, staffing coordinators must communicate schedules in advance and explain changes when they are made. Research has demonstrated that communication is significantly related to employee satisfaction in other contexts. For example, communication about benefits plans was found to be an important predictor of benefit satisfaction (Tremblay et al., 1998).

These studies, combined with other research that demonstrates the importance of perceived justice, suggest that justice perceptions about work schedules should be related to employee attitudes. Indeed, Sinclair et al. (2007) found that the set of the four work schedule justice facets predicted life satisfaction, physical pain,
gastrointestinal distress, and work-school conflict in employed college students.

Organizations differ in the fairness of the policies they use to assign work schedules and the perceived fairness of the procedures used to determine work schedules may have important effects on employee attitudes.

*Interactions between justice facets*

In addition to examining the direct effects of justice perceptions on outcomes, another way to view the relationships between work schedule justice and outcomes is by examining interaction effects between the different justice facets. The majority of past research on interactions has explored relationships between procedural and distributive justice. There are several related ways these relationships are conceptualized in the literature. First, when outcomes are unfavorable (i.e., low distributive justice) procedural justice is more strongly related to employee outcomes (McFarlin & Sweeney, 1992; Greenberg, 2004). In other words, when people receive the outcomes they want, they are less concerned with the procedures used to allocate those outcomes. Similarly, when procedural justice is low, there is a stronger relationship between distributive justice and employee outcomes. However, high procedural justice can help mitigate some of the negative outcomes associated with low distributive justice. Finally, some research suggests that a combination of low procedural and distributive justice leads to especially negative reactions (Folger, 1987). In other words, when employees receive negative outcomes and perceive that the procedures used to determine those outcomes are inequitable, they are likely to perceive the situations as particularly unfair.
Brockner and colleagues (1994) found that outcome negativity and procedural justice interact to influence reactions of job loss victims and survivors. More specifically, procedural justice moderated the relationship between outcome negativity and individual reactions such that there was only a significant relationship between the two when procedural justice was low. This research suggests that at least in the layoff context, fair procedures may mitigate some of the negative employee outcomes associated with layoffs.

Some researchers view distributive justice as a moderator of the procedural justice-outcome relationship. In this framework, whether the outcome is favorable to the individual determines how negatively they will react to unfair procedures. In other words, when an outcome is unfavorable, perceptions of procedural injustice are more influential to negative employee outcomes. Similarly, McFarlin and Sweeney (1992) found that the relationship between perceptions of procedural fairness affected organizational commitment only when distributive justice was low. The relationship between procedural justice and psychological distress is also more pronounced when distributive justice is low (Tepper, 2001). Taken together, this research suggests that when outcomes are perceived negatively, such as working a shift one does not want to work, perceptions of procedural justice should be especially important.

Overall, this research suggests that distributive schedule justice may interact with procedural schedule justice, interpersonal schedule justice, and informational schedule justice to influence employee emotional exhaustion, engagement, and turnover intentions. Indeed, Sinclair and colleagues (2007) found significant
interactions between various facets of work schedule justice and health and well being outcomes in a sample of employed students. Although the majority of past research has focused on the relationships between distributive and procedural justice, it follows that these relationships should be similar with interpersonal and information justice. Like procedural schedule justice, interpersonal and informational schedule justice may buffer the effects of negative distributive schedule justice. Even if employees perceive their schedules are unfair, if they feel they are treated with respect and dignity regarding their schedules they may have fewer negative outcomes. For example, an employee may be unhappy by repeated requests for overtime and changes to his or her schedule. However, if the staffing coordinator asks for rather than dictates the schedule change and thanks the employee for his or her flexibility the employee may not react as negatively as they might if they simply read the changes from a posted schedule.

Similarly, having information about schedules may help to buffer some potential negative effects of perceptions of unfair schedules. For example, an employee may be scheduled to work two holidays in a row and feel that the schedule is unfair. However, if the staffing coordinator explains why the schedule was made and promises the employee will have the next holiday off (and keeps that commitment) the negative effects might be reduced.

The potential interaction of distributive schedule justice with procedural, interpersonal, and informational schedule justice may be very salient for the LTC industry. Because of the nature of this industry, it is inevitable that employees will be
Shift work in LTC

asked to work some additional shifts and less desirable schedules. However, if staffing coordinators use fair policies, effectively communicate with employees, and treat them with respect, the negative outcomes associated with these schedules may be reduced. This suggests that at least in the LTC context, even if distributive work schedule justice is low, high procedural, interpersonal, and informational work schedule justice might reduce some of the negative outcomes associated with low distributive justice.
Chapter 6: Outcomes associated with work schedules in LTC

Different work schedules and work schedule justice can influence a variety of outcomes for LTC employees. In the present study, three outcomes were examined, emotional exhaustion, employee engagement, and intentions to leave. These outcomes are relevant to the healthcare industry and are important for both employee well being and organizational functioning. By examining how work schedule variables relate to these outcomes, both positive (engagement) and negative (emotional exhaustion and withdrawal intentions) outcomes were addressed.

*Emotional exhaustion*

The concept of employee burnout can be described as an affective reaction to persistent stress that results in the gradual depletion of energy, emotional exhaustion, physical fatigue, and cognitive weariness (Shirom, 2003). The most prevalent conceptualization of burnout consists of three dimensions (Maslach, 1982; Maslach & Jackson, 1981). The first dimension is emotional exhaustion, or the feeling of being depleted of one's emotional resources. The second dimension is depersonalization, which refers to a cynical or detached response to people at work. Finally, the third dimension is reduced personal accomplishment, which is a feeling of lowered self-efficacy or decreased confidence in one's ability to be productive.

Shirom (1989; 2003) offers a different conceptualization of burnout, viewing the construct as individuals' feelings of physical, emotional, and cognitive exhaustion. The experience of burnout is a result of stress appraisals and may be buffered by individuals' coping behaviors. This approach to burnout is based on Hobfoll's (1989)
Conservation of Resources Theory, which posits that people have a limited number of energetic resources and they are motivated to obtain, retain, and protect those valued resources. When these resources are threatened, people experience stress, and the experience of burnout is a result of a chronic depletion of resources without a chance to replenish. The concept of burnout was first developed to apply to jobs where people experience high emotional demands, such as health care workers, social service workers, or teachers. These jobs often require extreme amounts of emotional energy, often with little reward or gratitude, which often occur in the LTC industry.

The present study will examine one component of burnout, emotional exhaustion. Some research suggests that emotional exhaustion is the most central variable of the three components of burnout (Baba, Jamal, & Tourigny, 1998; Shirom, 1989; Zohar, 1997). Emotional exhaustion occurs when chronic exposure to occupational stress leads to the continuous depletion of energetic coping resources. Research supports the notion that job demands, including workload, emotional demands, and problems with planning lead to emotional exhaustion in home care workers (Bakker et al., 2003). Emotional exhaustion has been related to increased turnover, turnover intentions, and absenteeism, lowered organizational commitment, reduced job performance, fewer organizational citizenship behaviors, lowered customer satisfaction, and increased violence (Cropanzano, Rupp, & Byrne, 2003; Shirom, 2003; Taris, 2006).

Working at night can lead to fatigue and exhaustion, especially when night workers do not get adequate sleep during the day. Night work has been associated with
negative outcomes including affective disturbances such as loneliness and irritation (Bohle & Tilley, 1998), poor sleep quality (Bourdouxhe et al., 1999; Parkes, 2002), and family-related problems (Presser, 2000). Over time, the cumulative effects of lack of sleep and working a demanding job may also lead to employee emotional exhaustion. Employees working shift work, particularly the night shift may consistently not get an adequate amount of sleep. Additionally, night workers function on a nocturnal schedule, which may not be compatible with their natural circadian rhythm or their non-work lives. However, certain individuals who are more suited or more able to work on the night shift may be less likely to experience emotional exhaustion. Night workers who are more evening-oriented and whose schedules do not interfere with their non-work commitments may experience lower levels of emotional exhaustion.

Research has shown a relationship between organizational justice and employee stress (Brotheridge, 2003), with injustice being conceptualized as a stressor (Fox et al., 2001). When employees perceive that they are not being treated fairly, they are likely to experience negative reactions and emotions. These negative reactions can lead to employee feelings of a loss of resources. For example, Francis and Barling (2005) found that interactional, procedural, and distributive justice were all significantly related to psychological strain. Similarly, Taris, Van Horn, Schaufeli, and Schreurs (2004) found that perceptions of inequity in exchange relationships was significantly related to emotional exhaustion. Furthermore, Molliner, Martinez-Tur, Peiro, Ramos, and Cropanzano (2005) found that unit level justice perceptions were
related to unit level employee burnout, with interactional justice being the most influential.

These relationships should also apply to work schedule justice. The physical and emotional demands associated with the job, in addition to the low pay and often lack of appreciation by others can make direct care employees prone to emotional exhaustion. When direct care employees have negative perceptions of work schedule justice, they may experience increased levels of emotional exhaustion. If employees perceive their work schedules as unfair, they are not able to influence the schedule they work, they are not treated fairly by their staffing managers, or they are not informed about their schedules, they should be more likely to experience emotional exhaustion.

**Employee engagement**

Employee engagement is defined as a persistent, positive, motivational state that is characterized by vigor, dedication, and absorption. Engagement is often thought of as the opposite of burnout (Maslach, Schaufeli, & Leiter, 2001). Vigor refers to high levels of resilience and energy, the ability to not be easily fatigued, persistence in the face of difficulty, and the willingness to invest effort in one's job. Dedication refers to a strong involvement and pride in one's work and feelings of inspiration, enthusiasm and significance. Absorption refer to being totally immersed in one's work, where time passes quickly and the individual is unable to detach himself from his work (Maslach et al., 2001). Engagement is related to, but distinct from other job-
related attitudes, such as organizational commitment, job satisfaction and job involvement (Maslach et al., 2001).

Employee engagement has been related to a variety of positive organizational outcomes, including high job satisfaction, low turnover intentions, high organizational citizenship behaviors, and high organizational commitment, and better performance (Saks, 2006). Additionally, employee engagement mediates the relationship between organizational resources and group level service climate (Salanova, Agut, & Peiro, 2005). Taken together, this research suggests that promoting engagement should lead to several desirable outcomes for organizations.

Including employee engagement in addition to emotional exhaustion takes a positive psychology approach by exploring both positive and negative outcomes related to work schedules. Positive psychology considers what leads people to have successful outcomes, rather than simply diagnosing problems (Seligman & Csikszentmihalti, 2000). This approach is useful because it takes research beyond simply identifying problems to developing an understanding of how to increase and maintain positive attitudes. By examining both positive and negative outcomes, this research provides knowledge about not only avoiding negative employee outcomes, but also about improving employee attitudes and increasing engagement at work.

Although there has been no previous research examining shift work and employee engagement, shift work variables have been related to similar outcomes such as job satisfaction, organizational commitment, professional efficacy, and turnover intentions (Demerouti et al., 2004; Jamal, 1981). Based on these findings, a
likely conclusion is that when employees night work schedules fit with their personal characteristics (e.g., morningness/eveningness or non-work schedule fit) and when they perceive high work schedule justice they will experience more engagement at work.

Employee intentions to leave

Employee turnover costs organizations millions of dollars each year in areas such as recruiting and training new employees, administrative costs, separation benefits, and lost productivity (Griffeth & Hom, 2001). Meta analytic studies have identified several work-related factors associated with turnover, including compensation, job satisfaction, job search behaviors, commitment, performance, co-workers, promotions, job content, stress, lack of work group cohesion, lack of autonomy, role clarity, comparison of employment alternatives, withdrawal conditions, and quit intentions (Cotton & Tuttle, 1986; Griffeth, Hom, & Gaertner, 2000).

Several theories have been presented to explain employee turnover. March and Simon (1958) suggested that the equilibrium between employee contributions and organizational inducements determines an individual's likelihood to leave the organization through two mechanisms. First, the perceived desirability of movement is based on an individual's satisfaction with the job, which depends on the conformity of job characteristics to the employee's self-image, the predictability of job relationships, and the compatibility of the job with other roles. Second, the availability of opportunities within the organization influences the perceived desirability of
movement. March and Simon also proposed that the perceived ease of movement, influences employee turnover. The ideas presented in this theory form the foundations for current turnover theory (Hom & Griffeth, 1995).

Mobley (1977) presented a model to explain the intermediate linkages between employees’ evaluations of their jobs and their subsequent turnover. According to this model, a negative evaluation of the job results in job dissatisfaction. At this point, an employee is said to think about quitting, analyze the utility and costs associated with quitting, intend to quit, and seek and evaluate other job alternatives, including comparing alternatives to the current job. Finally, the employee will make a quit decision. Mobley, Horner, and Hollingsworth (1978) tested the model on a sample of hospital employees and found empirical support for the model. This model has been extremely influential on current turnover theories, and there have been many other extensions of the original model (Lee & Mitchell, 1994; Muchinsky & Morrow, 1980).

One of the key concepts in the Mobley (1977) model is the focus on the intermediate steps between the time an employee begins to think about quitting and when that individual ultimately decides whether to leave the job, such as weighing costs associated with quitting and looking for alternative jobs. One of these steps that has received much research attention is intentions to turnover. Turnover intentions refer to the likelihood of an individual leaving the organization (Konovsky & Cropanzano, 1991). Intention to turnover is a widely used construct in turnover research; both as an intermediate linkage variable and an outcome variable when actual turnover data are not available.
In support of this usage, turnover intentions were found to be strong predictors of turnover in recent meta-analyses (Cotton & Tuttle, 1986; Griffeth et al., 2000). Furthermore, Tett and Meyer (1993) found that the relationship between affective commitment and turnover was mediated through turnover intentions. In their examination of this model, Mobley et al. (1978) found that intention to turnover was the only significant predictor of actual turnover. Additionally, the strong relationship between turnover intentions and behavior has been demonstrated in the health care industry. In a meta-analysis of nursing studies, results indicated that behavioral intentions to stay or to leave significantly predicted nurses' turnover behavior (Irvine & Evans, 1995).

There is evidence to suggest that both objective schedule arrangements and perceptions about work schedules are related to turnover intentions and behaviors. For example, different shift arrangements including mixed schedules, night work, overtime, and weekend work predict turnover intentions (Hayes et al., 2006; Jamal, 1981). Individuals who work night work but are morning oriented may experience more turnover intentions if they become sleep deprived or fatigued as a result of their schedule. Additionally a mismatch between employees' actual and preferred schedules predicts intentions to turnover (Morrow et al., 1994). This suggests that fit between employees' work schedules and their non-work commitments may lead to increased turnover intentions. This is particularly true because they can likely find a job with a different schedule quite easily given the current labor market.
Perceptions of injustice may also lead to employee turnover intentions. For example, research suggests that higher justice perceptions are related to reduced turnover for salespeople (Brashear, Manolis, & Brooks, 2005). Additionally, aggregated justice perceptions have been related to turnover intentions through organizational commitment for hotel employees (Simons & Roberson, 2003). When employees perceive they are not being treated fairly, one common response may be to consider leaving the organization for a different job. Applied to work schedules, nurses' dissatisfaction with their work schedules has been shown to predict turnover intentions (Choi et al., 1989). Taken together, these results suggest that work schedule injustice should lead to stronger employee turnover intentions.

In the present study, I investigate three types of turnover intentions, intentions to leave the job, the LTC industry, and the schedule. Intention to leave the job is the most common form of turnover intentions used in research. However, it is also important to consider intentions to leave the field. If employees associate difficult work schedules with LTC jobs in general they may decide to leave the industry for good. This is extremely important to consider, due to the limited number of potential employees and the staffing crisis in this industry. Finally, I examined employees' intentions to leave their current schedule. In many LTC settings, applicants apply to work certain shifts. Therefore, if a position on a certain shift became available, an employee might apply to move from their current position into one with a more desirable schedule. This new position could either be at the same organization, a competitor, or in a different industry, such as retail. Examining all three types of
intentions to leave provides information about the different actions employees might be likely to take if they are working a night shift or if they perceive negative work schedule justice.
Chapter 7: Present study

The present study examines how work schedules are related to LTC employees' emotional exhaustion, engagement, and intentions to leave. Although there have been some research studies on the relationship of personal characteristics with night work and organizational work schedule practices, results are often contradictory and there are few conclusive findings. This study contributes to current literature in two ways. First, this study contributes to existing work schedule literature by examining how both work schedule-related personal characteristics and organizational practices are related to employee outcomes. Second, this study contributes to LTC research by examining how work schedule factors are related to important employee outcomes, which may ultimately lead to turnover. With the current staffing crisis in the LTC industry, research examining how organizations can adjust their practices around work schedules may lead to more positive employee outcomes and eventually to lower employee turnover.

Systems approach

The present study uses a systems perspective to examine work schedules from both individual and organizational level perspectives. This systemic approach is valuable because provides insight into how characteristics about both employees and their employers can influence important work schedule-related outcomes. The present study uses the systems framework presented by Lendaris (1986), with the individual shift worker as the focal unit being examined. Ultimately, this study examines three individual outcomes: emotional exhaustion, employee engagement, and intentions to
leave. To explore how different work schedule variables influence these outcomes, the study examines aspects of the sub-system and supra-system of the focal unit.

Lendaris (1986) defines a focal unit's sub-system as the interaction of sub-units that work together to manifest the attributes of the focal unit. In the present study, the sub-units are morningness/eveningness and non-work schedule fit. These two variables were explored with regard to the relationships between amount of night work and emotional exhaustion, employee engagement, and intentions to leave. The influence of these personal characteristics suggests that certain employees may be better suited for night work than others. Specifically, people who are more evening-oriented and have greater non-work schedule fit should be more successful on the night shift.

A supra-system includes the aspects or the components of the environment that are relevant to the task at hand (Lendaris, 1986). In the present study, the supra-system of the individual is the fairness of the organization's work schedule policies and practices. This is defined by individual level perceptions of fairness of an employee's schedule, an organization's scheduling policies, and the interpersonal treatment and communication employees receive regarding their work schedules. Understanding the influence of the fairness of organizational scheduling practices can inform future interventions to reduce emotional exhaustion and turnover and to improve engagement.
The effects of personal characteristics and reactions to night work

The negative consequences associated with night work may be related to increased emotional exhaustion and decreased engagement, and may lead employees to seek out work arrangements that do not involve night work. However, certain individuals may have a good fit with night work, and want to remain working in their current positions. For example, employees who are evening-oriented may experience fewer sleep problems and fatigue associated with night work. Additionally, night work employees whose schedules fit with their non-work commitments may be able to better manage their non-work lives. When employees are able to work the night shift successfully they should be less likely to want to leave their jobs, the LTC field, or change their work schedules.

The present study examines two personal characteristics as potential moderators of the relationship of night work with emotional exhaustion, engagement, and turnover intentions. Prior research suggests a variety of negative outcomes are associated with night work, including increased risk of occupational violence (Salminen, 1998), affective disturbances such as loneliness and irritation (Bohle & Tilley, 1998), poor sleep quality (Bourdouxhe et al., 1999; Parkes, 2002), social/domestic problems (Presser, 2000), and accidents (Williamson & Feyer, 1995). However, certain individuals may be better able to adapt to night work, and therefore less likely to experience these negative consequences. Based on a review of past literature, morningness/eveningness and work-non-work schedule fit should predict which employees should be more successful at night work.
Morningness/eveningness. Past research suggests that employees' circadian orientations may influence their ability to adapt to night work (Folkard et al., 1979; C. S. Smith et al., 2002; P. A. Smith, Brown, Di Milla, & Wrago, 1993). However, the majority of this research focuses on sleep-related outcomes of shift workers, rather than organizational outcomes. Using a person-schedule fit perspective, I proposed that employees who are more evening-oriented would be more successful working the night shift. More specifically, employees who work night hours should experience less emotional exhaustion if they are evening-oriented. Furthermore, evening oriented employees who work at night schedule should report higher levels of engagement at work. Finally, night working employees who are evening-oriented should be less likely to want to leave their current work schedules, jobs, and the industry. For a graphical representation of these hypotheses, please see Figures 2-3.

H1: Morningness/eveningness will moderate the relationship between number of night hours worked and emotional exhaustion such that the positive relationship between these two variables should be weaker for more evening-oriented people.

H2: Morningness/eveningness will moderate the relationship between number of night hours worked and engagement such that the negative relationship between these two variables should be weaker for evening-oriented people.

H3a: Morningness/eveningness will moderate the relationship between number of night hours worked and intentions to leave the schedule, such that the
positive relationship between these two variables should be weaker for evening-oriented people.

H3b: Morningness/eveningness will moderate the relationship between number of night hours worked and intentions to leave the job such that the positive relationship between these two variables should be weaker for evening-oriented people.

H3c: Morningness/eveningness will moderate the relationship between number of night hours worked and intentions to leave the LTC industry such that the positive relationship between these two variables should be weaker for evening-oriented people.

Non-work schedule fit. Research examining how non-work commitments affect the work schedule-outcome relationships has been inconclusive. Shift work has been associated with family and domestic problems (Presser, 1995; 2000). Individuals working at night who have children may care for their children during the day, leaving little time to catch up on sleep. However, other research on family commitment and shift work suggests that the fit between an employee's work schedule and their non-work demands may be more influential than the shift-outcome relationship (Barnett et al., 1999). In other words, the night shift is not necessarily bad if it allows employees to better cope with their non-work responsibilities. Therefore, it is important to examine non-work schedule fit as a moderator of the night work-outcome relationship. I propose that night workers whose work schedules fit with their non-work responsibilities will be more engaged, less emotionally exhausted, and will report
fewer turnover intentions. When working the night shift is convenient for non-work responsibilities, such as childcare or school, employees should report more positive outcomes. For a graphical representation of these hypotheses, please see Figures 4-5.

**H4**: Perceived non-work schedule fit will moderate the relationship between number of night hours worked and emotional exhaustion such that the positive relationship between these two variables will be weaker when there is greater fit.

**H5**: Perceived non-work schedule fit will moderate the relationship between number of night hours worked and employee engagement such that the negative relationship between these two variables will be weaker when there is greater fit.

**H6a**: Perceived non-work schedule fit will moderate the relationship between number of night hours worked and intentions to leave the schedule such that the positive relationship between these two variables will be weaker when there is greater fit.

**H6b**: Perceived non-work schedule fit will moderate the relationship between number of night hours worked and intentions to leave the job such that the positive relationship between these two variables will be weaker when there is greater fit.

**H6c**: Perceived non-work schedule fit will moderate the relationship between number of night hours worked and intentions to leave the LTC industry such
that the positive relationship between these two variables will be weaker when there is greater fit.

The effects of work schedule justice on LTC workers

Applying an organizational justice framework, the present study examines the direct effects of distributive, procedural, interpersonal, and informational schedule justice on employee emotional exhaustion, engagement, and intentions to leave. I predict that each type of work schedule justice is negatively related to emotional exhaustion and intentions to leave and positively related to engagement. When employees feel they are assigned an unfair schedule, believe the policies used to assign the schedules are unfair, are treated badly by the person responsible for work schedules, or do not receive information about their schedules they may be more likely to experience increased emotional exhaustion and intend to leave their schedules, their jobs, or the LTC industry. However, if employees feel positive about their work schedules, the policies used to create the schedules, and their staffing coordinators, they are likely to experience higher engagement at work.

H7: Employees who perceive higher levels of distributive, procedural, interactional, and interpersonal schedule justice will report less emotional exhaustion.

H8: Employees who perceive higher levels of distributive, procedural, interactional, and interpersonal schedule justice will report higher levels of engagement.
H9a: Employees who perceive higher levels of distributive, procedural, interactional, and interpersonal schedule justice will report weaker intentions to leave their schedules.

H9b: Employees who perceive higher levels of distributive, procedural, interactional, and interpersonal schedule justice will report weaker intentions to leave their jobs.

H9c: Employees who perceive higher levels of distributive, procedural, interactional, and interpersonal schedule justice will report weaker intentions to leave the LTC industry.

Interactions between procedural and distributive justice have been examined in relation to several outcomes, such as reactions of job loss victims and survivors (Brockner et al., 1994), organizational commitment (McFarlin & Sweeney, 1992), and psychological distress (Tepper, 2001). Taken together, this research suggests that when outcomes are perceived negatively (i.e., when distributive justice is low), such as working a shift one does not want to work, perceptions of procedural justice should be especially important. For example, if employees are able to provide input into their schedules, they may report more positive outcomes, even if they do not receive all their schedule requests.

Although there has been little research examining interactions between distributive and interpersonal and informational justice, the same patterns that are seen with procedural justice should apply. In the work schedule context, it is unlikely that all employees will ever be satisfied with their work schedules. Therefore, it is likely
that distributive schedule justice perceptions will be low for at least some people. However, if employees understand the reasons for their schedules (e.g., someone quit, a co-worker had an emergency) they might be less likely to experience negative consequences associated with the low distributive schedule justice. Similarly, positive treatment from the staffing coordinator (e.g., an unsuccessful attempt to resolve a schedule issue) might buffer some of the negative effects of low distributive schedule justice.

Sinclair and colleagues (2007) found interactions between distributive schedule justice and procedural, interpersonal, and informational schedule justice. For example, the positive relationship between distributive justice and academic performance was stronger when interactional justice was also high. Procedural, interpersonal, and informational justice are predicted to moderate the relationships between distributive justice and emotional exhaustion, engagement, and intentions to leave such that these relationships will be stronger when procedural, interpersonal, and informational justice are high.

H10a: The negative relationship between distributive schedule justice and emotional exhaustion will be stronger when procedural schedule justice perceptions are high.

H10b: The positive relationship between distributive schedule justice and engagement will be stronger when procedural schedule justice perceptions are high.
H10c: The negative relationship between distributive schedule justice and intentions to leave the schedule will be stronger when procedural schedule justice perceptions are high.

H10d: The negative relationship between distributive schedule justice and intentions to leave the job will be stronger when procedural schedule justice perceptions are high.

H10e: The negative relationship between distributive schedule justice and intentions to leave the LTC industry will be stronger when procedural schedule justice perceptions are high.

H11a: The negative relationship between distributive schedule justice and emotional exhaustion will be stronger when interpersonal schedule justice perceptions are high.

H11b: The positive relationship between distributive schedule justice and engagement will be stronger when interpersonal schedule justice perceptions are high.

H11c: The negative relationship between distributive schedule justice and intentions to leave the schedule will be stronger when interpersonal schedule justice perceptions are high.

H11d: The negative relationship between distributive schedule justice and intentions to leave the job will be stronger when interpersonal schedule justice perceptions are high.
H11e: The negative relationship between distributive schedule justice and turnover intentions for the LTC industry will be stronger when interpersonal schedule justice perceptions are high.

H12a: The negative relationship between distributive schedule justice and emotional exhaustion will be stronger when informational schedule justice perceptions are high.

H12b: The positive relationship between distributive schedule justice and engagement will be stronger when informational schedule justice perceptions are high.

H12c: The negative relationship between distributive schedule justice and intentions to leave the schedule will be stronger when informational schedule justice perceptions are high.

H12d: The negative relationship between distributive schedule justice and intentions to leave the job will be stronger when informational schedule justice perceptions are high.

H12e: The negative relationship between distributive schedule justice and intentions to leave the LTC industry will be stronger when informational schedule justice perceptions are high.

Finally, in addition to the hypotheses stated above, I examined two exploratory research questions regarding characteristics among employees working different shifts and reasons why employees work certain shifts. Specifically, in addition to the two personal characteristics proposed by formal hypotheses, there may be other
demographic differences among individuals working the morning, evening, and night shifts, such as age, number of children at home, marital status, and the presence of a second job.

Understanding how the employees working certain shifts differ may provide insight into whether certain types of people are more drawn to certain shifts. For example, it is possible that people who have children are more likely to work the night shift so they can be with their children during the day. Identifying demographic differences between shifts is important information to consider when developing supports for shift workers. For example, if it appears that most older workers prefer the night shift, organizations can work with these individuals to figure out why they are drawn to the night shift. If it is because the physical workload is less, an organization might create a less demanding day shift in order to retain older workers who cannot handle the physical demands but still want to do the job. This information can also be useful for recruiting and sources applicants. For example, if it appears that employees who are in school tend to work the evening or night shifts, organizations can advertise at schools when positions for these shifts become available. If relevant, organizations can also emphasize tuition support programs to these individuals as a recruiting tool.

RQ1: Are there demographic differences between groups of individuals working the morning, evening, and night shifts?

Additionally, individuals may work a certain schedule for a variety of reasons such as requirements of the job, childcare needs, school schedule, or the presence of a
second job. To explore these questions, I collected information regarding employees' reasons for working their current schedules. Because of the large need for employees in LTC, it is likely that many employees could leave their current jobs and be quickly hired somewhere else, possibly on a different shift. However, some employees may be involuntarily working their current shift because of circumstances outside of work. Understanding employees' motivations for working their current shift may provide insight into potential interventions. For example, if they have to work their current shift because of their schedule at a second job, there is little the organization can do to alleviate the negative consequences associated with the shift. However, some employees may be working their current shifts because it was the only one available at the time they were hired. If this is the case and the shift is not working out, organizations can work with employees to find a shift that will result in them remaining with the organization rather than looking elsewhere for a job with a different schedule.

*RQ2: Are there differences between groups regarding why employees work the morning, evening, and night shifts?*

In summary, the purpose of this study is to examine how shift work-related variables influence employees' attitudes in the LTC context. Using a systems perspective, this study examines both individual and organizational variables that influence employees' reactions to different schedule variables. First, this study examines how several personal characteristics moderate the relationships between night work and outcomes. Specifically, I proposed that evening orientation and greater
non-work schedule fit would make certain individuals better able to adapt to night work, and these individuals would report being more engaged, less emotionally exhausted, and that they have fewer intentions to leave their schedules, jobs, and the LTC industry. Second, this study explores an emerging construct, work schedule justice, and its relationship to employee perceptions of engagement and emotional exhaustion, and their intentions to leave. Findings from this study should be useful to help develop practical interventions aimed at managing employee work schedules effectively. For a summary of all study hypotheses, please see Table 1.

Qualitative and pilot studies

Before the main study was conducted to test the above hypotheses and research questions, two smaller studies were conducted. First, to gather information for formulating the hypotheses, a qualitative study consisting of informational interview was conducted. Second, to evaluate the study survey and data collection protocol, a pilot study was conducted on two long-term care facilities. Based on the results of this study, several minor changes were made to the survey. Information from these preliminary studies helped to inform the final design of the main study.
Chapter 8: Qualitative study

A preliminary qualitative study was conducted to help develop the design of the main study and to gather background information on the LTC industry, different facilities within the focal organization, and work schedule issues specific to the LTC industry. Before conducting the main research study, I conducted a qualitative study involving interviews with seven LTC administrators, staffing coordinators, and certified nursing assistants. The interviews revealed several interesting findings regarding work schedules. For a list of interview questions, please see Appendix A. Results from this study guided the design of the main study described in this dissertation.

There are several advantages to using a mixed method approach in work schedule research. Within the same industry, organizations differ in several aspects of work-schedule design, including shift length, rotation type, and start and end times of shifts. Collecting qualitative information early in the project provided me with knowledge about the focal organization's specific policies regarding work schedules. This information was useful in guiding research design. For example, since the focal organization did not utilize rotating shifts I did not formulate hypotheses related to rotating shifts. Gathering qualitative information also alerted me to the researcher to schedule-related issues are significant to employees.

Organizations also differ in the policies used to allocate shifts, employees' flexibility to switch shifts, and the amount of input employees have into their schedules. In this context, qualitative research provides valuable information to allow
researchers to focus on the most salient aspects of work schedule policy in the focal organization and to guide subsequent quantitative analysis. Ideally, qualitative information gained from focus groups and informational interviews can be gathered during the study design phase to help guide hypothesis and survey development.

*Key findings from informational interviews*

During the informational interview process there were several important observations. First, even within the same organization, individual facilities differed in their methods to assign and manage work schedules. Although each of the three facilities I visited was currently on a 4 days on, 2 days off schedule for their direct care staff, interviewees talked about being a different facilities within the organization using different schedule methods, such as having designated weekday and weekend workers or having off every third weekend. Several people I spoke with (both direct care workers and staffing coordinators) indicated that they had tried different schedule arrangements and the 4 on 2 off pattern has been most successful. However, one can imagine that the process of experimenting with different schedule patterns could have a negative impact on employee attitudes. Additionally, the staffing coordinators acknowledged that because of staffing requirements some employees often worked outside of their scheduled shifts (e.g., either a different schedule or additional hours).

Second, the interviews highlighted several important aspects of work schedule fairness, including procedures used to assign schedules, stability in schedules (e.g., knowing your schedule far in advance), and the ability to change schedules when needed (e.g., switching shifts with a co-worker). Indeed, one direct care worker I
spoke with had moved facilities in order to work a schedule that was compatible with her school schedule. She said she was much more satisfied having a standard, fixed schedule than the constantly changing schedule she had at her previous facility. Additionally, another direct care employee with whom I spoke was single mother of three who explained to me how her staffing coordinator helped her manage her child care demands and how much she valued that support. These responses provide support for the importance of work schedule justice perceptions in LTC.

Finally, results from the informational interviews revealed that different managers and staffing coordinators vary in their attitudes about employee work schedules. For example, one staffing coordinator I spoke with explained that they try to view all employees as a family, and work hard to accommodate their needs. She felt that the employees had a choice of where they worked and that work schedules are a key piece of retaining good employees. Alternately, one facility I visited seemed to have a less trusting view of their employees. They had a policy of not allowing employees to make changes once their schedules for the two-week period had been posted. They mentioned they'd had problems with people changing shifts and then getting confused and not showing up. This approach was that in order to ensure an adequately staffed building schedules changes could not be allowed.

Results from this initial study informed the development of the main study. Conducting informational interviews at several locations familiarized me with the LTC industry as well as the focal organization. More specifically, conducting these interviews increased my knowledge about work schedule issues in the LTC industry,
as well as the individuals who work in direct care jobs. Additionally, visiting several facilities gave me insight into the work environment and the potential roadblocks I might encounter with data collection. For example, observing the work environment supported my original notion that the surveys could not be conducted online and the length needed to be manageable. Overall, this study was an important piece in the development of the study.
Participants

Pilot study

The purpose of the pilot study was to evaluate the survey and the data collection protocol to make sure these were both appropriate for the study population. Participants for the pilot study were 54 employees from 2 skilled nursing facilities in the focal organization. Approximately 75 employees were asked to participate in the pilot study, for a response rate of 72%. Of the pilot study participants, 69% were White, 15% were Hispanic, 7% were Asian, 6% were Black, and 2% were Iranian. The average age of the participants was 39 and 76% were female. Fifty-eight percent of participants had childcare responsibilities, ranging from 1 to 5 children under the age of 18 at home. Twenty-one percent of participants had some elder care responsibility, caring for between 1-3 elderly family members at least 3 times a week. Thirty percent of participants reported having another job.

Full study

Participants for the full study were 453 employees of a large LTC organization and did not include participants from the pilot study. Data were collected from 21 facilities, including both urban and rural locations. Of the 21 facilities, were 13 skilled nursing facilities and 8 were assisted living facilities. Approximately 1650 employees were eligible to participate in the study (e.g., they were employees at the facilities), of these, 453 returned surveys, for a response rate of 28%. Approximately 500 participants were directly asked to participate (e.g., they were asked by the researcher.
to participate). Of these, 453 returned surveys, for a response rate of 91%. Twenty participants were removed from the full study due to missing data and 29 were removed because they were employed in positions not included in the study (e.g., Director of Nursing, Business Office Manager). Additionally, data from one facility (18 participants) were removed because their responses were systematically different from the rest of the sample. Therefore, a final sample of 389 was included in the hypothesis testing. Of the participants who reported demographic information, 74% were White, 9% were Black, 6% were Hispanic, 6% were Asian, 4% were Native American, and 1% were mixed or other. The average age of participants was 37 and 89% were women. Forty-five percent of participants had childcare responsibilities, ranging from 1 to 5 children under the age of 18 at home. Twenty-one percent of participants had some elder care responsibilities, indicating they provided care for an elderly person at least 3 hours a week. Fifteen percent of participants reported having another job, working between 2.5 and 40 hours at the second job.

*Data Collection and Procedure*

Data for the present study were collected using a paper and pencil survey. The study used this method rather than an online survey because the majority of direct care workers do not have access to a computer at work. The survey took participants approximately 20 minutes to complete. The Human Resources Director for the organization communicated support for this project to the Executive Directors and Administrators of all the facilities. The researcher contacted each facility to schedule
dates for data collection. All data collection took place during the months of February, March, April, May, and June of 2007.

Pilot Study

For the pilot study, data were collected during shift changes. The researcher went to the facility on multiple days during shift changes at 6:00 a.m., 2:00 p.m., and 10:00 p.m. Employees were given permission to come off the floor to fill out the survey. Additionally, for employees who could not take the time to fill out the survey when I was there, surveys were left with envelopes to ensure confidentiality. Participants filled out the surveys and sealed them in envelopes for the researcher to pick up.

Full study

For the full study, data were collected during staff meetings, at shift change, and by organizational representatives. Because the staff meetings were often held on the same date and time, several researchers assisted with data collection by attending staff meetings at various locations. For each meeting, the researcher, research assistant, or organizational representative arrived at the facility, read an introduction, handed out the surveys, waited for the participants to fill them out, collected them, and left. To increase participation from employees not present at the staff meetings, the researcher went back during shift changes to several facilities and/or left surveys with envelopes for participants to fill out during their shifts. For three facilities that were in more rural areas, the researcher visited the facility the day before staff meetings to distribute the survey materials to the facility's Administrator or Executive Director. At
each facility the researcher walked through instructions for the surveys and provided a script to introduce the project. These surveys were then mailed back to the researcher in pre-stamped boxes.

Regardless of the data collection method, the same protocol was used. Participants were first asked to read the informed consent letter and decide if they were willing to participate in the survey. If they agreed to participate, they signed the informed consent form and filled out the survey. At the time of completing the survey they were also given the opportunity to complete a raffle entry form. The communication with participants regarding the study was based on a standard protocol explaining the purpose of the study, the potential benefits to the employee and the instructions for completing the survey. For a copy of the data collection protocol, please see Appendix B.

Several strategies were used in an effort to maximize employee participation. In general, the Administrators and Executive Directors at each facility were very supportive of the study and helped to encourage employee participation. Second, various snacks were brought to the data collection (e.g., cookies, doughnuts, candy) to give to participants while they were filling out the surveys. This strategy was especially effective in persuading participants coming off the night shift to fill out the survey. All participants into a lottery for two $50.00 gift cards to a local retail store. Additionally, the facility with the highest response rate (complete surveys/number of employees at the facility) received lunch at a future staff meeting.
Power Analysis

Before beginning this study, the issue of power was considered to ensure the sample size would be large enough to find significant effects, if they exist. I conducted a power analysis using an online power analysis tool (Soper, 2006). To calculate the minimum sample size needed to find meaningful effects, the maximum number of predictors to be included in any individual regression equation (15), an alpha level of .05 (2-tailed), an estimated effect size of .05 and a power value of .80 were entered into the calculator. The estimated effect size was obtained by reviewing other research examining similar research questions (e.g., Sinclair et al., 2007; Holtom et al., 2002). Results indicated a minimum sample size of at least 388. The final sample size for the study was 389, just above the minimum number needed.

Measures

Appendix C presents all measures that were used in this study. For a copy of the actual survey instrument for the pilot and full study please see Appendices D and E.

Demographic variables

Demographic information was obtained from participants, including age, gender, ethnicity, marital status, childcare and eldercare responsibilities, and whether they work in a second job.

Night work. Employees were asked to indicate how many hours per week on average they work between the hours of 7:00 p.m. and 6:00 a.m.
Shift work in LTC 84

*Work schedule justice.* Work schedule justice was measured using a modified version of the work schedule justice scale developed by Sinclair et al. (2007) based on the four-component justice framework presented by Colquitt (2001). This scale consists of 13 items measuring each of the four facets of work schedule justice. The four scales measured distributive schedule justice (3 items, e.g., "My work schedule is fair"), procedural schedule justice (3 items, e.g., "I can provide input into my work schedule"), interpersonal schedule justice (4 items, e.g., "The person responsible for my work schedule treats me with dignity"), and informational schedule justice (3 items, e.g., "The person responsible for my schedule thoroughly explained the procedures for setting my work schedule"). Responses were given on a five-point agreement scale ranging from 1 (strongly disagree) to 5 (strongly agree). Internal consistency for distributive, procedural, interpersonal, and informational schedule justice was .89, .81, .89, and .94 respectively.

*Individually-focused variables*

*Morningness/eveningness.* Morningness/eveningness was measured using the Morning/Late Preferences Scale (C. S. Smith et al., 1989). The measure consists of twelve items measuring respondents’ preferences for certain times of the day. However, results some several studies of scale properties suggest the removal of two items, resulting in the ten-item scale that was used in this study (Smith et al., 2002; Russell, et al., 2002). Responses were given on a five-point Likert scale with response options ranging from "much earlier than most people" to "much later than most people." An example item is "Compared to most people, when would you prefer to
get up if you had a full day's work (8 hours) to do?" Lower scores represented more morning orientation and higher scores represented a stronger eveningness preference. Internal consistency for this scale was .79.

Non-work schedule fit. Three items adapted from a work schedule fit scale developed by (Barnett, 1999) were used to measure congruence between non-work responsibilities and schedule. An example item from this scale is "The time of day (shift) I work is convenient for my non-work life (for example child care, social activities, school)." Responses were given on a five-point agreement scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores represented better fit. Internal consistency for this scale was .87.

Outcome variables

Emotional exhaustion. Emotional exhaustion was measured using a subscale of the Shirom-Melamed Burnout Measure (Shirom & Melamed, 2006). This measure is based on Hobfoll's (1989) Conservation of Resources Theory, and the sub-scale consists of three items. Responses were given on seven-point scale with options ranging from 1 (almost never) to 7 (almost always). An example item is "I feel I am not capable of being sympathetic to co-workers and residents/patients". Internal consistency for this scale was .75.

Engagement. Employee engagement was measured using two sub-scales of the shortened version of the Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006). The two subscales, vigour (e.g., "At my work, I feel bursting with energy") and dedication (e.g., "My job inspires me") contain three items each.
Responses are scored on a seven-point scale ranging from 1 (never) to 7 (always). The third subscale, absorption was not included due to limitations in survey length and the more complex nature of the items. Based on results from an EFA on pilot study data, both subscales were combined into one engagement scales. The internal consistency was .88.

Turnover intentions. Turnover intentions were measured with a 3-item scale used by Konovosky and Cropanzano (1991) and based on a scale developed by Shore, Newton, and Thornton (1990). Konovosky and Cropanzano used this scale to measure intentions to leave the job (e.g., "If it were possible, how much would you like to get a new job?"). For the present study this scale was adapted to measure intentions to leave the schedule (e.g. "If it were possible, how much would you like to work on a shift other than the one you are currently working?") and intentions to leave the LTC industry (e.g., "If it were possible, how much would you like to work in a field other than long term care?"). Furthermore, items were reworded so that all items could be answered on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Internal consistency for intentions to leave the job, profession, and schedule were .89, .83, and .90 respectively.

Control variables

Pay equity. Because perceptions of pay equity might influence employees' overall perceptions of justice, and therefore might influence responses to questions about work schedule justice, pay equity was controlled. Pay equity was measured using a three-item scale developed by Martin and Peterson (1987). Responses were
provided on a five-point agreement scale ranging from 1 (strongly disagree) to 5 (strongly agree). An example item from this scale is “My pay is fair compared to the pay of other people doing different jobs in my unit.” Internal consistency for this scale was .85.

*Average hours worked.* The average number of hours participants worked each week was controlled because the amount of time employees were at work each week could influence their work-related attitudes. Participants were asked to indicate the average number of hours they worked each week. For participants who reported a range, the mean of the two values was used. The mean average hours per week was 38, with a range of 6-89 hours per week.

*Tenure.* Participants were asked to indicate how long they had worked in their current position. Past tenure has been significantly related to turnover intentions, with employees with longer tenure being less likely to report turnover intentions (Cotton & Tuttle, 1986). Tenure ranged from 1-540 months.

*Other job.* Whether the employee worked another job was controlled because the work schedule at the other job, or the schedule conflicts of working two jobs could influence responses on several of the study variables. Responses were coded “1” if they did not have another job and “2” if they had another job.
Chapter 10: Results

Pilot Study

Before the full data collection started, a pilot study was conducted to evaluate the survey and the study protocol. During data collection, several pieces of information were used to evaluate the study design. First, several participants were timed while they filled out the survey. Of the twenty participants who were timed, the average time complete the survey was 16 minutes. Second, after completing the survey, participants were asked if any part of the survey was confusing to them. Overall, participants did not have any problems filling out the survey or understanding the survey items.

Once all the survey data were collected, responses were examined to determine if there were any problems with the survey content. The first two pages of the survey contained questions regarding demographic and schedule information. Several revisions were made to this portion of the survey to make the questions more clear. For example, for several items certain words were bolded to emphasize the key aspects of the questions. Additionally, a "#" was added to several questions to signify that the response desired was a number (e.g., rather than simply checking "weeks" or "months").

In addition to visual analysis of the survey, statistical analyses were conducted to evaluate the measures included in the study. First, Exploratory Factor Analysis (EFA) was conducted on the original 13-item work schedule justice scale. This analysis was conducted because this measure was developed fairly recently and there
is limited evidence to support its factor structure. Principle Axis Factoring with
Oblique rotation was performed in SPSS. Oblique rotation was chosen because the
factors were expected to be correlated with each other. Three factors were extracted.
Communalities for the distributive schedule justice and Informational schedule justice
items were acceptable, with all values being above .40 and 5 of the 6 items with
communalities above .70. Items for the procedural schedule justice and Interpersonal
schedule justice scales were somewhat problematic, with low communalities and
several items cross-loading onto multiple factors. Because of the potentially
problematic factor structure, several experimental items were added to the survey for
the full data collection. However, based on results from both EFA and CFA conducted
on the full data set, the original scale was retained for the hypothesis testing.

Finally, internal consistency for each scale was examined. All of the scales
included in the study had acceptable internal consistency, with Cronbach's Alpha
values ranging from .62 (procedural schedule justice) to .96 (informational schedule
justice). Internal consistency estimates from the pilot study and full study data can be
found in Table 2. Overall, results from the pilot study confirmed that the survey length
and items were appropriate for the participant population.

Missing data

Although every effort was made to gather complete survey data, it is difficult
to completely eliminate missing data. The data were examined in several ways to
evaluate missing data in the sample. First, the amount of missing data for each
individual was examined to determine how many participants had missing data and the
amount and pattern of the missing data. Participants missing over 50% data on the study variables were removed from the data set. Twenty participants were removed from the analysis due to large amounts of missing data. If a survey was missing less than 50% of the data, the missing data were assumed to be missing at random (MAR; Rubin, 1976). MAR assumes that the missing observations of variable $X$ do not depend on the value of $X$, even though they may be related to other variables in the data set. This approach is preferred over listwise or pairwise deletion because it provides an unbiased parameter estimates when data are MAR (Enders, 2001). For the confirmatory factor analysis (CFA), the missing data were modeled using a maximum likelihood algorithm in MPlus. For computing the scale scores for the regression analyses, the missing data were assumed to be MAR. Based on this assumption, the missing item level data were replaced using linear interpolation in SPSS before scale scores were calculated.

**Measure testing**

To evaluate the measurement model for the present study, a CFA was conducted to test the full measurement model for the study. Each scale represented a factor with the scale items as indicators of that factor. All of the scales used in the study were included in the model. The measurement model showed acceptable fit. The chi-square value was $\chi^2(847) = 1563.38$, $p < .01$. The chi-square test is based on sample size and in large samples, the chi-square statistic may be large, and therefore significant, even when the model is a good fit. Therefore, the comparative fit index (CFI) was also examined (Bentler, 1990). The CFI compares the hypothesized model
Shift work in LTC

to the independent model, where none of the variables are correlated. A CFI value above .95 is considered good model fit. CFI for the measurement model was .92, slightly under the criteria for good fit. The root mean square error of approximation (RMSEA) (Browne & Cudeck, 1993) was also examined. RMSEA is an absolute fit index, which compares the proposed model to the sample data rather than an independent model. The value is derived from the variance of the residuals of the model. McDonald and Ho (2002) recommend that values between below .05 indicated good fit, and values between .05 and .08 can be considered “acceptable” model fit. The RMSEA for the measurement model was .05. All estimated factor loadings were significant above the p > .05 cutoff.

Several alternative models were tested to evaluate the work schedule justice measure, since EFA results from the pilot study raised questions about the factor structure. Model 2 collapsed interpersonal and informational justice, testing a three-component model of work schedule justice. Model 3 was a three-factor model collapsing distributive and procedural justice. Model 4 tested a two-factor model with distributive justice as one factor and procedural, interpersonal, and informational schedule justice on one factor. Finally, Model 5 included all four work schedule justice facets loaded onto one factor. None of these more parsimonious models fit the data as well as the proposed measurement model, lending support for the four-factor model. A summary of the CFA results can be found in Table 3.
Group level control variables

This study included participants working in 21 different facilities and therefore the participants were naturally nested within groups. Although all the facilities in this study are owned by the same organization, differences in facility size, administrator style, geographic location, and staffing coordinators may have influenced the way employees respond to the survey. Because there may be systematic differences in employee responses due to facility, it was important to consider the potential impact of facility membership on the results. Therefore, before testing the hypotheses presented in this study, it was important to test the impact of facility differences on participants’ responses.

To determine the influence of facility membership, several one-way analysis of variances (ANOVAs) were conducted. For each of the dependent variables, facility was entered as a random variable. The ANOVA was not significant for emotional exhaustion \( (F(19, 371) = 1.23, p > .05) \), schedule turnover intentions \( (F(19, 371) = 1.01, p > .05) \), and LTC industry turnover intentions \( (F(19, 371) = 1.58, p > .05) \), indicating that facility membership did not significantly influence responses on these three outcomes. The ANOVA for intentions to leave the job was significant \( (F(19, 371) = 2.15, p < .01) \). Means for each facility were examined the facility with the highest mean was removed. The removal of this facility caused the analysis to be non-significant \( (F(19, 347) = 1.23, p > .05) \). This non-significant result suggests that group membership does not significantly predict turnover intentions for the job. The ANOVA for engagement was also significant \( (F(19, 371) = 2.27, p < .01) \). Means for
each facility were examined the facility with the highest mean was removed. The removal of this facility caused the analysis to be non-significant \( F(1,319) = 1.55, p = .05 \). This non-significant result suggests that group membership does not significantly predict turnover intentions for the industry. For a summary of the results from these analyses please see Table 4.

Because the facility with the highest mean was the same for both turnover intentions for industry and job, the participants from that facility were omitted from the future analyses. This results in the omission of 18 participants. Demographically, these participants were similar to the full sample. Seventy-three percent were White, 7% were Asian, and the remaining four participants did not report their ethnicity. The average age of the participants was 40 and 73% were female. Sixty-three percent of the participants from this facility had childcare responsibilities and 7% had some elder care responsibility. These participants worked an average of 38 hours per week and had an average tenure of 104 months.

**Hypothesis testing**

Means, standard deviations, and correlations for all study variables can be found in Table 5. Eleven percent of participants in this study reported the night shift was their primary shift. However, over half (54%) of the participants reported working some night work (hours between 7:00 p.m. and 6:00 a.m.), with an average of 8 night hours per week. Overall, means for the work schedule justice facets were fairly high, with averages ranging from 3.48 (procedural schedule justice) to 3.77 (interpersonal schedule justice). The average non-work schedule fit was also high, with a mean of
3.72. Similar patterns were found for the outcome variables. In general, these results show that the majority of participants reported positive job attitudes and fairly low levels of burnout and intentions to leave.

All study hypotheses were tested using three step-hierarchical regression analyses using SPSS. Results from the regression analyses can be found in Tables 6-10. Five separate regression analyses were conducted, one for each outcome. The control variables were entered in the first step of the regression analysis. All main effects variables were entered in the second step, including amount of night work, morningness/eveningness, non-work schedule fit, distributive schedule justice, procedural schedule justice, interpersonal schedule justice, and informational schedule justice. All interaction terms were entered in the third step of each analysis. Before calculating the interaction terms each of the variables was centered by subtracting the mean from each participant's score. The interaction terms were then calculated by taking the product of the two centered variables in each interaction.

Hypotheses 1-3c stated that morningness/eveningness would moderate the relationship between amount of night work and emotional exhaustion, engagement, and intentions to leave the schedule, job, and the LTC industry. None of these hypotheses were supported. However, the main effect of amount of night work was significantly related to intentions to leave the schedule ($\beta = .14, t = -3.42, p < .01$), with more night work associated with higher intentions to leave the schedule. Additionally, the main effect of morningness/eveningness was significantly related to engagement ($\beta = -.14, t = -2.90, p < .01$) and turnover intentions for schedule ($\beta = -$
.09, \( t = -2.20, p < .05 \), with morning oriented people being more engaged but also reporting higher intentions to leave for a different schedule.

Hypotheses 4-6c stated that non-work schedule fit would moderate the relationship between amount of night work and emotional exhaustion, engagement, and intentions the leave the schedule, job, and the LTC industry. Hypothesis 4 was significant, with the interaction between non-work schedule fit and night work significantly predicting emotional exhaustion. The addition of the interaction variables into the regression equation resulted in a significant increase in the variance of emotional exhaustion explained (\( \Delta R^2 = .05 \), \( \Delta F = 11.56, p < .05 \)) and the t-test for the beta coefficient for the night work x non-work schedule fit interaction was significant (\( \beta = .18, t = 3.40, p < .01 \)).

A graphical representation of the interaction can be seen in Figure 6. This graph and all the interaction graphs in this study were constructed using the methods presented by Aiken and West (1991). Although significant, this interaction was not the pattern that was hypothesized. When non-work schedule fit was high, there was a positive relationship between night work and emotional exhaustion. However, when non-work schedule fit was low, there was a slight negative relationship between amount of night work and emotional exhaustion. To further explore the nature of this and other significant interactions, follow up t-tests were conducted. For each significant interaction, the two predictor variables were dichotomized and t-tests were compared to examine mean differences. For the interaction between non-work schedule fit and night work, differences in non-work schedule fit predicted emotional
exhaustion when night work was low ($t(150) = 2.03, p < .05$), but not when it was high ($t(109) = -0.87, p > .05$).

Hypothesis 5 stated that non-work schedule fit would moderate the relationship between night work and employee engagement. Hypotheses 5 was not significant. Hypothesis 6a stated that non-work schedule fit would moderate the relationship between night work and intentions to leave the schedule. The addition of the interaction variables into the regression equation resulted in a significant increase in the variance of intentions to leave the schedule explained ($\Delta R^2 = .01, \Delta F = 4.34, p < .05$) and the t-test for the beta coefficient for the night work x non-work schedule fit interaction was significant ($\beta = .19, t = 2.08, p < .05$). A graphical representation of this relationship can be found in Figure 7. The pattern of relationships did not support the hypothesized pattern. Follow up t-tests were conducted to further explore the significant interaction. For the interaction between non-work schedule fit and night work, differences in non-work schedule fit predicted intentions to leave the schedule both when night work was low ($t(256) = 8.91, p < .01$) and when it was high ($t(126) = 5.01, p < .01$).

Although not formally hypothesized, it is interesting to note that the main effect of non-work schedule fit was significantly related to engagement ($\beta = .18, t = 3.05, p < .01$), intentions to leave the schedule ($\beta = -.29, t = -5.52, p < .01$), intentions to leave the job ($\beta = -.20, t = -3.25, p < .01$), and intentions to leave the LTC industry ($\beta = -.12, t = -2.12, p < .05$). Employees experiencing non-work schedule fit reported
being more engaged, less likely to want to leave their current schedule, job, and the LTC industry.

Hypothesis 7 stated that the four facets of work schedule justice would be significantly and negatively related to emotional exhaustion. Hypothesis 7 was not supported. Hypothesis 8 stated that the four facets of work schedule justice would be significantly and positively related to employee engagement. Hypothesis 8 was partially supported. The addition of the variables into the second step of the regression equation resulted in a significant increase in the variance explained in employee engagement ($\Delta R^2 = .16, \Delta F = 2.26, p < .01$). Work schedule informational justice was significantly and positively related to engagement ($\beta = .21, t=3.12, p < .01$).

Hypotheses 9a-c stated that the four facets of work schedule justice would be significantly and negatively related to intentions to leave the schedule, job, and LTC industry. Hypothesis 9a was partially supported. The addition of the variables into the second step of the regression equation resulted in a significant increase in the variance explained in turnover intentions for schedule ($\Delta R^2 = .34, \Delta F = 30.58, p < .01$) and distributive schedule justice was significantly and negatively related to turnover intentions for schedule ($\beta = -.36, t=-5.96, p < .01$). Hypothesis 9b was not supported. Hypothesis 9c was partially supported. The addition of the variables into the second step of the regression equation resulted in a significant increase in the variance explained in turnover intentions for the industry ($\Delta R^2 = .16, \Delta F = 11.83, p < .05$), with both informational schedule justice ($\beta = -.20, t=-3.10, p < .01$) and interpersonal
Shift work in LTC

schedule justice ($\beta = -.18, t= -2.62, p < .01$) being significantly and negatively related to turnover intentions for the LTC industry.

Hypotheses 10-12 concerned interactions between the justice facets. Hypotheses 10a-e concerned the potential interaction between work schedule distributive and work schedule procedural justice. Hypotheses 10a-e were not supported.

Hypotheses 11a-e concerned potential interactions between work schedule distributive justice and interpersonal schedule justice on emotional exhaustion, employee engagement, and intentions to leave the schedule, job, and industry. Hypotheses 11a-c were not supported. Hypothesis 11d was supported, with work schedule interpersonal justice significantly moderating the relationship between work schedule distributive justice and intentions to leave the job. The addition of the interaction variables into the regression equation resulted in a significant increase in the variance of intentions to leave the job explained ($\Delta R^2 = .02, \Delta F = 8.56, p < .01$) and the t-test for the beta coefficient for the interpersonal schedule justice x distributive schedule justice interaction was significant ($\beta = -.16, t = -2.93, p < .01$).

A graphical representation of this relationship can be found in Figure 8. Follow up t-tests were conducted to further explore the significant interaction. For the interaction between distributive and interpersonal schedule justice, differences in interpersonal schedule justice predicted intentions to leave the job when distributive schedule justice was high ($t(238) = 4.05, p < .01$) but not when it was low ($t(144) = .22, p > .05$). When
distributive schedule justice is high, the combination with high interpersonal justice results in the lowest intentions to leave the job.

Hypothesis 11e was also supported, with the addition of the interaction variables into the regression equation resulting in a significant increase in the variance of intentions to leave the industry explained ($\Delta R^2 = .02, \Delta F = 7.69, p < .01$) and the t-test for the beta coefficient for the distributive schedule justice x interpersonal schedule justice interaction was significant ($\beta = -.14, t = -2.77, p < .01$). A graphical representation of this relationship can be found in Figure 9. Follow up t-tests were conducted to further explore the significant interaction. For the interaction between distributive and interpersonal schedule justice, differences in interpersonal schedule justice predicted intentions to leave the industry when distributive schedule justice was high ($t(238) = 4.47, p < .01$) and when it was low ($t(110) = 2.71, p < .01$). The mean difference in intentions to leave the industry was .3 higher when distributive schedule justice was high, and the combination of high distributive and interpersonal schedule justice resulted in the lowest intentions to leave the industry.

Hypotheses 12a-e concerned potential interactions between work schedule distributive justice and informational schedule justice. Hypothesis 12b was significant. The addition of the interaction variables in the third step of the regression equation resulted in a significant increase in the variance explained in employee engagement ($\Delta R^2 = .02, \Delta F = 8.06, p < .01$) with the interaction between distributive schedule justice and informational schedule justice significantly predicting engagement $\beta = .15, t = 2.84, p < .01$. A graphical representation of this relationship can be found in Figure
Follow up t-tests were conducted to further explore the significant interaction. For the interaction between distributive and informational schedule justice, differences in informational schedule justice predicted engagement when distributive schedule justice was low ($t(144) = -2.39, p < .01$) and when it was high ($t(238) = -3.77, p < .01$). The mean difference in engagement was .3 higher when distributive schedule justice was high, and the combination of high distributive and informational schedule justice resulted in the highest levels of engagement.

Hypothesis 12d was significant, with informational schedule justice significantly moderating the relationship between distributive schedule justice and intentions to leave the job. The addition of the interaction variables in the third step of the regression equation resulted in a significant increase in the variance explained in intentions to leave the job ($\Delta R^2 = .02, \Delta F = 10.38, p < .01$) with the interaction between distributive schedule justice and informational schedule justice significantly predicting intentions to leave the job $\beta = -.18, t = -3.22, p < .01$. A graphical representation of this relationship can be found in Figure 11. Follow up t-tests were conducted to further explore the significant interaction. For the interaction between distributive and informational schedule justice, differences in informational schedule justice predicted intentions to leave the job when distributive schedule justice was high ($t(238) = 3.91, p < .01$) but now when it was low ($t(144) = -0.09, p > .05$). These results and the graphical representation indicate that the combination of high distributive and informational schedule justice resulted in the lowest intentions to leave the job.
Hypothesis 12e was significant, with informational schedule justice significantly moderating the relationship between distributive schedule justice and intentions to leave the industry. The addition of the interaction variables in the third step of the regression equation resulted in a significant increase in the variance explained in intentions to leave the industry ($\Delta R^2 = .02$, $\Delta F = 10.80, p < .01$) with the interaction between distributive schedule justice and informational schedule justice significantly predicting intentions to leave the industry $\beta = -.17, t = -3.29, p < .01$. A graphical representation of this relationship can be found in Figure 12. Follow up t-tests were conducted to further explore the significant interaction. For the interaction between distributive and informational schedule justice, differences in informational schedule justice predicted intentions to leave the industry when distributive schedule justice was low ($t(144) = 2.65, p < .01$) and when it was high ($t(238) = 5.32, p < .01$). The mean difference in intentions to leave the industry was .7 higher when distributive schedule justice was high, and the combination of high distributive and informational schedule justice resulted in the lowest intentions to leave the industry.

**Research questions**

In addition to the formal hypotheses examined in this study, two research questions were also examined. The first research question concerned whether the demographic profiles of the employees working the morning, evening, and night shifts differed. Respondents were asked to indicate the hours of the shift they normally worked. Of the respondents who reported which shift they worked ($n=366$), 42% reported working the morning shift, 30% reported working the afternoon/evening
shift, 11% reported working the night shift, and 17% reported working a "standard" shift, from 8:00 or 9:00 a.m. to 4:00, 5:00, or 6:00 p.m.

To examine employee differences among shifts, ANOVAs were conducted to examine shift-related differences among the shifts. Age, marital status, average hours worked per week, and job tenure were the only variables that differed significantly by shift. There were no differences in childcare responsibilities, eldercare responsibilities, whether they had another job, or ethnicity. Employees working morning, night, and standard shifts were about the same age, with mean age ranging from 39 (standard shift) to 41 (night shift). However, the average age for the evening shift workers was 32, making them substantially younger than their co-workers on other shifts. Evening workers were also the least likely to be married of all the shifts, with 32% of evening shift workers reporting being married or living with a partner. Fifty-one percent of night workers, 62% of morning workers, and 64% of employees working a standard shift were married.

Employees working the night shift worked an average of 34 months longer than the morning shift workers an average of 70 months longer than the evening shift workers, and an average of 46 months longer than employees working standard shifts. This striking difference suggests that night shift workers may be working that shift out of preference, since it is likely that they would have had an opportunity to find a different position or schedule during their tenure. Average hours worked per week also significantly differed by shift. Employees working the morning and standard shifts work the most hours, with employees on these shifts working an average of 40 hours
per week. Evening workers reported an average of 35 hours per week, and night workers averaged 37 hours per week.

In addition to the individual differences, I compared mean responses on the study variables across shifts. In terms of the predictor variables, non-work schedule fit, pay fairness, and all four work schedule justice facets significantly different across shifts. Surprisingly, morningness/eveningness did not differ across shifts. In general, employees working standard shifts reported the most positive attitudes, followed by morning shift workers. Of the outcome variables examined in this study, only intentions to leave the schedule was significant, with standard shift workers reporting the least intentions to leave the schedule and evening shift workers reporting the most intentions to leave the schedule. A full summary of the demographic characteristics and study results of employees on all four shifts is provided in Table 12.

The second research question examined in this study was whether there are shift differences in why people worked their current schedules. For all three shifts, participants reported personal preference as the most common reason for working their current schedules. None of the night workers reported that they worked their current schedule to be compatible with a second job, while 10% of morning shift workers, 12% of evening shift workers, and 5% of standard shift workers reported their schedule at another job was the reason they worked their current schedule. More night shift workers reported childcare responsibilities as the reason they worked their schedule than any other shift. Finally, twice as many evening shift workers than
morning or night workers reported school as a reason they worked their current schedule. For a full summary of schedule reasons please see Table 13.
The purpose of this study was to extend traditional shift work research that simply looks at shift-related differences (e.g., night versus day work) and explore how personal characteristics and organizational practices relate to work schedules and influence employee outcomes. I examined whether certain personal characteristics (morningness/eveningness and non-work schedule fit) were related to success at night work. Specifically, I investigated whether night work had a more negative effect on people who are more morning-oriented and who experience less schedule fit with their non-work lives.

I also explored an emerging construct, work schedule justice. The work schedule justice framework extends traditional shift work literature by exploring how perceptions of fairness regarding employee schedules, the procedures used to create those schedules, the information employees receive regarding those procedures, and the interpersonal treatment employees receive related to their schedules influence employee outcomes. This study provides insight into how personal characteristics and organizational practices related to work schedules can influence important employee outcomes. In this section, I will discuss the results of each hypothesis individually and then review several general potential explanations for the limited study findings across hypotheses.

Study findings

**Personal characteristics and night work.** The first set of hypotheses predicted that night work would be more strongly and negatively related to engagement and
intentions to leave and more strongly and positively related to emotional exhaustion when employees were more morning-oriented and when they experienced less schedule fit with their non-work lives. These hypotheses were based on research suggesting that evening-oriented people may find it easier to adapt to night work (Akerstedt & Torsvall, 1981; Steele et al., 2000) and that employees who prefer the night shift may be better able to manage their non-work responsibilities and therefore will experience fewer negative outcomes associated with night work (Barnett et al., 1999; Barton, 1994). However, only two of the hypotheses related to night work were supported.

Morningness/eveningness is an individual difference that concerns a person's propensity to prefer working in the extremes of the day; either early in the morning (morning-oriented) or during the evening or at night (evening-oriented) (Smith et al., 1989). Some past research suggests that people who are more evening-oriented tend to be more successful working the night shift than morning-oriented people (Akerstedt & Torsvall, 1981; Steele et al., 2000). However, no research to date has examined the outcomes included in the present study. None of the proposed hypotheses regarding the interaction between night work and morningness/eveningness were supported. However, morningness/eveningness was related to engagement, with morning-oriented people reporting higher levels of engagement. Additionally, morning-oriented people reported more intentions to change schedules. This finding supports past research suggesting that people who are more evening-oriented may find it easier to adapt to shift work (Taillard et al., 1999). It possible that morning-oriented people are
more likely to want to change schedules because they have difficulty adapting to their current work schedules, regardless of whether they are working the night shift.

The second personal characteristic examined in this study was non-work schedule fit. Participants were asked to indicate the extent to which different aspects of their schedules (e.g., pattern of days, shift times) were compatible with their non-work responsibilities such as childcare or school. Non-work schedule fit significantly interacted with amount of night work for two of the outcomes, emotional exhaustion and intentions to change schedules. However, neither of these interactions was in the pattern that was hypothesized. When the average hours of night work was low, the difference in non-work schedule fit significantly predicted emotional exhaustion, with people reporting higher levels of schedule fit reporting less emotional exhaustion. However, when average hours of night work were high, non-work schedule fit did not significantly predict emotional exhaustion. Non-work schedule fit predicted intentions to leave the schedule when average hours of night work was either low or high, with higher non-work schedule fit resulting in fewer intentions to leave in both cases.

One potential explanation for the limited findings regarding non-work schedule fit and night work is that a lack of non-work schedule fit may be relevant for employees working all shifts, not just employees who work at night. Indeed, an examination of the means across shifts suggest that while night workers reported the least amount of fit, evening workers also reported lower non-work schedule fit than morning or standard shift workers. Additionally, even though night workers reported the lowest amount of fit, the responses for night shift workers were still generally
positive. This finding is likely due to the fact that if non-work schedule fit was moderate or low, employees would simply move onto a difference schedule, job, or industry rather than continue to work in a schedule that is not compatible with their non-work lives.

Although the hypothesized interactions with night work were not supported, non-work schedule fit was related to four of the five outcomes. Non-work schedule fit was positively related to employee engagement and negatively related to intentions to leave the schedule, job, and LTC industry. Barton and Folkard (1991) concluded that nurses working either day or night shifts experienced problems related to their social and domestic lives, regardless of which shift they worked. Their study and the present findings support the notion that non-work schedule fit should be a consideration in work schedule design for people working all shifts, not just those employees working the night shift. In the present study, employees working morning and evening shifts still work non-standard hours that could conflict with their non-work responsibilities. For example, the morning shift begins at 6:00 a.m., which would limit an employee getting a child to school. Additionally, the evening shift is from 2:00 p.m. to 10:00 p.m., which could interfere with family and social activities in the evening. These results suggest that non-work schedule fit should be relevant for all shift workers, rather than just those working the night shift. Since LTC employees are able to choose their shifts, they may select work times that fit with their non-work responsibilities. Further, in a tighter labor market non-work schedule fit could be more salient to
employees who have little freedom to choose their schedules because they have to work whatever schedule that is available.

Additionally, participants in this study did not appear to have many family demands. Only about half the sample was married, less than half had childcare responsibilities and twenty-one percent had eldercare responsibilities. Only nine percent of the sample had a second job and seventeen percent reported school as a reason for working their current schedule. The finding that employees did not seem to have heavy non-work demands is a likely explanation for the generally high level of non-work schedule fit reported. It is possible that if the sample had employees with more non-work demands, non-work schedule fit may have had a greater influence on the relationships between night work and emotional exhaustion, engagement, and intentions to leave.

Even though non-work schedule fit did not appear to be a major concern in this sample, the main effect results indicate that it is an important aspect of work schedule management. These findings echo work of Presser (1994; 1995; 2000; 2003), which suggests the importance of the interplay between work schedules and family demands. Furthermore, the informational interviews during the qualitative study revealed that work schedules were quite salient to participants and that non-work demands interfering with schedules created significant problems. For example, if an employee is a single mother and her child gets home from school at 3:00, she may need to work the morning shift. However, if this employee is unable to get a morning shift or is consistently required to work overtime after her schedule shift she may have to leave
the shift, job, or LTC industry to accommodate her family demands. Similarly, employees who are in school often have changing schedule constraints every quarter. If their jobs cannot accommodate these schedule needs, these employees may be forced to leave their current positions. To address these concerns, organizations should attempt to work with employees’ schedule needs.

Work schedule justice. This study also considered how shift work-related policies and procedures influence emotional exhaustion, employee engagement, and intentions to leave. Specifically, the four-facet model of organizational justice (Colquitt, 2001) was applied to work schedules. This study tested both the direct effects of the four shift work justice facets and interactions between work schedule distributive justice and work schedule procedural, interpersonal, and informational justice.

Interpersonal and informational schedule justice both interacted with distributive schedule justice to influence intentions to leave the job and the LTC industry. Additionally, the interaction between informational and distributive schedule justice predicted engagement. Specifically, it appears that when distributive schedule justice is low, the influence of informational schedule justice does not affect engagement or intentions to leave the job and interpersonal schedule justice does not affect intentions to leave the job. In other words, interpersonal and informational schedule justice only increases positive outcomes when distributive justice is already high. However, both interpersonal and informational schedule justice are significantly related to intentions to leave the industry when distributive justice is
low and when it is high (although the mean difference in intentions to leave the industry is twice as large when distributive schedule justice is high). These results suggest the importance of good treatment and communication regarding work schedules.

In all five of the significant work schedule justice interactions, the influence of interpersonal or informational schedule justice was significant when distributive schedule justice was high. Furthermore, the highest engagement and the lowest intentions to leave were reported when distributive schedule justice and either interpersonal or informational schedule justice were high. These findings suggest that outcome fairness can only go so far in creating positive employee outcomes. Even if employees are generally satisfied with their schedules, the fair treatment and communication from staffing coordinators can increase positive outcomes above those associated with just outcome fairness. Therefore, rather than simply buffering the negative effects of low distributive justice, interpersonal and informational justice can actually increase positive employee outcomes by adding to already positive perceptions of distributive justice. Even if perceptions of work schedule unfairness are relatively low, staffing coordinators should still make efforts to treat employees fairly when creating schedules and communicate schedule-related information to employees.

In addition to the significant interactions, four of the main effects hypotheses regarding work schedule justice were significant. Distributive schedule justice refers to perceptions of fairness regarding one's actual schedule and was significantly related to intentions to leave the schedule. The finding regarding distributive schedule justice
suggests that when participants view their schedule to be unfair, they are motivated to consider leaving for a different schedule. However, low distributive schedule justice perceptions do not appear to drive intentions to leave the job or the LTC industry. Therefore, it appears that when employees perceive their schedules are unfair they will simply look to change their working times, but not necessarily leave the job or the industry. This finding makes sense given the current LTC labor market. Because of the turnover and frequent job openings in LTC, it is likely that employees who want to change their schedules are able to do so. Therefore, if employees perceive their schedules to be unfair, they may simply change to a schedule that suits them better.

Interpersonal schedule justice was related to intentions to leave the LTC industry, and informational schedule justice was related to both engagement and intentions to leave the LTC industry. Participants who felt they received more information regarding their schedules were more engaged at work and less likely to report intentions to leave the LTC industry. Additionally, participants who perceive more fair treatment from the person responsible for their work schedules were less likely to intend to leave the industry. It is interesting to note that while low distributive schedule justice is related to intentions to change schedules, interpersonal and informational schedule justice were related to intentions to leave the job and industry. These findings suggest that if employees simply perceive their schedules as unfair, they will merely change schedules. However, the person responsible for making those schedules can influence their decisions to leave the job or the entire industry. This suggests that the key schedule-related practice for retaining employees in the job and
industry may be the interpersonal treatment employees receive regarding their schedules.

The finding that procedural schedule justice was not significantly related to any of the outcomes measured in this study was surprising. Procedural schedule justice refers to perceptions of fairness regarding the procedures used to determine work schedules. One potential reason for the lack of findings is that procedural schedule justice did not explain unique variance above the other three justice facets. Although the four-facet justice model has been supported in the literature (Colquitt, 2001), there is still some debate regarding the distinctness of the four justice facets (Cropanzano & Ambrose, 2001). For example, Cropanzano and Ambrose (2001) have argued that procedural justice and distributive justice may be conceptually similar, and that there is really only one "factor" of justice. The finding that the correlations between the work schedule justice facets ranged from .54 to .62 supports this notion. However, it is also important to note that the one, two, and three factor CFA models for work schedule justice were not superior to the four factor model. Future research should explore the four-facet measure of work schedule justice to determine the distinctness of the facets.

Another possible reason why procedural schedule justice was not related to any of the outcomes is that the scale was focused on employees’ ability to have input into their schedules. It is possible that because the LTC industry has such a high turnover rate, employees are able to choose the shifts they want, and therefore the ability to choose shifts did not influence any of the outcomes. Other items focusing more on the
organizational procedures used to determine work schedule assignments might be more likely to be related to the outcomes examined.

A recent article by Posthuma, Maerz, and Dworkin (2007) examines four separate dimensions of procedural justice in the work schedule context. Specifically, these authors examined advance notice, consistency in schedules, representativeness of views regarding work schedules, and input opportunity. The input dimension was not significantly correlated with turnover behavior, nor was it related to turnover in logistic regression analysis. These results suggest that if other aspects of procedural schedule justice, such as advance notice or consistency, were included in the measure, more significant findings may have emerged.

Research questions: Differences between shifts. Two research questions were proposed to gain insight into differences among employees working different shifts. Results of the research questions indicated that employees working on different shifts are demographically different. Perhaps the finding from RQ1 most relevant to the research hypotheses was that night shift workers had the longest tenure of all shifts. This suggests that employees working the night shift do so because they prefer that shift. It is possible that employees who have been unsuccessful on the night shift, possibly due to their circadian preferences or their non-work responsibilities, may have already self-selected out of that shift. This finding may explain why only one of the hypotheses concerning night work was significant. This result also supports the notion that certain individuals may prefer working the night shift, and choose to work that shift (Barton, 1994).
Night shift workers did not report being less engaged or more emotionally exhausted out than their counterparts working other shifts. Neither did they report more intentions to leave their current schedule, job, or the LTC industry. This finding may be due to the fact that employees who do not want to work night work have already moved on to different jobs. However, the amount of night work was significantly related to intentions to leave the schedule, which indicates some night work employees may be looking for alternate schedules. These results suggest that LTC organizations should strive to find a stable workforce of night shift employees who work that shift because they prefer to do so. If organizations can identify individuals who prefer the night shift they should have less turnover and negative outcomes associated with that shift.

Another interesting finding from the research questions was that evening shift workers tended to be younger, were more likely to be single, and were more likely to report school as a reason they worked their current shifts. The fact that evening shift workers were different than workers on the other shifts has also been found in studies of retail workers. For example, Charles (2004) conducted a study of retail workers in a large Midwestern “superstore” and found that evening shift workers were more likely to be young, single, have no childcare responsibilities, and be in school. The evening shift typically is between 2:00 p.m. and 10:00 p.m. Results from these two studies suggest that the evening shift may be ideal for people who go to school and have few family responsibilities. Employees on this shift can go to class in the morning and still be home in time to get a good night’s sleep, or study at night and sleep in. This
knowledge could be useful to LTC organizations when sourcing applicants for the evening shift. For example, when evening shift positions are open, they can be advertised at various schools in the area. Additionally, if relevant, the organization can emphasize any tuition reimbursement programs as a recruiting tool. Similarly, organizations may want to consider instituting this type of program if they are having trouble filling evening shifts.

Potential explanations for limited study findings

Of the forty-five hypotheses and sub-hypotheses tested in this study, only twelve were significant. Although this proportion is greater than one would expect by chance, it implies the need to explore some reasons for the limited findings. There are several potential explanations for the lack of support for the hypotheses in this study. Specifically, initial assumptions, measurement concerns, choice of outcome variables, high correlations between study variables, the current labor market in LTC, and the sample of night workers may all have influenced the results of this study. Each of these potential explanations is explored in depth below.

Assumptions. Results from this study suggest the need to reconsider some of the central assumptions that motivated the research questions and design. For example, two major assumptions that were made when formulating the study hypotheses proved to be inaccurate. First, in relation to night work, the majority of research suggests that night shifts are negative and generally people see these shifts as less desirable than other shifts. For example, nurses have rated night work as being related to more sleep-related problems, less leisure time, and being lonelier than other shifts (Bohle &
Tilley, 1998). However, conversations with night workers in this sample suggested the opposite was often true. Certain individuals preferred this shift and worked the night shift by choice. The fact that the night workers had the longest tenure suggests that not only do some people prefer this schedule but also that they remain on the night shift for extended periods of time. The fact that many of the night workers in the study were working that shift by choice makes it less likely that morningness/eveningness or non-work schedule fit would “buffer” the negative outcomes resulting from night work.

The second major assumption made at the beginning of this study was that LTC workers might have limited options related to jobs and schedules. In fact, due to the current job market in LTC, it became clear that the vast number of job openings for LTC workers gives employees the flexibility to change jobs as often as they like. LTC employees can literally quit their jobs and find a job down the street a few hours later, although this may be a bit more difficult in rural areas. This unique labor market may have influenced some of the unexpected results in the study. For example, employees with negative justice perceptions, low engagement, high emotional exhaustions, or intentions to leave may have already left the job. Therefore, the notion that employees first consider alternate job options when considering leaving is not necessarily relevant.

*Measurement concerns.* Another potential reason for the lack of study findings may be the measures included in the study. On the predictor side, the measure that seems particularly problematic was morningness/eveningness. This measure is based
on self-reported preferences for doing things at certain times of the day. People who score in the extremes on either end are said to be “morning-oriented” or “evening-oriented”. Those who fall in the middle are “intermediate” with no distinct preference (Smith et al., 2002). The distribution for morningness/eveningness in this study was normal, with the majority of participants falling in the middle of the scale. Although this distribution is similar to the sample used in Smith et al. (2002) analysis of morningness/eveningness scores in six countries, it suggests that the majority of respondents were not particularly morning- or evening-oriented.

Additionally, the average morningness/eveningness score for the participants in this study was six points lower than the average score presented by Smith et al. (2002). Similarly, the range for the present study was 14-46, while the range in the Smith et al. study was 14-57. This suggests that the participant sample for this study were slightly less evening-oriented than the participants of the Smith et al. study. Indeed, Smith and colleagues suggest a score of 43 is the cutoff for evening type. Using this cutoff, only six participants can be considered true "evening types.” It is possible that lack of variability and range restriction may be limiting the results of these hypotheses. If the sample had contained more true “evening types” or higher scores there might have been more significant interactions between morningness/eveningness and night work.

Past research has provided some evidence that self-reported preferences for doing activities during different times of the day are related to circadian preferences. For example, measures of morningness have been related to oral temperature (Horne
& Ostberg, 1976), greater need for sleep, (Taillard et al., 1999), and subjective alertness (Bohle, Tilley, & Brown, 2001; Kerkoff, 1998). However, only a handful of studies have found relationships between morningness/eveningness and success at night work, suggesting potential problems with the self-report measures.

Additionally, it is possible that because this measure is self-report, it captures some personality characteristics. Morningness/eveningness has been significantly related to extraversion, with evening people being more extraverted (Adan, 1992). Therefore, it is possible that the morningness/eveningness scale reflects other personality traits rather than or in addition to actual circadian preferences. Past research on morningness/eveningness combined with the results of this study suggest that self-report measures of this construct may not be useful in research. Perhaps research using more biological measures of circadian type, such as temperature would find more significant results in relation to night work. Additionally, future research should examine personality characteristics such as the Big Five personality traits to determine whether personality variables influence tolerance for night work.

Outcome measures. Another possible reason for the limited findings in this study concerns the selection of outcome measures. There were some potential sampling concerns with the outcome measures included in this study. The variability in the outcome measures was quite low, and emotional exhaustion and employee engagement were both highly skewed. The items in that make up the emotional exhaustion scale refer to respondent's ability to be empathetic and sensitive towards residents and the items in the engagement scale ask participants whether they are
proud and inspired by their jobs. Discussions with the LTC employees included in this study revealed that the major concern among employees was not having the resources to provide the appropriate level of care. Complaints related to the insurance industry, patient-staff ratios, and company resources were far more common that complaints regarding the work environment or other employee-related issues. Based on these conversations with study participants, it is plausible that emotional exhaustion and employee engagement did not have as much variability because the majority of employees are highly dedicated to the people they care for and the work that they do, even if they are unhappy with their current work environment. Perhaps if individuals reporting more emotional exhaustion and less engagement included in the study there would have been more significant results predicting these outcomes.

It is likely that if other outcome measures had been included in this study there would have been more significant results. Specifically, the interactions relating to night work may be more salient for health and sleep related effects as opposed to job attitudes. Additionally, more general job attitudes, such as job satisfaction and organizational commitment might have been more strongly related to the work schedule justice facets.

In general, results of this study revealed that working night work did not result in more emotional exhaustion, lower employee engagement, or higher intentions to leave the job or LTC industry. It is important to note that the finding that night work was not related to these job-related outcomes does not mean that the night working participants in this study did not experience negative health and sleep related
outcomes. However, ample research suggests that individuals working the night shift are more likely to have greater health concerns (Costa, 1996) and sleep related problems (Bourdouxhe, et al., 1999; Parkes, 2002), and they get less sleep than their day working counterparts (Axelsson, Akerstedt, Kecklund, & Lowden, 2004). Based on this evidence, it is possible that if health- and sleep-related outcomes had been included as outcome measures in this study there would have been more significant results related to the night work hypotheses. Indeed, Sinclair and colleagues (2007) found significant interactions between distributive schedule justice and interpersonal schedule justice on gastrointestinal complaints and having difficulty at school (e.g., low grades, falling behind).

Similarly, the lack of findings concerning morningness/eveningness and night work may be because evening-orientation influences night workers more on sleep and health-related issues rather than attitudinal variables. For example, if employees are more inclined towards eveningness (even if they are below the cutoff), they may experience fewer sleep and fatigue-related outcomes because they are more flexible in their sleeping habits. However, the ability to get more sleep may not translate into differences in emotional exhaustion, engagement, or intentions to leave. Instead, other predictors, such as non-work schedule fit, may be more likely to influence these outcomes. Additionally, as previously mentioned, it is possible that it is difficult to measure morningness/eveningness via self-report measure. It may only be through physical or objective measures that this individual preference can be fully captured.
The fact that night workers in LTC may experience negative health- and sleep-related outcomes even if they are reporting positive job-related attitudes is important for both the individual and the organization. Potentially serious health concerns can result from working at night or working non-standard shift work for extended periods of time. For example night work and mixed shift schedules, have been associated with sleep deprivation, fatigue, gastrointestinal disorders, cardiovascular disorders, and women’s reproductive disorders (Costa, 1996; Smith, Folkard, & Fuller, 2003). In addition, employees working the night shift are likely to experience more fatigue than their day-working counterparts (Axelsson et al., 2004; Spelton et al., 1995). This fatigue may lead night working employees to be less attentive to detail and have more accidents because they are tired. In fact, some research suggests that injuries are more common on the night shift than the day shift (Fortson, 2004). Indeed, research conducted in the manufacturing sector indicates that the highest percentage of accidents occurs in the fifth or sixth hour of the night shift and this figure may be attributed to accumulated fatigue (Nag & Patel, 1998).

Similarly, when considering non-work schedule fit it is important to acknowledge that many people who choose night work do so to care for their children during the day (Presser, 2004). While these individuals may report more positive attitudes because they are working their preferred schedule, this arrangement begs the question of “when do they sleep?” Some research suggests that domestic commitments and perceived work-home conflict result in reduced sleep duration, more sleep difficulties, and lower levels of alertness at work in nurses (Spelton et al., 1995).
These findings suggest the need for research examining different outcomes such as sleep quality, fatigue, and health problems in relation to domestic commitments and non-work schedule fit.

Only four of the twenty main effects hypotheses and sub-hypotheses related to work schedule justice were significant in this study. One emerging line of justice research that is important to consider in light of the current findings is the concept of exploring different sources of justice in addition to using the four-facet framework presented by Colquitt (2001). This perspective (Cropanzano & Ambrose, 2001; DeConnick & Stillwell, 2004) suggests that perceptions of fair treatment from different sources (e.g., supervisors, organizations, co-workers) are related to different outcomes focused on the same source. For example, perceptions of fair treatment from a supervisor should be more strongly related to supervisor satisfaction than organizational commitment.

Using this framework, it is possible to think of other potential outcomes that might have been more strongly related to the work schedule justice facets. For example, procedural schedule justice was not related to any of the outcomes examined in this study. However, some research suggests that procedural justice is more focused on the organization than aspects of the job itself (Folger & Konovosky, 1989). Therefore, it is possible that if organizationally-focused outcomes such as organizational commitment had been included in the study there would have been more significant results. For example, past research has shown procedural justice is
related to organizational trust (Colquitt, 2001) and organizational commitment (Colquitt, 2001; Folger & Konovosky, 1989; Konovosky & Cropanzano, 1991).

Future research should examine how this recent justice literature can be applied to the concept of work schedule justice. Informational and interpersonal schedule justice might be related to satisfaction with supervisor, while distributive schedule justice may be more related to job satisfaction or schedule satisfaction. For example, Charles and Sinclair (2007) found that the different work schedule justice facets were related to different outcomes. In this study, procedural and informational schedule justice were related to perceived organizational support, and distributive and informational schedule justice were related to job satisfaction. More research on how the different work schedule justice facets might influence different outcomes is needed (e.g., supervisor focused, organization focused, schedule focused).

LTC labor market. The finding that the majority of participants reported personal preference as a reason for working their current shift may explain the limited findings for the intentions to leave outcomes. It is possible that because there are so many available LTC jobs, employees who have difficulty working a night shift or think their schedules are unfair simply find another job. Indeed, during the informational interviews several LTC employees shared that they had moved to their current job for schedule-related reasons such as having the flexibility to deal with childcare emergencies and compatibility with a school schedule.

Additionally, past research suggests that when employees work a preferred schedule, they are likely to have more positive job attitudes, such as schedule
satisfaction, professional commitment, intentions to stay (Morrow et al., 1994) job satisfaction (Krauz et al., 2000), and organizational commitment (Krauz et al., 2000; Morrow et al., 1994). Additionally, Krauz et al. (2000) found that working a preferred schedule and having schedule control were related to lower levels of burnout in a sample of nurses. These results may explain the generally positive responses given by the study participants. If employees are already working their preferred schedules, they should report more positive job attitudes, less burnout, and fewer intentions to leave.

Because of the large number of job opportunities for LTC workers, it may be that people often quit impulsively, since they know they will be able to find another job with no problem. If this is the case, intentions to leave may not be as strong of a predictor of actual turnover as it might in other industries. In other words, if an employee intends to leave, there may not be much stopping them from doing so immediately. Additionally, it is possible that much of the turnover in this industry is not pre-meditated, but rather impulsive. For example, employees might quit because they have a schedule conflict, get into an argument with their supervisor, or learn another organization is paying .25 cents more an hour. This turnover would not be captured in the intentions to leave measures included in this study.

In a recent study, Morrell (2005) found three distinct types of turnover in nurses. The first type of turnover was what is generally considered in the literature and the focus of this study. Here, the decision to leave happens over time with nurses experiencing withdrawal and then making the final decision. The other two types of
Shift work in LTC

turnover involve "shocks" or sudden, unexpected changes in circumstances, and may not be preceded by any feelings of withdrawal. In the second type of turnover, nurses leave because of an unexpected work-related event, such as sudden schedule changes or an opportunity to make more money at a different job. The third type of turnover is related to a sudden change in a personal situation, such as having to move because a spouse is changing jobs. Given the nature of the LTC industry, it is possible that much of the turnover falls into the second two categories. The knowledge that getting another job will not be a problem may make it easy for employees to quit abruptly. If this is the case, the limited findings regarding intentions to leave may be explained because many employees might not go through the stage of intending to leave, they may simply leave when a shock occurs.

Due to the current shortage of LTC workers, employees often have a choice of where they want to work. However, this option may be different in more rural areas where there are not as many employment opportunities as in larger cities. Additionally, even though employees may be able to choose their shifts, other factors, such as a spouse's work schedule, childcare demands, school, or other jobs may restrict which shifts they work. Future research exploring employee perceptions of employment mobility could help to shed more light on how the labor market in LTC influences research on this population.

Sample of night workers. A potential concern with the first set of study hypotheses was the large number of participants reporting working no night work. Almost half the participants in this study did not work any night work. This creates a
significant range restriction issue for the analyses involving night work. However, when the regression analyses were re-run with only employees working some night work ($n=208$) no additional hypotheses were significant. This might be explained by the fact that although half the sample worked some night work, the number of participants working the night shift in this study was fairly small (11%). Many of the participants working night hours worked the evening shift, which typically goes until 10:00 p.m. These individuals may be able to go home and go directly to bed. In this case, the three hours of night work may not be negatively affecting their sleep patterns and therefore morning/evening orientation may not be relevant. It is possible that if more employees working the full night shift were included in the sample, evening orientation could have been a significant moderator.

Although efforts were made to increase the number of night worker participants, these employees were difficult to access because they were often not present at staff meetings. It is possible that the night workers who did not attend staff meetings may have been systematically different from those who did. For example, night workers who are less engaged, more emotionally exhausted, or planning to leave the schedule, job, or industry may be less likely to attend staff meetings. It is possible that a larger representation of night workers might result in stronger night work effects on the outcomes.

In addition to the low number of night workers, another potential explanation for the lack of night-work related findings may be that because the night workers had the longest tenure of all the shifts, they have either self-selected out of this shift
already or adapted to working night work. As previously discussed, the nature of the job market in LTC is such that an employee could quit a night shift and get a job working another shift quite easily. Therefore, it is likely that individuals who are dissatisfied with the night shift simply leave for another shift. This may be different than other industries, such as manufacturing where shift may be largely determined by tenure, so a newer employee may only have the night work as a shift option.

In addition to self-selection, those who prefer the night shift also may adapt to it over time. Some research suggests that certain people may be better able to adapt to night work than others (Akerstedt & Torsvall, 1981; Barton, 1994; Steele et al., 2000). Over time groups of night workers appear to be healthier, because only the hardy workers “survive”. This phenomenon is referred to as the “healthy worker effect” (European Foundation for the Improvement of Living and Working Conditions, 2000). It is possible that these night-working individuals have either adapted to a nocturnal schedule or have self-selected out of the shift. To accurately capture the effects of night work, longitudinal research should be conducted to determine the incidence of people leaving the night shift after a short period of time by tracking employees from the time they begin working the shift until they leave.

In the process of conducting this study, I identified several interesting possibilities for future research. For example, future studies could explore different outcome measures, include more night workers, revise the work schedule justice measures to include different facets of procedural schedule justice, and conduct a more detailed analysis of non-work schedule conflicts. Additionally, future research should
explore potential moderators of these relationships such as perceived employment mobility, labor market conditions, sleep quality, and past tenure on the night shift.

*Theoretical implications*

The results from this study have several theoretical implications. First, this study examines both morningness/eveningness and non-work schedule fit as potential moderators of relationships between night work and employee outcomes. Two of the interactions involving non-work schedule fit were significant, although not in the pattern that was hypothesized. Additionally, non-work schedule fit as a main effect predicted four of the five outcomes examined. Specifically, participants who reported that their work schedules were compatible with their non-work lives were more engaged and less likely to report intentions to leave their current schedule, job, or the LTC industry. These results suggest that future research should consider non-work schedule fit as an important aspect of work schedule management. For example, Barnett, Garci, and Brennan (1999) found that fit between preferred and actual number of work hours as perceived by employees and their spouses was related to burnout in physicians. Indeed, non-work schedule fit appeared to be more important to the outcomes measured in the present study than amount of night work. This finding suggests that schedule compatibility, rather than shift may be the key driver of schedule-related turnover. Future research should examine specific aspects of non-work schedule fit, such as childcare, school, social activities, and others, to gain a clearer picture of what may be influencing these results.
Additionally, it is possible that non-work schedule fit can be integrated into the work schedule justice framework. Non-work schedule fit and distributive schedule justice were fairly highly correlated ($r = .58$). This suggests that there might be a fairness component to non-work schedule fit. It is plausible that employees whose work schedules fit with their non-work lives are likely to view their schedules as being fair. Similarly, non-work schedule fit was moderately correlated with both informational and interpersonal schedule justice ($r = .50$). When employees perceive that their supervisors treat them respectfully and inform them about their schedules they also are more likely to achieve greater non-work schedule fit. Perhaps more supportive staffing coordinators also work harder to accommodate employees' non-work demands when creating schedules.

The concept of morningness/eveningness has been one of the most widely studied individual differences in relation to shift work (Akerstedt & Torsvall, 1981; Hildebrandt & Stratmann, 1979; C. S. Smith et al., 2003; Steele et al., 2000), however few studies have examined its relationship to attitudinal variables. Past research regarding its relationship to tolerance for night work has yielded inconsistent findings. The finding that the morningness/eveningness hypotheses were not supported in this study, is similar to other studies that have not found morningness to be related to night work (Nachriener, 1990). It appears that more research is still needed on this concept to determine its impact on adaptation to night work.

Furthermore, it may be useful to obtain a more physical measure of morningness/eveningness rather than relying on the self-report scale. It also is possible
that morningness/eveningness is not as relevant to retention concerns as other
variables, such as non-work schedule fit. Additionally, research examining other
personal characteristics, such as personality traits and demographic differences may
shed more light on how individual differences interact with work schedules.

This study contributes to both organizational justice research and shift work
research by exploring a new concept, work schedule justice. An organizational justice
framework has been applied to several other workplace variables, such as drug testing
(Paronto et al., 2002), employee selection (Gilliland, 1993; Truxillo et al., 2002), and
compensation (Folger & Konovsky, 1989; Greenberg, 1990). This research extends
organizational justice research to another workplace situation, work schedules.
Findings from this study provide some support for the four-facet model of work
schedule justice. However, recent justice research has focused on the source of justice
in addition to the four facets examined in this study (Cropanzano & Ambrose, 2001;
DeConnick & Stillwell, 2004). Future research should examine this and other
applications of the four-facet justice model to determine whether this is the most
appropriate model to use when studying work schedule justice. Using this approach,
distributive schedule justice is focused on the job or schedule itself, informational and
interpersonal schedule justice are focused on the staffing coordinator, and procedural
schedule justice may focus on the facility or organization. Therefore, it would be
interesting to examine different outcomes such as job satisfaction, staffing coordinator
satisfaction or perceived support, and organizational commitment to see if there are
stronger relationships between the same justice and outcome targets.
The majority of work schedule research examines the effects of actual shift arrangements on employee outcomes (e.g., Blau & Lunz, 1999; Jamal, 1981; Khaleque, 1999). Some studies have investigated employee perceptions of work schedule policies, such as control over schedules and flexibility of shifts. Work schedule justice research presents a theoretical framework that includes these concepts by examining the four facets of justice. Results from this study demonstrate the importance of different aspects of work schedules, including fairness of the schedules themselves, interpersonal treatment and communication received regarding work schedules, and compatibility of work schedules with non-work responsibilities. Future research should continue to examine these aspects of work schedules, in addition to the design of schedules themselves.

For example, work schedule justice should be examined in different shift work environments and with different outcomes. Specifically, it would be interesting to see if work schedule justice was related to health or sleep related effects of shift work. Sinclair and colleagues (2007) found some evidence that work schedule justice is correlated with self-reported gastrointestinal complaints, immune system function, and pain. Future research should investigate other outcomes such as organizational commitment, staffing coordinator satisfaction, safety performance, and turnover behavior to determine whether these outcomes are more relevant to the work schedule justice facets.

Another important theoretical contribution of this research is the systems focus on both individual and organizational-focused aspects of work schedules. By including
personal characteristics and workplace fairness variables, this study investigates the relevant importance of these predictors on outcomes. Results indicated that both personal characteristics, mainly schedule fit with non-work responsibilities, and three of the four work schedule justice facets were related to different outcomes. These findings suggest that organizations should consider employee schedule needs and procedures and policies related to schedules to improve job attitudes and reduce retention.

Practical implications

From a practical standpoint, understanding the personal characteristics that influence success in shift work tolerance can help LTC employers improve job attitudes and retention. Although morningness/eveningness was not related to intentions to leave, non-work schedule fit appeared to be quite important. In the LTC industry, a large portion of the workforce consists of single mothers. Understanding how work schedule conflicts interact with non-work responsibilities may help organizations design innovative work-family and scheduling policies. For example, one potential intervention might be to hire enough on-call staff to easily cover for an employee who needs to switch shifts or miss a shift. Another potential intervention would be to create a system to allow employees to trade shifts when needed. If the program ensured that all shifts were covered and did not create overtime, employees might view their schedule as being more compatible with their non-work lives, and therefore be more engaged and more likely to remain in their current positions.
One schedule intervention that has been studied is schedule flexibility. Ng et al. (2006) found that schedule flexibility (e.g., having input into one’s schedule, having a schedule that does not interfere with family responsibilities) was positively related to organizational commitment in retail workers. Other research has found that control over working times is related to physical health in women (Ala-Mursula, Vahtera, Kivimaki, Kevin, & Pentti, 2002). Similarly, Fenwick and Tausig (2001) found that control over scheduling work hours associated with more work-home balance, decreased burnout, distress, increased satisfaction, fewer physical problems, and better general health. Taken together, these results indicate the benefits of allowing employees’ control over their schedules. Therefore, organizations should allow employees’ to be flexible with their schedules whenever possible (e.g., employee input, ability to change shifts when needed).

The study of work schedule justice has several practical implications. Distributive schedule justice refers to employees' perceptions of fairness about their current work schedules. Distributive schedule justice was significantly related to turnover intentions for the schedule. Perhaps one of the easiest ways to increase distributive schedule justice is to hire employees for specific shifts. When employees are hired for a certain shift, they should be more likely to perceive distributive justice, even if they do not like the shift, because they chose to accept the position. Furthermore, although procedural schedule justice was not significantly related to any of the study variables, results from the qualitative study and conversations with employees during data collection suggest that if employees request to change shifts,
organizations should grant their requests when feasible. Finally, if an employee feels they are treated with low interpersonal or informational justice regarding a request to change schedules, their intentions might escalate into a desire to leave the industry all together. Therefore, people responsible for making schedules should treat employees respectfully and provide them with information regarding scheduling decisions and policies.

While several of the study hypotheses were not supported, there may be other job attitudes that are related to these types of schedule justice. Additionally, utilizing the four-facet justice model may help organizations identify specific targets for work schedule interventions. For example, assessing mean scores on the four justice facets might direct organizations to focus intervention efforts on training staffing coordinators or developing new schedule procedures, depending on which facets are rated low by employees.

Interpersonal schedule justice refers to the treatment employees receive in relation to their work schedule and informational schedule justice addresses the communication regarding schedules. In the LTC industry, there is often one staffing coordinator in each facility who is responsible for scheduling. My findings suggest the staffing coordinator can be vital to retaining employees. Staffing coordinators can potentially affect the facility retention and the overall labor pool for the LTC industry. Other research suggests that supervisor social support acts as a buffer for the relationships between work stressors and job satisfaction and intentions to quit the job for nurses working shift work (Schmieder & Smith, 1996). Results from this study
indicate that this social support buffer is stronger for shift-workers than nurses working standard schedules, indicating the particular salience of supervisor social support for shift workers.

The staffing coordinator has tremendous influence on perceptions of interpersonal and informational schedule justice. For example, in some facilities the staffing coordinator is very in touch with the employees. In these environments, employees can go to the staffing coordinator and request schedule changes for things like child care needs, school, or other personal appointments. Even if these requests cannot be accommodated, the effort on the part of the staffing coordinator to respond to scheduling requests can have important organizational implications. The manner and attitude with which a staffing coordinator deals with employee schedules is something an organization can influence to create a more positive work environment. Consistent with this idea, other research has found that perceived organizational support is positively related to nurses’ health and job satisfaction (Bradley & Cartwright, 2002). Treating employees well appears to be important for retaining employees in the LTC industry as a whole. This is important because many direct care workers can easily move to jobs with similar compensation and schedules in other industries such as retail or casual dining.

Informational schedule justice refers to the communication employees receive about their schedules. For example, if an employee is scheduled for a shift they do not usually work, the staffing coordinator can do several things. If the schedule is simply posted with no explanation, an employee may feel the schedule change is unfair.
However, if the staffing coordinator approaches the employee and explains the
schedule change (e.g., “Patty has a doctor’s appointment, so I need to switch your
shift”), the employee may be much more open to making the change. Similarly, if
there is a stated policy about awarding overtime, working holidays, or requesting a
schedule change that is communicated to employees, employees are likely to have
higher perceptions of fairness.

Fortunately, increasing work schedule interpersonal and informational
schedule justice should be somewhat easy and inexpensive. Organizations may want
to consider training staffing coordinators to share the reasons for their scheduling
decisions, as well as make organizational policies available to employees to increase
perceptions of informational schedule justice. Providing training to staffing
coordinators on interpersonal skills and communication might also influence retention.
For example, in a study of nurses’ compensation, Greenberg (2006) found that when
supervisors were trained in interactional justice, nurses’ insomnia was significantly
lower immediately after training and remained lower six months after training.
Greenberg’s study provides evidence for the notion that this type of training could be
effective for work schedule justice.

Observations at different facilities during data collection suggested that
different staffing coordinators had different attitudes towards employee needs. Some
staffing coordinators felt an obligation to be flexible with schedules and help
employees meet their non-work responsibilities. These individuals seemed to
understand that employees would leave if they could not make their schedules work
for them. They also acknowledged that even though they could not always meet their employees' requests, they always made an effort to do so. Conversely, some staffing coordinators refused to allow any changes once schedules were posted. In these facilities, schedules were posted two weeks in advance and changes were only allowed in extreme circumstances. These staffing coordinators seemed to have an attitude that employees would just try to take advantage of them, so they had to be strict in their rules. However, it is easy to see how an employee might impulsively quit if they had a schedule conflict and knew they could not trade shifts because their staffing coordinator did not care about their needs.

Although it may seem intuitive to create fair policies, communicate information, and treat people with respect, these things do not always happen in the LTC context. First, because of the high turnover in the LTC industry, even the most carefully planned schedules will be disrupted when people quit. Additionally, there may be turnover among staffing coordinators, which can result in discrepancies in schedule policies and result in inconsistent scheduling. Organizations might not always consider work schedules as an important focus in light of everything else they have going on. However, a greater focus on work schedules may be worthwhile for organizations concerned with employee attitudes and turnover. Having solid policies to deal with work schedule issues can potentially help organizations avoid negative outcomes associated with perceptions of work schedule injustice.

Perceptions of work schedule justice should be salient to LTC organizations for several reasons. Some research on work schedules suggest that employees' choices
of schedules, schedule flexibility, and work schedule congruence with their non-work lives are related to their attitudes and turnover intentions and behavior (Burke & Greenglass, 2000; Fenwick & Tausig, 2001; Havlovic et al., 2002; Holtom et al., 2002). Additionally, working a preferred schedule is related to employee perceptions of quality of care (Havlovic et al., 2002). In conclusion, the findings from this study suggest that organizations should consider both individual and organizational schedule-related differences when determine work schedule policies and interventions.

Suggestions for future research

As with all research, this study could be improved or expanded on in several ways in future studies. Some potential directions for future research have been mentioned previously. The following section outlines several additional considerations for future research.

Because the study was conducted with only one organization in one region of the United States, generalizability to other industries, organizations, and cultures may be limited. This is because organizations vary their practices regarding scheduling employees, and more research is needed to assess the influence of personal characteristics and work schedule justice on employee outcomes. Furthermore, in the United States, laws regarding patient to staff ratios vary from state to state. More research examining states with and without mandatory staffing ratios is needed to get a clearer picture of scheduling issues in the LTC as a whole.

Although this study focuses on the LTC industry, work schedule issues are salient in other industries as well. For example, employees in the retail, law
enforcement, and manufacturing industries all work on 24-hour schedules. More research is needed to determine whether the findings of this study generalize to other industries. For example, while the direct care population is largely women, shift workers in manufacturing are more likely to be men, and consequently have fewer childcare obligations. Therefore, schedule fit with non-work commitments may not be as salient for the manufacturing population. However, schedule fit with other social activities may still be salient.

One potential limitation of this study is that all the variables are measured by self-report and at only one time point. As previously mentioned, due to the potential nature of turnover in the LTC industry being more “shock”-driven that based on a thought out decision, the cross sectional nature of this study may have limited potential study findings. Future research should employ a longitudinal study design to assess the impact of work schedules throughout employees’ employment.

A potential concern with using self-report measures is common method bias. However, Spector (2006) suggests that the concerns of common method bias due to self-report surveys may be overstated. Even so, in an attempt to reduce common method bias, following recommendations by Podsakoff, MacKenzie, Lee, and Podsakoff (2003), efforts were made to reduce evaluation apprehension, by striving to ensure respondent confidentiality.

I was present during the majority of the data collection and ensured respondents that other organizational members would not see their responses by providing envelopes to seal completed surveys in and personally collecting surveys
completed during staff meetings. Although efforts were made to ensure confidentiality, participants often completed the surveys during meetings, where coworkers could have observed their answers. Additionally, the questionnaire was designed so the items for individual scales were dispersed throughout the survey. While several scales had unique response options, the rest of the scales were mixed throughout the survey. Additionally, several variables in the study asked objective questions, such as questions related to schedule, and demographic variables. These efforts should reduce the potential concerns of common method bias.

Conclusions

Overall, results of this study suggest that personal characteristics and organizational policies and procedures, interpersonal treatment, and communication regarding schedules have important implications for shift work management. Using a systems approach to examine work schedule research provides top down and bottom up view of the different forces influencing work schedule-related outcomes. This study also contributes to existing work schedule literature by extending research studying differences between shift designs (e.g., night versus day work) and examining work schedules from a more contextual perspective. Specifically, rather than assuming certain shifts, such as night work, are inherently bad, this research suggests that the focus should be on the employee’s fit with the schedule and the organizational practices related to managing work schedules.

The LTC industry currently faces significant problems related to staffing and retention. This research will hopefully provide insight into ways for organizations to
use work schedules to recruit and retain employees. My results suggest that employees who will fit with a certain schedules should have longer tenure, thus leading to significant benefits for employers. This includes selecting people who prefer night work for the night shift and possibly recruiting students and younger individuals for the evening shift. Similarly, helping employees find schedules that fit with their non-work lives, providing fair and consistent schedules, and good interpersonal relationships regarding schedules appear to influence several positive employee outcomes. Overall, results from this study have both theoretical and practical significance and suggest several areas for continued work schedule research.
### Summary of Proposed Hypotheses

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Proposed Outcomes</th>
<th>Emotional Exhaustion</th>
<th>Employee Engagement</th>
<th>Turnover Intentions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Proposed Relationships</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Night work x morningness/eveningness</td>
<td>See Figures 2 and 3</td>
<td>H1</td>
<td>H2</td>
<td>H3a-c</td>
</tr>
<tr>
<td>Night work x non-work schedule fit</td>
<td>See Figures 2 and 3</td>
<td>H4</td>
<td>H5</td>
<td>H6a-c</td>
</tr>
<tr>
<td>Distributive schedule justice (DSJ)</td>
<td>↑ WSDJ = ↑ engagement and ↓ emotional exhaustion and turnover intentions</td>
<td>H7</td>
<td>H8</td>
<td>H9a-c</td>
</tr>
<tr>
<td>Procedural schedule justice (PSJ)</td>
<td>↑ WSPJ = ↑ engagement and ↓ emotional exhaustion and turnover intentions</td>
<td>H7</td>
<td>H8</td>
<td>H9a-c</td>
</tr>
<tr>
<td>Interpersonal schedule justice (IntSJ)</td>
<td>↑ WSIntJ = ↑ engagement and ↓ emotional exhaustion and turnover intentions</td>
<td>H7</td>
<td>H8</td>
<td>H9a-c</td>
</tr>
<tr>
<td>Informational schedule justice (InfSJ)</td>
<td>↑ WSGlobal = ↑ engagement and ↓ emotional exhaustion and turnover intentions</td>
<td>H7</td>
<td>H8</td>
<td>H9a-c</td>
</tr>
<tr>
<td>DSJ x PSJ</td>
<td>See Figures 4 and 5</td>
<td>H10a</td>
<td>H10b</td>
<td>H10c-e</td>
</tr>
<tr>
<td>DSJ x IntSJ</td>
<td>See Figures 4 and 5</td>
<td>H11a</td>
<td>H11b</td>
<td>H11c-e</td>
</tr>
<tr>
<td>DSJ x InfSJ</td>
<td>See Figures 4 and 5</td>
<td>H12a</td>
<td>H12b</td>
<td>H12c-e</td>
</tr>
</tbody>
</table>
Table 2

*Pilot Study Reliabilities*

<table>
<thead>
<tr>
<th>Scale Name</th>
<th>Pilot Study Mean</th>
<th>Pilot Study SD</th>
<th>Pilot Study Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pay fairness</td>
<td>3.38</td>
<td>.91</td>
<td>.86</td>
</tr>
<tr>
<td>Morningness/eveningness</td>
<td>2.46</td>
<td>.64</td>
<td>.77</td>
</tr>
<tr>
<td>Non-work schedule fit</td>
<td>3.48</td>
<td>1.03</td>
<td>.83</td>
</tr>
<tr>
<td>Distributive schedule justice</td>
<td>3.85</td>
<td>.68</td>
<td>.76</td>
</tr>
<tr>
<td>Procedural schedule justice</td>
<td>3.54</td>
<td>.89</td>
<td>.62</td>
</tr>
<tr>
<td>Interpersonal schedule justice</td>
<td>4.07</td>
<td>.66</td>
<td>.85</td>
</tr>
<tr>
<td>Informational schedule justice</td>
<td>3.43</td>
<td>.88</td>
<td>.96</td>
</tr>
<tr>
<td>Emotional exhaustion</td>
<td>3.17</td>
<td>1.14</td>
<td>.80</td>
</tr>
<tr>
<td>Engagement</td>
<td>3.97</td>
<td>1.52</td>
<td>.89</td>
</tr>
<tr>
<td>Intentions to leave schedule</td>
<td>2.64</td>
<td>2.64</td>
<td>.86</td>
</tr>
<tr>
<td>Intentions to leave job</td>
<td>2.85</td>
<td>2.85</td>
<td>.89</td>
</tr>
<tr>
<td>Intentions to leave industry</td>
<td>2.86</td>
<td>1.16</td>
<td>.89</td>
</tr>
</tbody>
</table>

*Note: N = 52*
Table 3

*Results from Confirmatory Factor Analysis*

<table>
<thead>
<tr>
<th>Model</th>
<th>Chi-Square</th>
<th>df</th>
<th>CFA</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1 (full measurement model)</td>
<td>1563.38</td>
<td>847</td>
<td>.92</td>
<td>.05</td>
</tr>
<tr>
<td>Model 2 (3-factor WSJ; informational and interpersonal combined)</td>
<td>2032.08</td>
<td>857</td>
<td>.87</td>
<td>.06</td>
</tr>
<tr>
<td>Model 3 (3-factor WSJ; distributive and procedural justice combined)</td>
<td>1739.64</td>
<td>856</td>
<td>.91</td>
<td>.05</td>
</tr>
<tr>
<td>Model 4 (2-factor WSJ; procedural, interpersonal, and informational justice combined)</td>
<td>2271.48</td>
<td>866</td>
<td>.85</td>
<td>.07</td>
</tr>
<tr>
<td>Model 4 (1-factor WSJ)</td>
<td>2563.99</td>
<td>874</td>
<td>.82</td>
<td>.07</td>
</tr>
</tbody>
</table>

*Note: N = 389; WSJ = work schedule justice*
Table 4
ANOVA Results for Facility Effects on Dependent Variables

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Analyses with all facilities</th>
<th>Analyses with facility 8 removed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Exhaustion</td>
<td>$F(19, 371) = 1.23, p &gt; .05$</td>
<td>$F(19, 347) = 1.19, p &gt; .05$</td>
</tr>
<tr>
<td>Engagement</td>
<td>$F(19, 371) = 2.27, p &lt; .01$</td>
<td>$F(19, 347) = 1.55, p &gt; .05$</td>
</tr>
<tr>
<td>Intentions to Leave</td>
<td>$F(19, 371) = 1.01, p &gt; .05$</td>
<td>$F(19, 347) = 1.34, p &gt; .05$</td>
</tr>
<tr>
<td>Schedule</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intentions to Leave Job</td>
<td>$F(19, 371) = 2.15, p &lt; .01$</td>
<td>$F(19, 347) = 1.23, p &gt; .05$</td>
</tr>
<tr>
<td>Intentions to Leave LTC</td>
<td>$F(19, 371) = 1.58, p &gt; .05$</td>
<td>$F(19, 347) = 1.39, p &gt; .05$</td>
</tr>
<tr>
<td>Industry</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: $N = 389$
Table 5  
*Means, Standard Deviations, and Correlations of Study Variables*  

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Average Hours per week</td>
<td>37.93</td>
<td>9.81</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Tenure</td>
<td>77.25</td>
<td>89.20</td>
<td>.02</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Pay Fairness</td>
<td>3.12</td>
<td>.93</td>
<td>.05</td>
<td>.14**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Other job (1=no OJ, 2=OJ)</td>
<td>1.82</td>
<td>.38</td>
<td>-.03</td>
<td>.10</td>
<td>.08</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. DSJ</td>
<td>3.72</td>
<td>.96</td>
<td>.02</td>
<td>.05</td>
<td>.28**</td>
<td>-.02</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. PSJ</td>
<td>3.49</td>
<td>.90</td>
<td>.00</td>
<td>.00</td>
<td>.16**</td>
<td>-.02</td>
<td>.55**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. InfSJ</td>
<td>3.58</td>
<td>1.05</td>
<td>-.02</td>
<td>-.02</td>
<td>.29**</td>
<td>.07</td>
<td>.62**</td>
<td>.50**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Night Work</td>
<td>8.15</td>
<td>11.75</td>
<td>.06</td>
<td>.09</td>
<td>-.04</td>
<td>-.03</td>
<td>-.10*</td>
<td>-.17**</td>
<td>-.21**</td>
<td>-.16**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>9. Morningness</td>
<td>2.95</td>
<td>.57</td>
<td>.03</td>
<td>.03</td>
<td>.05</td>
<td>.04</td>
<td>.01</td>
<td>-.13**</td>
<td>-.00</td>
<td>.07</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>10. Non-work schedule fit</td>
<td>3.73</td>
<td>.98</td>
<td>-.03</td>
<td>-.03</td>
<td>.25**</td>
<td>.08</td>
<td>.58**</td>
<td>.44**</td>
<td>.50**</td>
<td>-.20**</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>11. Emotional Exhaustion</td>
<td>2.63</td>
<td>1.31</td>
<td>-.01</td>
<td>.03</td>
<td>.02</td>
<td>-.02</td>
<td>.04</td>
<td>-.06</td>
<td>-.05</td>
<td>-.09</td>
<td>-.04</td>
<td>-.04</td>
</tr>
<tr>
<td>12. Engagement</td>
<td>4.99</td>
<td>.97</td>
<td>.09</td>
<td>.24**</td>
<td>.20**</td>
<td>.00</td>
<td>.28**</td>
<td>.24**</td>
<td>.38**</td>
<td>.34**</td>
<td>-.05</td>
<td>-.15**</td>
</tr>
<tr>
<td>13. Intentions to leave schedule</td>
<td>2.52</td>
<td>1.06</td>
<td>-.02</td>
<td>-.19**</td>
<td>-.19**</td>
<td>-.08</td>
<td>-.53**</td>
<td>-.36**</td>
<td>-.36**</td>
<td>-.36**</td>
<td>.21**</td>
<td>-.10*</td>
</tr>
<tr>
<td>14. Intentions to leave job</td>
<td>2.55</td>
<td>1.08</td>
<td>.02</td>
<td>-.16**</td>
<td>-.23**</td>
<td>-.14**</td>
<td>-.26**</td>
<td>-.14**</td>
<td>-.28**</td>
<td>-.24**</td>
<td>.06</td>
<td>.03</td>
</tr>
<tr>
<td>15. Intentions to leave industry</td>
<td>2.59</td>
<td>1.20</td>
<td>.01</td>
<td>-.23**</td>
<td>-.31**</td>
<td>-.10</td>
<td>-.36**</td>
<td>-.21**</td>
<td>-.42**</td>
<td>-.42**</td>
<td>.12*</td>
<td>.04</td>
</tr>
</tbody>
</table>

*Note: DSJ = distributive schedule justice; PSJ = procedural schedule justice; IntSJ = interpersonal schedule justice; InfSJ = informational schedule justice*
Table 5  
*Means, Standard Deviations, and Correlations of Study Variables*

<table>
<thead>
<tr>
<th></th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Average Hours per week</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Tenure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Pay Fairness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Other job (1=no OJ, 2=OJ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. DSJ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. PSJ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. InfSJ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. IntSJ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Night Work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Morningness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Non-work schedule fit</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Emotional Exhaustion</td>
<td>-.09</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Engagement</td>
<td>.35**</td>
<td>-.12*</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Intentions to leave schedule</td>
<td>-.52**</td>
<td>.06</td>
<td>-.23**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>15. Intentions to leave job</td>
<td>-.32**</td>
<td>.11*</td>
<td>-.43**</td>
<td>.44**</td>
<td>1.00</td>
</tr>
<tr>
<td>16. Intentions to leave industry</td>
<td>-.37**</td>
<td>.05</td>
<td>-.46**</td>
<td>.45**</td>
<td>.74**</td>
</tr>
</tbody>
</table>
### Table 6
Regression Results for Emotional Exhaustion

<table>
<thead>
<tr>
<th>Step</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>$\Delta R^2$</th>
<th>$B(\text{se})$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average hours per week</td>
<td>.00</td>
<td>-.01</td>
<td>.00</td>
<td>.00 (.01)</td>
<td>-.01</td>
</tr>
<tr>
<td>Pay fairness</td>
<td></td>
<td></td>
<td></td>
<td>.01 (.07)</td>
<td>.01</td>
</tr>
<tr>
<td>Other job</td>
<td></td>
<td></td>
<td></td>
<td>-.09 (.18)</td>
<td>-.03</td>
</tr>
<tr>
<td>Tenure</td>
<td></td>
<td></td>
<td></td>
<td>.00 (.00)</td>
<td>.00</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>.03</td>
<td>.00</td>
<td>.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average hours per week</td>
<td></td>
<td></td>
<td></td>
<td>.00 (.01)</td>
<td>-.02</td>
</tr>
<tr>
<td>Pay fairness</td>
<td></td>
<td></td>
<td></td>
<td>.07 (.08)</td>
<td>.05</td>
</tr>
<tr>
<td>Other job</td>
<td></td>
<td></td>
<td></td>
<td>-.05 (.18)</td>
<td>-.02</td>
</tr>
<tr>
<td>Tenure</td>
<td></td>
<td></td>
<td></td>
<td>.00 (.00)</td>
<td>.05</td>
</tr>
<tr>
<td>Hours of night work</td>
<td></td>
<td></td>
<td></td>
<td>-.01 (.01)</td>
<td>-.07</td>
</tr>
<tr>
<td>Morningness</td>
<td></td>
<td></td>
<td></td>
<td>-.11 (.12)</td>
<td>.12</td>
</tr>
<tr>
<td>Non-work schedule fit</td>
<td></td>
<td></td>
<td></td>
<td>-.16 (.09)</td>
<td>-.12</td>
</tr>
<tr>
<td>Distributive schedule justice (DSJ)</td>
<td></td>
<td></td>
<td></td>
<td>.12 (.11)</td>
<td>.10</td>
</tr>
<tr>
<td>Procedural schedule justice (PSJ)</td>
<td></td>
<td></td>
<td></td>
<td>-.01 (.10)</td>
<td>.01</td>
</tr>
<tr>
<td>Informational schedule justice (InfSJ)</td>
<td></td>
<td></td>
<td></td>
<td>-.03 (.10)</td>
<td>-.03</td>
</tr>
<tr>
<td>Interpersonal schedule justice (IntSJ)</td>
<td></td>
<td></td>
<td></td>
<td>-.14 (.12)</td>
<td>-.10</td>
</tr>
<tr>
<td><strong>Step 3a</strong></td>
<td>.02</td>
<td>-.01</td>
<td>.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Night work x morningness</td>
<td></td>
<td></td>
<td></td>
<td>-.01 (.01)</td>
<td>-.15</td>
</tr>
<tr>
<td><strong>Step 3b</strong></td>
<td>.05</td>
<td>.02</td>
<td>.03**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Night work x non-work schedule fit</td>
<td></td>
<td></td>
<td></td>
<td>.02 (.01)</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3c</strong></td>
<td>.03</td>
<td>-.01</td>
<td>.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSJ x PSJ</td>
<td></td>
<td></td>
<td></td>
<td>.09 (.07)</td>
<td>.07</td>
</tr>
<tr>
<td><strong>Step 3d</strong></td>
<td>.02</td>
<td>-.01</td>
<td>.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSJ x InfSJ</td>
<td></td>
<td></td>
<td></td>
<td>.01 (.06)</td>
<td>.02</td>
</tr>
<tr>
<td><strong>Step 3e</strong></td>
<td>.02</td>
<td>-.01</td>
<td>.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSJ x IntSJ</td>
<td></td>
<td></td>
<td></td>
<td>-.02 (.06)</td>
<td>-.02</td>
</tr>
</tbody>
</table>

*Note. N = 389; *p < .05, **p < .01.*
Table 7
Regression Results for Engagement

<table>
<thead>
<tr>
<th>Step 1</th>
<th>R^2</th>
<th>Adjusted R^2</th>
<th>ΔR^2</th>
<th>B(se)</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average hours per week</td>
<td>.09**</td>
<td>.08</td>
<td>.09**</td>
<td>.01(.01)</td>
<td>.08</td>
</tr>
<tr>
<td>Pay fairness</td>
<td>.17(.05)</td>
<td>.16**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other job</td>
<td>-08(.13)</td>
<td>-.03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tenure</td>
<td>.00(.00)</td>
<td>.21**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>.25**</td>
<td>.23</td>
<td>.16**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average hours per week</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pay fairness</td>
<td>.04(.05)</td>
<td>.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other job</td>
<td>-12(.12)</td>
<td>-.05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tenure</td>
<td>.00(.00)</td>
<td>.19**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hours of night work</td>
<td>-.23(.08)</td>
<td>-.14**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morningness</td>
<td>.18(.06)</td>
<td>.18**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-work schedule fit</td>
<td>-.07(.07)</td>
<td>-.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distributive schedule justice (DSJ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedural schedule justice (PSJ)</td>
<td>.02(.0)</td>
<td>.02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informational schedule justice (InfSJ)</td>
<td>.20(.06)</td>
<td>.21**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpersonal schedule justice (IntSJ)</td>
<td>.15(.08)</td>
<td>.13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3a</td>
<td>.26</td>
<td>.23</td>
<td>.00</td>
<td>-.01(.01)</td>
<td>.27</td>
</tr>
<tr>
<td>Night work x morningness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3b</td>
<td>.26</td>
<td>.23</td>
<td>.00</td>
<td>.00(.00)</td>
<td>.03</td>
</tr>
<tr>
<td>Night work x non-work schedule fit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3c</td>
<td>.26</td>
<td>.23</td>
<td>.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSJ x PSJ</td>
<td>.01(.05)</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3d</td>
<td>.27</td>
<td>.25</td>
<td>.02**</td>
<td>.11(.04)</td>
<td>.15**</td>
</tr>
<tr>
<td>DSJ x InfSJ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3e</td>
<td>.26</td>
<td>.23</td>
<td>.00</td>
<td>.04(.04)</td>
<td>.06</td>
</tr>
<tr>
<td>DSJ x IntSJ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N = 389, *p < .05, ** p < .01.
Table 8
Regression Results for Intentions to Leave the Schedule

<table>
<thead>
<tr>
<th>Step</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>ΔR²</th>
<th>B(se)</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>.07**</td>
<td>.06</td>
<td>.07**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average hours per</td>
<td>.00(.01)</td>
<td>-.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pay fairness</td>
<td>-.19(.06)</td>
<td>-.17**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other job</td>
<td>-.15(.14)</td>
<td>-.05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past Tenure</td>
<td>.00(.00)</td>
<td>-.17**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td>.41**</td>
<td>.39</td>
<td>.34**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average hours per</td>
<td>.00(.00)</td>
<td>-.02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pay fairness</td>
<td>-.01(.05)</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other job</td>
<td>-.13(.11)</td>
<td>-.05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tenure</td>
<td>.00(.00)</td>
<td>-.14**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hours of night work</td>
<td>.01(.00)</td>
<td>.14**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morningness</td>
<td>-.17(.08)</td>
<td>-.09*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-work schedule fit</td>
<td>-.32(.06)</td>
<td>-.29**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distributive schedule justice (DSJ)</td>
<td>-.40(.07)</td>
<td>-.36**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedural schedule justice (PSJ)</td>
<td>-.04(.06)</td>
<td>-.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informational schedule justice (InfSJ)</td>
<td>.00(.06)</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpersonal schedule justice (IntSJ)</td>
<td>.09(.08)</td>
<td>.08</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 3a</strong></td>
<td>.45</td>
<td>.43</td>
<td>.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Night work x morningness</td>
<td></td>
<td></td>
<td></td>
<td>-.01(.01)</td>
<td>.20</td>
</tr>
<tr>
<td><strong>Step 3b</strong></td>
<td>.45</td>
<td>.43</td>
<td>.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Night work x non-work schedule fit</td>
<td></td>
<td></td>
<td></td>
<td>.01(.00)</td>
<td>.09*</td>
</tr>
<tr>
<td><strong>Step 3c</strong></td>
<td>.45</td>
<td>.43</td>
<td>.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSJ x PSJ</td>
<td></td>
<td></td>
<td></td>
<td>.00(.05)</td>
<td>.00</td>
</tr>
<tr>
<td><strong>Step 3d</strong></td>
<td>.45</td>
<td>.43</td>
<td>.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSJ x InfSJ</td>
<td></td>
<td></td>
<td></td>
<td>-.06(.04)</td>
<td>-.08</td>
</tr>
<tr>
<td><strong>Step 3e</strong></td>
<td>.45</td>
<td>.43</td>
<td>.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSJ x IntSJ</td>
<td></td>
<td></td>
<td></td>
<td>-.08(.04)</td>
<td>-.09</td>
</tr>
</tbody>
</table>

Note. N = 389, *p < .05, ** p < .01.
Table 9
Regression Results for Intentions to Leave the Job

<table>
<thead>
<tr>
<th>Step</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>ΔR²</th>
<th>B (se)</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average hours per week</td>
<td>.08**</td>
<td>.07</td>
<td>.08**</td>
<td>.00 (.01)</td>
<td>.03</td>
</tr>
<tr>
<td>Pay fairness</td>
<td>.24 (.06)</td>
<td>-.21**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other job</td>
<td>-.33 (.14)</td>
<td>-.12*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tenure</td>
<td>.00 (.00)</td>
<td>-.12*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>.17**</td>
<td>.15</td>
<td>.07**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average hours per week</td>
<td>.00 (.01)</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pay fairness</td>
<td>-.14 (.06)</td>
<td>-.12*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other job</td>
<td>-.29 (.14)</td>
<td>-.10*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past Tenure</td>
<td>.00 (.00)</td>
<td>-.10*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hours of night work</td>
<td>.00 (.01)</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morningness</td>
<td>.06 (.09)</td>
<td>.03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-work schedule fit</td>
<td>-.23 (.07)</td>
<td>-.20**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distributive schedule justice (DSJ)</td>
<td>-.07 (.08)</td>
<td>-.06</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedural schedule justice (PSJ)</td>
<td>.09 (.07)</td>
<td>.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informational schedule justice (InfSJ)</td>
<td>-.13 (.07)</td>
<td>-.13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpersonal schedule justice (IntSJ)</td>
<td>.01 (.09)</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3a</td>
<td>.18</td>
<td>.15</td>
<td>.00</td>
<td>.00 (.01)</td>
<td>.03</td>
</tr>
<tr>
<td>Night work x morningness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3b</td>
<td>.18</td>
<td>.15</td>
<td>.00</td>
<td>.00 (.01)</td>
<td>.04</td>
</tr>
<tr>
<td>Night work x non-work schedule fit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3c</td>
<td>.18</td>
<td>.15</td>
<td>.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSJ x PSJ</td>
<td>-.01 (.06)</td>
<td>-.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3d</td>
<td>.20**</td>
<td>.17</td>
<td>.02**</td>
<td>.14 (.04)</td>
<td>-.18**</td>
</tr>
<tr>
<td>DSJ x InfSJ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3e</td>
<td>.19**</td>
<td>.16</td>
<td>.02**</td>
<td>.14 (.05)</td>
<td>-.16**</td>
</tr>
<tr>
<td>DSJ x IntSJ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N = 389, *p < .05, ** p < .01.
Table 10
Regression Results for Intentions to Leave the LTC Industry

<table>
<thead>
<tr>
<th></th>
<th>R²</th>
<th>Adjusted R²</th>
<th>ΔR²</th>
<th>B (se)</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average hours per week</td>
<td>.14**</td>
<td>.13</td>
<td>.14**</td>
<td>.00(.01)</td>
<td>.02</td>
</tr>
<tr>
<td>Pay fairness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other job</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past Tenure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average hours per week</td>
<td>.29**</td>
<td>.27</td>
<td>.16**</td>
<td>.00(.01)</td>
<td>-.01</td>
</tr>
<tr>
<td>Pay fairness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other job</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past Tenure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hours of night work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morningness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-work schedule</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distributive schedule</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedural schedule</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>justice (DSJ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedural schedule</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>justice (PSJ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informational schedule</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>justice (InfSJ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpersonal schedule</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>justice (IntSJ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 3a</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Night work x</td>
<td>.30</td>
<td>.28</td>
<td>.00</td>
<td>.01(.01)</td>
<td>-.23</td>
</tr>
<tr>
<td>morningness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 3b</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Night work x</td>
<td>.30</td>
<td>.28</td>
<td>.00</td>
<td>.00(.01)</td>
<td>-.02</td>
</tr>
<tr>
<td>non-work schedule</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 3c</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSJ x PSJ</td>
<td>.30</td>
<td>.28</td>
<td>.00</td>
<td>.04(.06)</td>
<td>-.04</td>
</tr>
<tr>
<td><strong>Step 3d</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSJ x InfSJ</td>
<td>.32</td>
<td>.30</td>
<td>.02**</td>
<td>.15(.04)</td>
<td>-.17**</td>
</tr>
<tr>
<td><strong>Step 3e</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSJ x IntSJ</td>
<td>.32</td>
<td>.29</td>
<td>.02**</td>
<td>.14(.05)</td>
<td>-.14**</td>
</tr>
</tbody>
</table>

*Note. n = 389, *p < .05, ** p < .01.*
Table 11
Summary of Results

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Relationships</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Emotional Exhaustion</td>
</tr>
<tr>
<td>Night work x morningness/eveningness</td>
<td>See Figures 2 and 3</td>
<td>H1</td>
</tr>
<tr>
<td>Night work x non-work schedule fit</td>
<td>See Figures 2 and 3</td>
<td>H4</td>
</tr>
<tr>
<td>Distributive schedule justice (DSJ)</td>
<td>↑ WSDJ = ↑ engagement and ↓ emotional exhaustion and turnover intentions</td>
<td>H7</td>
</tr>
<tr>
<td>Procedural schedule justice (PSJ)</td>
<td>↑ WSPJ = ↑ engagement and ↓ emotional exhaustion and turnover intentions</td>
<td>H7</td>
</tr>
<tr>
<td>Interpersonal schedule justice (IntSJ)</td>
<td>↑ WSIntJ = ↑ engagement and ↓ emotional exhaustion and turnover intentions</td>
<td>H7</td>
</tr>
<tr>
<td>Informational schedule justice (InfSJ)</td>
<td>↑ WSIinfJ = ↑ engagement and ↓ emotional exhaustion and turnover intentions</td>
<td>H7</td>
</tr>
<tr>
<td>DSJ x PSJ</td>
<td>See Figures 4 and 5</td>
<td>H10a</td>
</tr>
<tr>
<td>DSJ x IntSJ</td>
<td>See Figures 4 and 5</td>
<td>H11a</td>
</tr>
<tr>
<td>DSJ x InfSJ</td>
<td>See Figures 4 and 5</td>
<td>H12a</td>
</tr>
</tbody>
</table>

Note: Hypotheses with one star were statistically significant in initial hypotheses testing. Hypotheses with two stars were significant in additional, follow up analyses.
Table 12
*Individual Differences among Shifts*

<table>
<thead>
<tr>
<th></th>
<th>Morning Shift (n=159)</th>
<th>Evening Shift (n=110)</th>
<th>Night Shift (n=41)</th>
<th>Standard Shift (n=64)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>72%</td>
<td>67%</td>
<td>61%</td>
<td>88%</td>
</tr>
<tr>
<td>Black</td>
<td>7%</td>
<td>11%</td>
<td>12%</td>
<td>2%</td>
</tr>
<tr>
<td>Asian</td>
<td>7%</td>
<td>7%</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>Native American</td>
<td>4%</td>
<td>6%</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>6%</td>
<td>6%</td>
<td>10%</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>89%</td>
<td>80%</td>
<td>79%</td>
<td>88%</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>40</td>
<td>32</td>
<td>41</td>
<td>39</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/living</td>
<td>62%</td>
<td>36%</td>
<td>51%</td>
<td>64%</td>
</tr>
<tr>
<td>with partner</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>13%</td>
<td>12%</td>
<td>22%</td>
<td>19%</td>
</tr>
<tr>
<td>Widowed</td>
<td>3%</td>
<td>5%</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>Single</td>
<td>21%</td>
<td>47%</td>
<td>24%</td>
<td>14%</td>
</tr>
<tr>
<td><strong>Childcare</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>50%</td>
<td>60%</td>
<td>54%</td>
<td>50%</td>
</tr>
<tr>
<td>1-2</td>
<td>36%</td>
<td>31%</td>
<td>26%</td>
<td>41%</td>
</tr>
<tr>
<td>3-6</td>
<td>14%</td>
<td>9%</td>
<td>20%</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Eldercare</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Responsibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>86%</td>
<td>87%</td>
<td>74%</td>
<td>91%</td>
</tr>
<tr>
<td>1-2</td>
<td>13%</td>
<td>11%</td>
<td>22%</td>
<td>95%</td>
</tr>
<tr>
<td>3-5</td>
<td>1%</td>
<td>2%</td>
<td>4%</td>
<td>0%</td>
</tr>
<tr>
<td>Has other job</td>
<td>16%</td>
<td>25%</td>
<td>10%</td>
<td>13%</td>
</tr>
<tr>
<td><strong>Average Hrs/week</strong></td>
<td>39 hours</td>
<td>35 hours</td>
<td>37 hours</td>
<td>40 hours</td>
</tr>
<tr>
<td>Average Tenure</td>
<td>88 months</td>
<td>52 months</td>
<td>122 months</td>
<td>60 months</td>
</tr>
</tbody>
</table>
Table 13
*Reasons for Working Current Schedule by Shift*

<table>
<thead>
<tr>
<th></th>
<th>Morning Shift (n=159)</th>
<th>Evening Shift (n=110)</th>
<th>Night Shift (n=41)</th>
<th>Standard Shift (n=64)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Preference</td>
<td>56%</td>
<td>37%</td>
<td>46%</td>
<td>34%</td>
</tr>
<tr>
<td>Childcare Responsibilities</td>
<td>14%</td>
<td>12%</td>
<td>20%</td>
<td>11%</td>
</tr>
<tr>
<td>Job Requirement</td>
<td>28%</td>
<td>27%</td>
<td>29%</td>
<td>7%</td>
</tr>
<tr>
<td>Other Job</td>
<td>10%</td>
<td>12%</td>
<td>0%</td>
<td>5%</td>
</tr>
<tr>
<td>School</td>
<td>14%</td>
<td>28%</td>
<td>15%</td>
<td>3%</td>
</tr>
<tr>
<td>Other</td>
<td>6%</td>
<td>7%</td>
<td>10%</td>
<td>9%</td>
</tr>
</tbody>
</table>
Shift work in LTC 157

Figure 1
Proposed Model

Morn[ness/ Eveningness

Non-Work Schedule Conflict

Amount of Night Work
H1-3c
H7-9c

Distributive Schedule Justice
H10a-e
H7-9c

Emotional Exhaustion
Engagement
Turnover Intentions

Procedural Schedule Justice
Interpersonal Schedule Justice
Informational Schedule Justice

H7-9c
H7-9c
H7-9c

H11a-e
Figure 2

Hypothesized Relationships Between Night Work and Morningness/Eveningness and Non-Work Schedule Conflict on Employee Engagement

---

Note: Lower morningness scores indicate morning-orientation and higher scores represent evening-orientation.
Figure 3

Hypothesized Relationships Between Night Work and Morningness/Eveningness and Non-Work Schedule Conflict on Emotional Exhaustion and Intentions to Leave

Note: Lower morningness scores indicate morning-orientation and higher scores represent evening-orientation.
Figure 4
Hypothesized Interactions Between the Four Work Schedule Justice Facets and Emotional Exhaustion and Intentions to Leave

Note: DSJ = distributive schedule justice; PSJ = procedural schedule justice; IntSJ = interpersonal schedule justice; InfSJ = informational schedule justice
Figure 5
Hypothesized Interactions Between the Four Work Schedule Justice Facets and Employee Engagement

Note: DSJ = distributive schedule justice; PSJ = procedural schedule justice; IntSJ = interpersonal schedule justice; InfSJ = informational schedule justice
Figure 6
Interaction between Non-Work Schedule Fit and Night Work on Emotional Exhaustion
Figure 7
Interaction between Non-Work Schedule Fit and Night Work on Intentions to Leave Schedule
Figure 8
*Interaction Between Distributive Schedule Justice and Interpersonal Schedule Justice on Intentions to Leave the Job*

![Graph showing the interaction between Distributive Schedule Justice and Interpersonal Schedule Justice on Intentions to Leave the Job. The graph includes two lines, one for Low Interpersonal Schedule Justice and one for High Interpersonal Schedule Justice, both at different levels of Distributive Schedule Justice. The y-axis represents Intentions to Leave the Job, ranging from 1 to 7. The x-axis represents Low and High Distributive Schedule Justice.]
Figure 9

*Interaction Between Distributive Schedule Justice and Interpersonal Schedule Justice on Intentions to Leave the Industry*

![Graph showing the interaction between distributive and interpersonal schedule justice and intentions to leave the industry.](image)
Figure 10
*Interaction Between Distributive Schedule Justice and Informational Schedule Justice on Employee Engagement*

![Graph showing interaction between distributive schedule justice and informational schedule justice on employee engagement.](image-url)
Interaction Between Distributive Schedule Justice and Informational Schedule Justice on Intentions to Leave the Job

Figure 11

Interaction Between Distributive Schedule Justice and Informational Schedule Justice on Intentions to Leave the Job

![Graph showing the interaction between distributive and informational schedule justice on intentions to leave the job.](image-url)
Figure 12
Interaction Between Distributive Schedule Justice and Informational Schedule Justice on Intentions to Leave the Industry
References


Shift work in LTC 186


Smith, C. S., Folkard, S., Schmieder, R. A., Parra, L. F., Spelten, E., Almiral, H.,
*Personality and Individual Differences, 32*, 949-968.


Shift work in LTC 195


Appendix A: Questions used in Informational Interviews

1. How long have you been working at Avamere?

2. What is your current position?

3. What is your current work schedule? Have you worked any other shifts or schedules in the past (either at Avamere or somewhere else)?

4. At your facility, what are the procedures for assigning work schedules? How does the company determine which schedule you work?

5. At your facility, how much input do employees have into their work schedules?

6. How does the schedule you work affect the kind of work you do? What is different about working one schedule versus another in terms of the work environment, people, and the work itself?

7. Are there some work schedules that are better than others? What schedules are the best? What makes them better than others? What schedules are the worst? Why? Are certain schedules better or worse for certain people?

8. Why do most people decide to work certain schedules? Why would someone want to work a certain shift?

9. Does the schedule a person work affect their performance? If so, in what ways? How about their job satisfaction?

10. Do you think some people are better at working the night shift than others? If yes, what characteristics do certain people have that make them more successful on the night shift?

11. In addition to the day versus night shift, what are some other important work schedule characteristics (e.g. length of shift, rotation)?

12. How much impact does a supervisor have on a person’s success at working a certain schedule?

13. What are some specific supervisor behaviors that influence a person’s success working a certain schedule? What things do supervisors do or fail to do that influence whether a certain schedule is good or bad? Are certain supervisors better for managing night shifts than day shifts? If so, why?
14. Can you describe an example of a “good” supervisor and a “bad supervisor”? What are some of the things that distinguish a good supervisor from a bad one?

15. What are some characteristics of a supervisor that make them more likely to perform these behaviors?

16. At your facility, do employees work with the same supervisor all the time or do they differ from day to day? i.e. are employees and supervisors on the same shift schedule as a “team”? (Do the same employees always work together on the same shift, or do teams change from one week to the next?)

17. What led you to take this job as opposed to working somewhere else? What do you feel are the main reasons people
Appendix B: Data Collection Protocol

Text to introduce project:

Avamere has agreed to participate a dissertation study for a student at Portland State University. Kristin Charles is a graduate student in the Occupational Health Psychology PhD program at PSU. She is interested in issues related to work schedules in the long-term care field. Kristin has been working on this project for over a year and your participation is vital to the success of her project.

As part of this project, you are being asked to complete a short survey, which should take about 15-20 minutes. Upon completion of this survey, you will be given the opportunity to enter a raffle for two $50.00 Fred Meyer Gift Cards. Additionally, Kristin will buy lunch for the facility with the highest completion rate.

A few things to note before we begin:

This survey is completely confidential. Please seal your survey responses in the envelope provided. These sealed envelopes will be sent directly to Kristin, no other Avamere employee will see how you responded to the question in this survey.

Although you are providing your name on the consent letter and raffle entry, your name will not be on the actual survey and no individual data will be reported to anyone at Avamere. Only combined responses will be reported back to Avamere.

Although Avamere has no plans to make changes based on the results of this study, completing this survey gives you an opportunity to provide confidential feedback to Avamere about your thoughts and feelings about your job and your work schedule.

I will now hand out a packet containing an informed consent letter, the survey, and a raffle entry form. Please take a minute to read and sign the letter before beginning the survey. The top copy of the letter is for you to keep for your records. When you have completed the survey please fill out the raffle entry form and place all three items in the envelope provided.

Additional Notes:

-Please remember this survey should be completed individually so try to avoid a lot of discussion about the survey while it is being filled out.
-My contact information is in the consent letter; all participants are welcome to contact me if they have any questions or concerns regarding the survey.
-If participants have questions or don’t understand a question they can skip it.

Thank you so much for your participation! Your support is greatly appreciated.
Appendix C: List of Measures

Morningness/Eveningness (Early/Late Preferences Scale)


Please indicate when you would like to do the following things assuming you were entirely free to choose.

1- Much Earlier
2- A little Earlier
3- About the Same
4- A little Later
5- Much Later

Compared to most people:

When would you prefer to get up?
When would you prefer to go to bed?
When would you prefer to take an important 3-hour examination?
When would you prefer to get up if your had a full day's work (8 hours) to do?
When would you prefer to get up if you had a day off and nothing to do?
When would you prefer to do some difficult mental work which needs full concentration?
When would you prefer to eat breakfast?
When would you prefer to eat your evening meal?
When would you prefer to start work (or your job) every day?
When would you prefer to have an important interview at which you needed to be at your best?
Shift work in LTC  200

Work schedule justice


Please indicate to what extent you agree or disagree with the following statements:
1-Strongly Disagree
2-Disagree
3-Not Sure
4-Agree
5-Strongly Agree

I can provide input into my work schedule
I have had influence over my work schedule
I can revise my work schedule after it has been posted
I am pleased with my work schedule
Desirable work schedules are fairly distributed among my co-workers
My work schedule is fair
The person responsible for my work schedule treats me in a polite manner
The person responsible for my work schedule treats me with dignity
The person responsible for my work schedule treats me with respect
The person responsible for my work schedule is candid in communications with me regarding my schedule
The person responsible for my schedule thoroughly explained the procedures for setting my work schedule
Explanations from the person responsible for my schedule regarding procedures for establishing my work schedule are reasonable

Non-work schedule fit


(Same response scale as work schedule justice)

1. The time of day (shift) I work is convenient for my non-work life (for example, child care, social activities, school).

2. The pattern of days I work (for example, weekends and weekdays) is convenient for my non-work life (for example, child care, social activities, school).

3. The overall flexibility of my current work schedule is convenient for my non-work life (for example, child care, social activities).
Emotional Exhaustion (SMBM)


1-Never  
2-Almost Never  
3-Rarely  
4-Sometimes  
5-Often  
6-Very Often  
7-Always

I feel I am able to be sensitive to the needs of coworkers and residents/patients  
I feel I am capable of investing emotionally in coworkers and residents/patients  
I feel I am capable of being sympathetic to co-workers and residents/patients

Employee Engagement


(Same response scale as SMBM)

At my work, I feel bursting with energy  
At my job, I feel strong and vigorous  
I am enthusiastic about my job  
My job inspires me  
When I get up in the morning, I feel like going to work  
I am proud of the work I do

Pay Fairness


Please indicate to what extent you agree or disagree with the following statements:  
1-Strongly Disagree  
2-Disagree  
3-Not Sure  
4-Agree  
5-Strongly Agree
My pay is fair compared to the pay of other people doing the same job in my unit.
My pay is fair compared to the pay of other people doing the same kind of work for other employers.
My pay is fair compared to the pay of other people doing different jobs in my unit.

**Intentions to Leave**


I will look for a job outside of this organization during the next year.
I often think about quitting my job at this organization.
If it were possible, I would like to get a new job.
I will look for a job outside of the long term care field during the next year.
I often think about leaving the long term care industry.
If it were possible, I would like to work in a field other than long term care.
I will look for an opportunity to work a different schedule during the next year.
I often think about working on a different schedule.
If it were possible, I would like to work a schedule other than the one I currently working?
Appendix D: Pilot Study Survey

Survey of Work Experiences

The survey consists of questions that ask about your experiences at the facility where you work. There are no right or wrong answers, so please respond honestly. All of your responses will remain anonymous and will not be shared with your supervisor or others in your facility. Please remember not to use your name, other employees' names, or resident/patient names at any time during this survey.

Section 1: Your personal information
What is your current job title?
- CNA
- CMA
- Environmental Aide
- Restorative Aide
- Cook
- RN
- Dietary Aide
- Housekeeper
- LPN
- Laundry Aide
- Activities
- Maintenance
- Other (please specify ____________

How long have you worked in your current job? ___Years ___Months

How long have you worked at this facility? ___Years ___Months

How long have you worked in the long-term care industry? ___Years ___Months

What is your age? ___ What is your gender? M  F

What is your ethnicity (please check one)?
- Caucasian
- African American
- Hispanic
- Asian-Pacific Islander
- Native American
- Other (please Specify __________

Is English your primary language? Y  N

What is your current marital status (please check one)?
- Married/living with partner
- Widowed
- Separated/divorced
- Single

How many people in your household under the age of 18 do you provide care for? ___

How many aging or disabled family members do you provide care for (more than 3 hours per week) outside of work? ______
Do you have more than one job?
___Yes, but this is my primary job
___Yes, this is my secondary job
___ No, this is my only job

Section 2: Your work schedule
Please answer the following questions based only on your job at Avamere

On average, what hours do you usually work?
Start time: _______ End time: _______

On average, how many hours per week do you work between 7:00 p.m. and 6:00 a.m.? ______

On average, how many hours do you work per week? _________

On average, how many hours of overtime do you work per week? _________

What is your average shift length (Please check one)?
___ 8 hours ___ 10 hours ___ 12 hours ___ Other (Please specify) _______

On average, how many days off in a row do you normally have? _________

On average how many weekends (Sat/Sun) do you work per month? _________

On average how many nights (shifts between 10:00 p.m. and 6:00 a.m.) do you work per month? _________

Do you know what schedule you will be working one month from now?
___ Yes, I know exactly what my schedule will be
___ Yes, I know my schedule but it will most likely change somewhat
___ I am unsure of what my schedule will look like one month from now

How often are you required to change your schedule on short notice? (Please circle one)
Almost Never Rarely Sometime Frequently Always

How far in advance are you normally told that your schedule is changing?
_____ weeks _____ days

Please list the reasons that you are working your current schedule as opposed to a different schedule (Please select all that apply).

___ Personal preference
___ Compatibility with schedule at other job(s)
___ Compatibility with childcare arrangements
___ Requirement of my job
___ Other (Please list below)
**Section 3: Your preferences**

Please indicate when you would like to do the following things assuming you were entirely free to choose.

<table>
<thead>
<tr>
<th>compared to most people you know, when would you prefer to get up?</th>
<th>Much Earlier</th>
<th>A little Earlier</th>
<th>About the same</th>
<th>A little later</th>
<th>Much Later</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>compared to most people you know, when would you prefer to go to bed?</th>
<th>Much Earlier</th>
<th>A little Earlier</th>
<th>About the same</th>
<th>A little later</th>
<th>Much Later</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>compared to most people you know, when would you prefer to take an important 3-hour examination?</th>
<th>Much Earlier</th>
<th>A little Earlier</th>
<th>About the same</th>
<th>A little later</th>
<th>Much Later</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>compared to most people you know, when would you prefer to get up if your had a full day's work (8 hours) to do?</th>
<th>Much Earlier</th>
<th>A little Earlier</th>
<th>About the same</th>
<th>A little later</th>
<th>Much Later</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>compared to most people you know, when would you prefer to get up if you had a day off and nothing to do?</th>
<th>Much Earlier</th>
<th>A little Earlier</th>
<th>About the same</th>
<th>A little later</th>
<th>Much Later</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>compared to most people you know, when would you prefer to do difficult mental work that needs full concentration?</th>
<th>Much Earlier</th>
<th>A little Earlier</th>
<th>About the same</th>
<th>A little later</th>
<th>Much Later</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>compared to most people you know, when would you prefer to eat breakfast?</th>
<th>Much Earlier</th>
<th>A little Earlier</th>
<th>About the same</th>
<th>A little later</th>
<th>Much Later</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>compared to most people you know, when would you prefer to eat your evening meal?</th>
<th>Much Earlier</th>
<th>A little Earlier</th>
<th>About the same</th>
<th>A little later</th>
<th>Much Later</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>compared to most people you know, when would you prefer to start work (your job) every day?</th>
<th>Much Earlier</th>
<th>A little Earlier</th>
<th>About the same</th>
<th>A little later</th>
<th>Much Later</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Shift work in LTC 206

<table>
<thead>
<tr>
<th>Compared to most people you know, when would you prefer to do hard physical work or exercise?</th>
<th>Much Earlier</th>
<th>A little Earlier</th>
<th>About the same</th>
<th>A little later</th>
<th>Much Later</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compared to most people you know, when would you prefer to have an important interview at which you needed to be at your best?</th>
<th>Much Earlier</th>
<th>A little Earlier</th>
<th>About the same</th>
<th>A little later</th>
<th>Much Later</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Continued on next page
Please indicate to what extent you agree or disagree with the following statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Not Sure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can provide input into my work schedule</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I have influence over my work schedule</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I can revise my work schedule after it has been posted</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Criteria for determining work schedules are used consistently across employees</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My work schedule is flexible enough to accommodate my non-work responsibilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I am able to trade shifts with co-workers when I have a schedule conflict</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Weekend and holiday work hours are distributed fairly across employees</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I am pleased with my work schedule</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Desirable work schedules are fairly distributed among my co-workers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My work schedule is fair</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Not Sure</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>-----------------------------------------------------------------</td>
<td>-------------------</td>
<td>----------</td>
<td>----------</td>
<td>-------</td>
<td>----------------</td>
</tr>
<tr>
<td>The person responsible for my work schedule treats me in a polite manner when setting my hours</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Overtime hours are distributed fairly across employees</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The person responsible for my work schedule considers my non-work responsibilities when making my schedule</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The person responsible for my work schedule treats me with dignity when setting up my work schedule</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The person responsible for my work schedule treats me with respect when he or she schedules my work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The person responsible for my work schedule clearly communicates the procedures used to set my work schedule</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Not Sure</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>-----------------------------------------------------------------</td>
<td>-------------------</td>
<td>----------</td>
<td>----------</td>
<td>-------</td>
<td>----------------</td>
</tr>
<tr>
<td>The person responsible for my schedule thoroughly explains the procedures used to set my work schedule</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The person responsible for my schedule provides reasonable explanations about the procedures used to set my work schedule</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I will look for a job outside of this organization during the next year</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I often think about quitting my job at this organization</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>If it were possible, I would like to get a new job</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My pay is fair compared to the pay of other people doing the same job in my department</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My pay is fair compared to the pay of other people doing the same kind of work for other employers.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My pay is fair compared to the pay of other people doing different jobs in my department</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Not Sure</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>----------</td>
<td>----------</td>
<td>-------</td>
<td>----------------</td>
</tr>
<tr>
<td>I will look for a job outside of the long-term care field during the next year.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I often think about leaving the long-term care industry.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>If it were possible, I would like to work in a field other than long-term care.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I will look for an opportunity to work a different schedule during the next year.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I often think about working a different schedule.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>If it were possible, I would like to work a schedule other than the one I am currently working.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The time of day (shift) I work is convenient for my non-work life (for example, child care, social activities, school).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The pattern of days I work (for example, weekends and weekdays) is convenient for my non-work life (for example, child care, social activities, school).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>青蛙</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td></td>
</tr>
<tr>
<td>The overall flexibility of my current work schedule is convenient for my non-work life (for example, child care, social activities).</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Not Sure</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>I would leave this job if I thought I could get a similar position with a different work schedule at another organization.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I talk up Avamere to my friends as a great employer to work for.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I find that my values and Avamere's values are very similar.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I am proud to tell others that I am part of Avamere.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>All in all, I am satisfied with my job.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>In general, I like working here.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Please indicate how often the following statements are true for you while you are **at work**. Also, please note the response scale has changed from the previous page.

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Almost</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>At my work, I feel bursting with energy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>My job inspires me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>When I get up in the morning, I feel like going to work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I am proud of the work I do</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I feel I am unable to be sensitive to the needs of coworkers and residents/patients</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I feel I am not capable of investing emotionally in coworkers and residents/patients</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I feel I am not capable of being sympathetic to co-workers and residents/patients</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>At my job, I feel strong and energetic</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I am enthusiastic about my job</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>
Appendix E: Full Study Survey

Survey of Work Experiences

The survey consists of questions that ask about your experiences at the facility where you work. There are no right or wrong answers, so please respond honestly. All of your responses will remain confidential and will not be shared with your supervisor or others in your facility. Please remember not to use your name, other employees' names, or resident/patient names at any time during this survey.

Section 1: Your personal information

What is your current job title?

- CNA
- CMA
- Environmental Aide
- Restorative Aide
- Cook
- RN
- Dietary Aide
- Housekeeper
- LPN
- Laundry Aide
- Activities
- Maintenance
- Other (please specify)

How long have you worked in your current position? _____ Years _____ Months

How long have you worked at this facility? _____ Years _____ Months

How long have you worked in the long-term care industry? _____ Years _____ Months

What is your age? _____

What is your gender? M  F

What is your ethnicity (please check one)?

- Caucasian
- African American
- Hispanic
- Asian-Pacific Islander
- Native American
- Other (please specify)

Is English your primary language? Y  N

What is your current marital status (please check one)?

- Married/living with partner
- Separated/divorced
- Widowed
- Single
How many people in your household under the age of 18 do you provide care for?____

How many aging or disabled family members do you provide care for (more than 3 hours per week) outside of work? _________
Do you have more than one job?
___ Yes, but this is my primary job  ___ Yes, this is my secondary job
___ No, this is my only job

If you have another job, how many hours per week do you work at that job?_____
Section 2: Your work schedule
Please answer the following questions based only on your job at Avamere

On average, what hours do you usually work?
Start time:_______ End time:_______

On average, how many hours of night work per week do you work (number of hours between 7:00 p.m. and 6:00 a.m.)?____

On average, how many hours do you work per week?______

On average, how many hours of overtime do you work per week?______

What is your average shift length (Please check one)?
___8 hours  ___10 hours  ___12 hours  ___Other (Please specify)_______

On average, how many days off in a row do you normally have?_______

On average how many weekend days (Sat or Sun) do you work per month?_______

On average how many nights shifts do you work per month?_______

Do you know what schedule you will be working one month from now?
___Yes, I know exactly what my schedule will be
___Yes, I know my schedule but it will most likely change somewhat
___I am unsure of what my schedule will look like one month from now

How often are you required to change your schedule on short notice? (Please circle one)
Almost Never  Rarely  Sometime  Frequently  Always

How far in advance are you normally told that your schedule is changing?
_____#weeks  _____#days

Please list the reasons that you are working your current schedule as opposed to a different schedule (Please select all that apply).
___Personal preference
___Compatibility with schedule at other job(s)
___Compatibility with childcare arrangements
___Compatibility with school schedule
___Requirement of my job
___Other (Please list below)

________________________________________  ______________________________
### Section 3: Your preferences

Please indicate when you would like to do the following things assuming you were entirely free to choose.

<table>
<thead>
<tr>
<th>Compared to most people you know, when would you prefer to get up?</th>
<th>Much Earlier</th>
<th>A little Earlier</th>
<th>About the same</th>
<th>A little later</th>
<th>Much Later</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compared to most people you know, when would you prefer to go to bed?</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compared to most people you know, when would you prefer to take an important 3-hour examination?</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compared to most people you know, when would you prefer to get up if you had a full day's work (8 hours) to do?</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compared to most people you know, when would you prefer to get up if you had a day off and nothing to do?</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compared to most people you know, when would you prefer to do difficult mental work that needs full concentration?</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compared to most people you know, when would you prefer to eat breakfast?</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compared to most people you know, when would you prefer to eat your evening meal?</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compared to most people you know, when would you prefer to start work (your job) every day?</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table: Preference for Hard Work and Important Interviews

<table>
<thead>
<tr>
<th>Compared to most people you know, when would you prefer to do hard physical work or exercise?</th>
<th>Much Earlier</th>
<th>A little Earlier</th>
<th>About the same</th>
<th>A little later</th>
<th>Much Later</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compared to most people you know, when would you prefer to have an important interview at which you needed to be at your best?</th>
<th>Much Earlier</th>
<th>A little Earlier</th>
<th>About the same</th>
<th>A little later</th>
<th>Much Later</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Continued on next page
Please indicate to what extent you agree or disagree with the following statements.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Not Sure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am able to express my views and opinions about my work schedule</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I am able to trade shifts with co-workers when I have a schedule conflict</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I can provide input into my work schedule</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I have influence over my work schedule</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I can revise my work schedule after it has been posted</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The rules used to determine work schedules are the same for all employees</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Weekend and holiday work hours are distributed fairly across employees</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The person responsible for my work schedule clearly communicates the procedures used to set my schedule</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The person responsible for my work schedule thoroughly explains the procedures used to set my schedule</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The person responsible for my work schedule provides reasonable explanations about the procedures used to set my schedule</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I have influence over which shift I work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I am pleased with my work schedule</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Desirable work schedules are fairly distributed among my co-workers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My work schedule is fair</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Not Sure</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>----------</td>
<td>----------</td>
<td>-------</td>
<td>----------------</td>
</tr>
<tr>
<td>The person responsible for my work schedule treats me in a polite manner when setting my hours</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Overtime hours are distributed fairly across employees</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The person responsible for my work schedule considers my non-work responsibilities when making my schedule</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The person responsible for my work schedule treats me with dignity when setting up my work schedule</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I can choose the shift that I work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I can adjust my schedule if something comes up outside of work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The person responsible for my work schedule treats me with respect when he or she schedules my work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I will look for a job outside of this organization during the next year</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I often think about quitting my job at this organization</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>All in all, I am satisfied with my job</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>If it were possible, I would like to get a new job</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My pay is fair compared to the pay of other people doing the same job in my department.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>In general, I like working here</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Statement</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Not Sure</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>----------</td>
<td>----------</td>
<td>-------</td>
<td>----------------</td>
</tr>
<tr>
<td>My pay is fair compared to the pay of other people doing different jobs in my department.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I will look for a job outside of the long-term care field during the next year.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I often think about leaving the long-term care industry.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>If it were possible, I would like to work in a field other than long-term care.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I will look for an opportunity to work a different schedule during the next year.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I talk up Avamere to my friends as a great employer to work for</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>If it were possible, I would like to work a schedule other than the one I am currently working.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The time of day (shift) I work is convenient for my non-work life (for example, child care, social activities, school).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The pattern of days I work (for example, weekends and weekdays) is convenient for my non-work life (for example, child care, social activities, school).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The overall flexibility of my current work schedule is convenient for my non-work life (for example, child care, social activities).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Statement</td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Not Sure</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>----------</td>
<td>----------</td>
<td>-------</td>
<td>----------------</td>
</tr>
<tr>
<td>I would leave this job if I thought I could get a similar position with a different work schedule at another organization</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I often think about working a different schedule.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I find that my values and Avamere's values are very similar</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I am proud to tell others that I am part of Avamere</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>My pay is fair compared to the pay of other people doing the same kind of work for other employers.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>In general, I like my job</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Continued on next page
Please indicate how often the following statements are true for you while you are at work. Also, please note the response scale has changed from the previous page.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Never</th>
<th>Almost Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>At my work, I feel bursting with energy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>My job inspires me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>When I get up in the morning, I feel like going to work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I am proud of the work I do</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I feel I am unable to be sensitive to the needs of coworkers and residents/patients</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I feel I am not capable of investing emotionally in coworkers and residents/patients</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I feel I am not capable of being sympathetic to coworkers and residents/patients</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>At my job, I feel strong and energetic</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>I am enthusiastic about my job</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>
Please indicate how often the following statements are true for you while you are at work. Also, please note the response scale has changed.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Moderately Disagree</th>
<th>Slightly Disagree</th>
<th>Neutral</th>
<th>Slightly Agree</th>
<th>Moderately Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avamere really cares about my well-being</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Avamere strongly considers my goals and values</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Avamere would ignore any complaint from me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Avamere considers my best interests when it makes decisions that affect me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Avamere shows very little concern for me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Help is available from Avamere when I have a problem</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Avamere cares about my opinions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>