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Work-Related Stress And Mental Health Of Child Care Center Workers

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WORK-RELATED STRESS AND MENTAL HEALTH OF CHILD CARE CENTER WORKERS

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DEDICATION

I dedicate this work to my parents, Mike and Sue Lietzow, who have given me unconditional love and support, and to my husband Jay, who has enriched my life in more ways than he will ever know. I also dedicate this work to the memory of my grandmother, Patricia Wenzel, who taught me to be a strong, independent woman and encouraged me to value higher education.

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CHAPTER 1

INTRODUCTION AND LITERATURE REVIEW

On its surface, the environment of a typical child care center appears to have a joyful, carefree atmosphere. There are brightly colored decorations adorning the walls, arts and crafts materials are available throughout the rooms, and groups of children are playing. However, the job of a child care teacher is much more demanding and stressful than many may realize.

Child care workers leave the profession at a staggering rate. Over one third of child care providers leave their jobs every year (Whitebook, 1999). This turnover rate is likely due in part to the stressful nature of child care work. Child care providers are on their feet for much of the day, and in many facilities, most of the available furniture is designed for young children (Markon & LeBeau, 1994). Child care workers are also given numerous and sometimes conflicting tasks to accomplish. These include fostering the cognitive, social, and language development of children in their care; ensuring the health and safety of themselves and children; and meeting expectations from their supervisors and the children's parents, as well as from local and state licensing and accreditation agencies. Throughout their daily routines, center workers have to deal with demands from supervisors, conflict with colleagues, and active, sometimes disruptive, young children.

In addition to dealing with these daily hassles and demands, child care professionals are typically paid low wages and often feel that their work is under-valued. To some uninformed members of the public, child care work is perceived as little more than "paid mothering" (Phillips, Lande, & Goldberg, 1990) and is thought to come naturally to most women. For child care workers, this devaluing of the profession can lead to feelings of worthlessness and incompetence that drive some to leave the field.

Given the high rate of turnover in the profession, a large body of research has explored factors related to child care worker stress (Kelly & Berthelsen, 1995; Chambliss, 1997; Baumgartner, Carson, Apavaloaie, & Tsouloupas, 2009), burnout (Goelman & Guo, 1998; Boyd & Schneider, 1997; Decker, Bailey, & Westergaard, 2002), turnover (Helburn, 1995; Deery-Schmitt & Todd, 1995; Whitebook, Howes, & Phillips, 1990; Whitebook & Bellm, 1999; Whitebook & Sakai, 2003) and intent to stay in the profession (Torquati, Raikes, & Huddleston-Casas, 2007; Manlove & Guzell, 1997). What is absent from these investigations is attention to the mental health of the child care center workers. Only a handful of studies have focused explicitly on the mental well-being of those employed in the child care field (Hamre & Pianta, 2004; Fish, Lietzow, Casey, & Brockdorff, 2005; Fish, 2008, Clarke-Stewart, Vandell, Burchinal, O'Brien, & McCartney, 2002; Lietzow, 2009).

The limited attention paid to the mental health of child care professionals, who may spend upwards of forty hours a week in direct care with young children, stands in stark contrast to the vast developmental literature on parental psychopathology. Depressed mothers are more likely to display hostile, coercive, or disengaged parenting behaviors (Lovejoy, Graczyk, O'Hare, & Neuman, 2000). Many negative effects on the children of depressed parents have been well-documented in the literature. These include peer conflict, poor emotion regulation skills, low self-esteem, attention problems, and depressed mood (Gelfand & Teti, 1990). Young children who are cared for by depressed caregivers at a child care center are also likely at risk for these negative outcomes.

The goal of this project is to bridge the gap between the research literature on the nature of child care work and mental health problems among child care center employees. The project investigated what personal characteristics and workplace factors are associated with mental

health symptoms, including depression, anxiety, and somatic complaints. The project also examined the usefulness of a newly developed measure of the child care center work environment intended to assess for factors in the workplace that could be related to depression, stress, and anxiety in child care workers.

Risk Factors in Child Care Work

There are many factors associated with child care work that could lead to stress among employees and the development of mental health symptoms. These include aspects of the child care profession, issues present in the center environment, and personal characteristics of child care workers. Many of these factors are associated with high turnover rates and negative effects on children in child care centers, including increased on-the-job stress and burnout. These factors could also generate risk for depression, anxiety, and other mental health problems, although as will be discussed in detail in another section, there has been limited research on these disorders in samples of child care workers.

Research studies on problems associated with child care work often include a measure or discussion of two major concepts, stress and burnout. Because both of these concepts have a wide range of definitions depending on the researcher and the context, it is useful to define them prior to discussing risk factors that could increase the likelihood of mental health symptoms. Stress and burnout are also discussed in more detail in a later section on negative outcomes for child care professionals.

Child care work is often defined or described as stressful by researchers (e.g., Baumgartner et al., 2009; Curbow, Spratt, Ungaretti, McDonnell, & Breckler, 2000; Kontos & Riessen, 1993) and by employees in the field. However, there are a number of different definitions and ways of studying stress, making it difficult at times to generalize findings across

studies. Curbow et al. (2000) reviewed how stress in child care research is defined. Curbow et al. noted that it is first important to distinguish the concepts of job stressors, stress, and strain from each other, as these concepts are often incorrectly used interchangeably. Citing work from Hurrell, Nelson, and Simmons (1998), Curbow et al. described stressors as job-related exposure or work conditions that put an individual at risk for psychological, social, and physiological health problems. In reviewing the child care worker job stress field, Curbow et al. stated, "The [child care worker] literature presents a broad range of potential stressors that almost defy classification" (p. 519), including both "tangible" stressors such as low pay and "intangible" risks such as being overwhelmed by too many tasks at once. The definition of job strain focuses on the negative outcomes associated with exposure to work-related stressors (Hurrell et al., 1998). Using the definition described by Lazarus (Lazarus & Folkman, 1984), Curbow et al. then defined stress as an intermediary between stressors and strain, indicating that stress occurs when environmental stressors exceed a person's resources.

Based on their development of their work stress instrument, the Child Care Worker Job Stress Inventory, Curbow et al. identified three aspects of stress for child care professionals: job demands, job control, and job resources. These authors proposed that child care workers who face a large number of demands, have low control over their work environments, and have low resources are at the highest risk for negative outcomes.

Another important concept is burnout, which has been widely studied in child care professionals (Goelman & Guo, 1998; Boyd & Schneider, 1997; Decker et al. 2002) as well as in many other helping professions such as social workers (Acker, 2010; Smith & Clark, 2011; Hamama, 2012) and nurses (Van Bogaert, Clarke, Roelant, Meulemans, & Van de Heyning, 2010; Rudman & Gustavsson, 2011). Burnout is defined as "a physical, mental, and emotional

reaction to chronic, everyday stress that results from social interaction" (Decker et al., 2002, p. 63). Child care workers who are burned out might not fulfill all of their responsibilities, be more irritable with colleagues, parents, and children, and ultimately, they may choose to leave their jobs or the child care field completely. Individuals who feel burnout also could be at an increased risk for depression and anxiety.

Characteristics of the Child Care Profession

Low compensation and benefits. According to the U.S. Bureau of Labor Statistics (2012c), the median annual salary for individuals working in the "Childcare Worker" category in 2010 was $19,300. Surveys completed regionally also indicate that child care workers are paid low wages. Gable and Halliburton (2003) surveyed child care providers employed at centers in Missouri and found that 82% earned less than $20,000 a year. In addition, health insurance and other benefits are typically unavailable to child care staff. In a survey of child care teachers, center directors, and family care providers, 55% reported having no health insurance benefits (Gratz & Claffey, 1996). In a similar survey of child care workers (Baldwin, Gaines, Wold, Williams, & Leary, 2007), a higher proportion (70%) indicated they had health insurance. However, a closer analysis showed that most of these workers had health benefits through their spouses or through Medicaid. Only 32% of the insured individuals received these benefits through their employers.

The low wages and lack of benefits earned by child care workers likely affect their commitment to stay in the profession and contribute to personal stress due to poverty. There is also an association between wages earned by child care workers and the quality of care provided to children. Teacher wages are one of the best predictors of classroom quality (Phillips, Mekos, Scarr, McCartney, & Abbott-Shim, 2000). Pay is linked to center quality in several ways. Child

care facilities that pay higher wages can be more selective in hiring new employees. Similarly, more highly qualified teachers are likely drawn to higher-paying jobs. Finally, higher wages can discourage significant burnout and high turnover among child care providers.

Low wages have also been linked to negative health outcomes for employees. In a recent longitudinal study of wages and health in the U.S., Leigh and Du (2012) compared wages from several time points to a diagnosis of hypertension in a sample of over 17,000 employees from diverse professions. Their results identified a link between low wages and hypertension. Workers who earned the lowest wages in the sample were more likely to receive a diagnosis of hypertension from their physician than individuals in the highest wage-earning group. The strongest evidence for the link was found for women and for individuals aged between 25 and 44. Given the findings based on women and age, child care employees could be especially vulnerable for these health risks.

In addition to low benefits and pay, workers in child care centers typically have little opportunity for advancement (Whitebook, 1999). Improvements in working conditions, pay increases, or promotions are usually available only by moving to another child care facility. Thus, the combination of low job rewards and high stress is associated with high rates of turnover among child care workers. Conversely, jobs that offer rewards to staff and have a supportive work environment are associated with higher job commitment (Gable, Rothrauff, Thornburg, & Mauzy, 2007).

Status of child care work. Many individuals in the child care field think that their hard work, time, and effort are under-valued in society. Although child care workers are more likely to be well-educated than individuals in other professions who earn comparable wages (Whitebook, 1999), they are often seen as being little more than babysitters. Many individuals

who are unfamiliar with the demands of child care work perceive that it is easy, and they underestimate the educational instruction that child care workers offer to young children. Shpancer et al. (2008) interviewed child care center staff about their work experiences and their thoughts about how their work is perceived. Sixty-three percent of the respondents emphasized that they work as educators and should not be perceived as simply "babysitters" of children. However, 41% of the sample felt that most individuals, including the parents of the children in their care, did not understand how much work the caregivers performed daily in preparing materials, working on lesson plans, and nurturing and supporting the children. One respondent described this very well: "Parents don't realize how much we do and know about the children in our care. We're teachers as well as friends to the children…. we are not glorified babysitters" (p. 408).

In conjunction with low pay, the fact that child care positions are often entry-level jobs contributes to the low status of the profession. Many people might assume that because there are relatively few requirements to becoming a child care worker, individuals who work at child care centers are not educated or trained. Whitebook (1999) found that poor and minority women are often disproportionately represented in the lowest entry-level positions in child care facilities. Policies instituted in the mid-1990s that required mothers who receive welfare assistance to be employed greatly increased demand for low-cost child care (Scarr, 1998). In many states, women on welfare were encouraged to become child care workers themselves, as this position afforded them the opportunity to obtain gainful employment in a field in which little training or education was required (Whitebook, 1999). However, as noted by Weisbrot (1997), this sudden influx of poorly trained workers in the child care field only served to limit the opportunity for advancement in child care work further.

Another factor contributing to the low status of the profession is the conflicting opinions over maternal employment, particularly concerning very young children. As Shpancer (2006) emphasized, outside-the-home-care of children is still a controversial social-political issue in the U.S., in spite of the vast majority of mothers who do work full-time during much of their children's lives. Negative views of mothers who place very young children in child care continue to be voiced. Some individuals have negative attitudes about placing children in non-relative placements because they feel that women are not fulfilling their roles as mothers. Scarr (1998) stated that the idealized view of mothers being the sole providers of children's care is a "cultural myth" from the 1950s. She pointed out that across cultures and throughout history, women have often relied on non-relative caregivers to assist in childrearing. However, there are those who lament the loss of supposedly simpler times when women rarely worked outside of the home and were the primary if not the sole caregivers for young children.

Etaugh, Williams, and Carlson (1996) analyzed the public perceptions of child care by examining the content of women's magazines between 1977 and 1990. In their review, these authors discussed the public attitudes toward maternal employment and child care in the latter half of the 20th century. Etaugh (1980) had previously analyzed women's magazines between 1956 and 1976 and had noticed a shift toward more positive feelings regarding mothers of young children being employed outside of the home, especially in the 1960s through the 1970s. Etaugh et al. (1996) pointed out that academic research had shown increased interest in early child care beginning in the 1970s, particularly on potential detrimental effects on the children. However, early research findings (e.g., Belsky & Steinberg, 1978; Kagan, Kearsley, & Zelazo, 1978) did not reveal any significant negative effects associated with child care placement. Despite the lack of significant findings, researchers such as Jay Belsky (1986, 1988) later questioned the apparent

lack of negative effects and focused on the potential of harm of child care placement on the development of a secure attachment between a mother and a child. Belsky has also criticized early child care in more recent publications (e.g., Belsky, 2001, Belsky et al., 2007).

Etaugh et al. hypothesized that the popular press trends would mirror this reversal in opinion, showing positive attitudes in the late 1970s and early 80s but then become progressively more negative in tone. Although the topic of maternal employment and child care decreased in several of the women's magazines in general, the results showed support for Etaugh et al.'s hypothesis. Popular press writings from the mid-1980s through the 1990s showed a trend toward more negative or mixed discussions of maternal employment and child care, echoing the more negative tone of the writings from the 1950s and early 1960s.

These results suggest that negative attitudes toward both maternal employment and child care placement have not simply diminished in a gradual progression over the past several decades. Rather, the pattern has been much more complex. Positive and negative attitudes have ebbed and flowed over time, indicating that negative or ambivalent attitudes toward child care are likely still present in some sectors of society. The conflicting attitudes that many individuals continue to hold about placing children in child care arrangements, held in some cases by the parents themselves, can affect how child care workers are viewed. Parents with ambivalent feelings about putting their child in care could behave negatively toward child care workers, perhaps out of defensiveness or guilt over placing their child with a nonfamily member.

Albanese (2007), who explored child care work in Quebec, found evidence that some parents hold negative perceptions of child care workers. This study focused on an initiative in the province to provide affordable child care in two small communities. The author interviewed both mothers and providers about their child care experiences. The mothers considered the increased

availability of child care in their communities as a positive change. However, the child care providers reported feeling undervalued and taken advantage of by some parents. One respondent recalled that a parent had commented to her, "Why do you look so tired? You're just watching kids" (p. 133). Other workers, particularly those who worked in home child care, noted that parents took advantage of them by not picking up their children on time or asking if they could stay later, even after the children had already been at child care for 10 or more hours. Albanese speculated that the negative attitudes toward child care work are related to the persistent difficulties women have in the workplace, as demonstrated by low pay and an undervaluing of female-dominated professions.

Social, legal, and economic issues. The child care field does not operate in a vacuum. There are economic, political, and social factors that influence a wide range of systems issues such as public funding, regulation, and availability of a qualified work force. These issues can have a number of direct and indirect effects on both the individual centers and the workers.

In the United States, the last several decades have seen a drastic change in the care of young children. The number of working mothers has grown significantly, leading to an increased reliance on non-parental care. Among married couples with children, both parents work in 58.5% of families (U.S. Bureau of Labor Statistics, 2012a). An additional 7% of two-parent households consist of the mother being employed only. In the population of single-parent households headed by women, 65.9% are working, although this percentage is slightly lower among women with children younger than age 6 (58.6%; U.S. Bureau of Labor Statistics, 2012a).

The increase in maternal employment has led to a remarkable expansion in the number of child care facilities. By one estimate, there were 25,000 child care facilities in 1977. This grew to 40,000 in 1987 and to more than 116,000 in 2004 (National Association for Regulatory

Administration & the National Child Care Information and Technical Assistance Center, 2005). This estimate does not include other care options, such as babysitters, nannies, or family members. In 2009, around two-thirds of children of preschool-age and younger were in center-based child care, including 60% of infants, 65% of toddlers, and 71% of preschoolers (Administration for Children and Families Office of Child Care, 2011). The rise in child care facilities has led to increased public awareness of child care, as well as more focus on child care in public policy and research.

State licensing standards are one of the key public policy issues in the child care field. All states have child care licensing regulations for child care centers, although the standards vary widely in quality and oversight (Phillips et al, 1990; Lietzow, 2009). The regulations put forth a minimum level of care that centers must meet, which means that directors have to ensure they comply with all regulations. Compliance with state licensing regulations, in some cases in addition to accreditation standards from organizations such as the National Association for the Education for Young Children (NAEYC), can increase pressure on center directors and owners. Center staff can find some requirements burdensome, such as earning annual training hours or maintaining staff ratios in the classrooms at all times.

State licensing standards can also have the unintended effect of reducing the quality of child care centers, both as an educational environment and as a workplace, because center directors do not have any incentive to increase the quality of the center beyond meeting the minimum requirements in their state (Gable & Halliburton, 2003). State standards have also been criticized because they focus on short-term effects on children, such as basic health and care practices, and ignore more long-term consequences on children's development (Stevens, 1999). Another effect of regulations is to increase the cost of center operations, which is then passed on

to the consumers. When states increase regulation of variables such as child-to-teacher ratio, the cost of operations increases, as was demonstrated by Hofferth and Chaplin (1998) in their analysis of the cost and availability of care.

There are also many economic considerations of child care. Nationally, parents spend an average of $426 a month on center-based child care (Administration for Children and Families Office of Child Care, 2011). The high costs of child care can increase the stress level of parents bringing children to centers, and the parents can in turn express this frustration toward the center employees. Furthermore, many center employees are working parents themselves, meaning that child care expense is a potential source of stress for a significant number of employees. Child care workers can also be frustrated with the contrast between the high costs of child care services and the low amount they are paid hourly.

The economic climate at the federal, state, and local levels also has an effect on child care. The recent recession has had effects on the amount of funding available. Funding for state-funded preschool programs has declined over the past several years (Sieff, 2011). A report by the National Institute for Early Education Research (NIERR) showed that state preschool funding decreased by a little over a $100 per child in 2010 from the previous year; this was a decrease of around $700 compared to 2001-2002 (NIERR, 2011). Economic factors are particularly salient in a state such as Michigan, whose economy has suffered due to a loss of manufacturing jobs, especially in the auto industry. As of May 2012, Michigan's unemployment rate was 8.5% (U.S. Bureau of Labor Statistics, 2012b).

Michigan has also had significant budget shortfalls in many of its school districts, including the metropolitan Detroit area (Dawsey, 2012). The amount of public school funding can have effects on early childhood education as well. In addition to state-funded early childhood

programs being faced with cutbacks and budget shortfalls, there is increased competition for jobs in the education sector. When schools cut their budgets, many teachers lose their jobs, which could send more highly educated elementary school teachers into the child care field. This also could contribute to high rates of turnover, as the public school teachers eventually return to elementary school jobs, particularly as the economy improves.

Physical demands and environment. Workers in child care centers are often on their feet for much of the day, are taxed by lifting infants and toddlers, and have to sit on the floor or in chairs designed for very young children. The physical strain of child care work can lead to a number of health problems in child care workers, increasing their frustration and stress with their work. Serious on-the-job injuries occur in approximately one percent of child care workers (Wortman, 2001). The most frequently reported injuries are sprains, bruises, back pain, and fractures (Bright & Calabro, 1999). In a survey of over 400 child care workers in Wisconsin, Gratz and Claffey (1996) found that approximately one-third of the sample reported regularly moving heavy furniture and equipment. Eighty-three percent of center teachers reported they often used child-sized seating, while 60% indicated that they spent much of the time sitting on the floor. Prolonged demands for heavy lifting and constant physical activity can contribute to back problems and other health complications, leading to missed work, low job satisfaction, and burnout.

Gratz, Claffey, King, and Scheuer (2002) listed a number of recommendations to improve the environment of child care centers. They proposed implementing staff training programs that emphasize proper lifting techniques and organizing materials in the classroom and kitchen areas so that reaching for heavy items is kept to a minimum. However, there is no evidence that these ergonomic recommendations have been adopted by most child care facilities.

Exposure to germs and sickness. Anyone who has regularly been around young children is well-accustomed to wiping runny noses, being coughed on, tending to small cuts, and cleaning oneself after a child has spit up after feeding. Exposure to illness is a key concern for both staff and children at child care facilities. An increased risk among child care providers and children in child care facilities to common illnesses such as respiratory or gastrointestinal infections has been well-documented (Osterholm, 1994). Due to the increased risk of infection among this population, the Centers for Disease Control and Prevention (CDC) mandates that caregivers of young children should be among the first individuals to receive annual influenza vaccinations (CDC, 2009).

Caregivers who are exposed to illness can be stressed because they have to miss work, resulting in a loss of wages. In a survey of center-based caregivers in Australia, 86% of the respondents had taken sick leave within the past year, and 75% reported missing work due to contracting infections (Slack-Smith, Read, Darby, & Stanley, 2006). Illness can be especially stressful in this population because so many workers do not have health benefits (Whitebook, 1999). Workers also can be at risk for more serious health problems, such as when pregnant workers contract cytomegalovirus (CMV) from children in their care, which can have negative effects on workers' health, as well as on their developing baby (Osterholm, 1994).

Problems with parents. The experience of dropping off a child at a child care center can be distressing for both parents and their children. Child care center workers are often faced with emotional reactions from both of these groups. Parents can make demeaning comments to the child care worker, criticize the way the child care worker does his or her job, make unrealistic demands, or chronically show up late to pick up their children from the center.

Chambliss (1997) surveyed a small group of infant child care providers about their experiences. She identified three primary sources of stress: other staff, children, and parents. Three different types of difficult parents were reported. One type of problem parent is the angry, critical parent. According to infant child care staff, these parents are frustrating to deal with because they force workers to be defensive, which lowers caregivers' confidence in their work. A second type of problem parent is the anxious and/or guilty parent. These parents caused workers difficulty because separation from their infant child was typically more painful than for other parents. In addition, these parents were sometimes less likely to follow regular routines at home, making it more difficult to keep their children on a structured schedule at the center. The third category of problem parent is the neglectful mother or father. This kind of parent sometimes shows up late to pick up his or her child at the end of the day, or forgets to bring important items with their infant. These problems can be overwhelming to center workers because they have to "pick up the slack" and spend more time with the children of problem parents than they do with the other infants.

Another common problem occurs when parents bring sick children to child care. The majority of centers have policies that do not allow children who are ill to come to child care. However, parents may not abide by these policies, particularly if it is inconvenient for them to stay home from work to care for a sick child. This problem was noted by Kelly and Berthelsen (1995), who collected journal entries from a small sample of preschool teachers in Australia. One teacher complained about "parent ignorance" and wrote in her journal, "Why do parents insist on sending children when they are obviously unwell?" (p. 354).

Baumgartner et al. (2009) also examined stressful factors in the child care work environment. The study participants, a focus group of 10 individuals chosen randomly from a

larger study of caregivers, also identified problems with parents as an issue. When asked to describe the most stressful part of the day, many of the participants singled out the initial arrival time in the morning. This time of the day is often particularly trying, as caregivers have to respond to the needs of both parents and the children, as well as dealing with the separation difficulties that both groups have. One participant also identified an especially difficult child as stressful because he took up more of her time and was disruptive to the other children. She reported the parent of this child agreed with her that the boy was showing serious behavior problems. However, the mother told the worker that she did not plan to take him for any evaluation or treatment because it was likely that "he will grow out of it" (p. 243). This anecdote illustrates the challenges of dealing with difficult children as well as having disagreements with a parent on what actions to take for a variety of child issues.

Problems with children. Young children require nearly constant supervision, typically have high activity levels, and, depending on their age, require assistance with feeding, dressing, and toileting. Child care workers are responsible for maintaining a structured schedule with several children at a time while supervising these activities. Problems can arise when one child demands individual attention, due to his or her poor adaptability to changes in routine or other emotional and behavioral problems. In describing common child problems, child care workers cite examples such as individual differences in children, varied preference for novel activities, and developmental differences like being slower to develop good eating habits or toilet training routines (Chambliss, 1997).

Problems with children are viewed as a significant source of on-the-job stress for child care providers. Although the survey was small, it is noteworthy that 27% of one set of Pennsylvania child care workers identified working with children as what they liked the *least*

about their jobs (Kontos & Stremmel, 1988). Most of those employees' complaints concerned disciplinary problems and developmental issues surrounding working with young children. Young children can differ in how easily they are soothed when upset, and they vary considerably in how regular they are in their routines for eating and taking naps. In addition, children can have conflict over preferred toys or activities, leading their child care teacher to have to settle and soothe multiple children at once. Child care work is also noisy, which can be stressful for classroom teachers. In the focus group study by Baumgartner et al. (2009), one of the most prevalent complaints was the noise level of the classroom. As one classroom teacher described it, "[The children] whine a lot for everything because they are not able to talk. So, that's kind of stressful when you are hearing that whining all the time" (p. 243).

In a sample of preschool teachers in Florida, Micklo (1991) identified several sets of perceived problems in their work, organized by category. Control and discipline of the classroom emerged as one of the most frequently described problems, along with parent relationships and issues relating to the preschool program. The control and discipline issues cited by participants included children who were overly aggressive, uncooperative, or attention-seeking. Participants also raised concerns about children's rule-breaking behaviors and the use of inappropriate language.

Organizational Issues

Setting. Child care facilities include a wide range of different settings, which vary significantly in their organizational structure, policies, and level of supervision. These include small or large home-based child care facilities, chain-based child care centers, and centers operating through schools or churches. In home-based child care facilities, sometimes also called group or family care homes, the primary caregiver operates out of his or her own house.

Although the majority of home-based providers are subject to state regulation (McGaha, Snow, & Teleki, 2001), home providers operate with a greater sense of autonomy than those who are employed in centers. For example, home care providers can decide which children to include in their care and have the freedom to set their own hours and pay. If children or their parents prove difficult, home-based caregivers can decide to stop providing care at any time they choose.

There is evidence that home-based child care providers may be at a lesser risk to develop depression than individuals who are employed at centers. Fish (2008) found that individuals employed at large, chain-based centers were significantly more likely to be diagnosed with a mood disorder than those in home-based care or at privately owned centers. Fish determined that social support was a contributing factor in these results. Those who worked in a chain-based center and felt they had less social support were most likely to be currently depressed than other participants.

Canadian sociology researcher Tom Langford has expressed concern about large, corporate child care franchises (Kreiberg, 2011), which have increased in prevalence in Canada. One of his primary concerns is that due to the corporate nature of child care chains, there is more focus on financial gain than on children's welfare (Langford, 2011). As with any other business, corporate child care chains are at risk for bankruptcy or other negative outcomes. Langford has noted that the Australian-based chain, ABC Learning Centres, went bankrupt in 2008. At the time of its bankruptcy, ABC Learning Centres had 1,200 facilities in Australia, 1,000 facilities in the U.S., and hundreds more in New Zealand and Great Britain (Kreiberg, 2011).

Compared to centers, in-home caregivers also have the benefit of fostering closer relationships with the families of children in their care. Henley and Bromer (2002) pointed out that large centers might actually discourage their staff from developing close relationships with

families. Having less frequent contact and poorer relationships with parents can increase the on-the-job tension child care workers feel while they fulfill their daily responsibilities. In addition, child care workers with little contact with parents may not be as invested in their jobs or be as highly motivated to provide the best possible care to children (Bromer & Henley, 2004). Individuals working in large centers have also been found to show less sensitivity toward children than those working at smaller centers (Gerber, Whitebook, & Weinstein, 2007).

Other studies have not shown large differences between centers and home-based care. Using cortisol testing and self-report ratings, Groeneveld, Vermeer, van IJzendoorn, and Linting (2012a) found no differences in the stress levels of home-based and center-based child care workers. In addition, among home-based employees, their perceived stress levels, but not their cortisol levels, affected their behavior toward children. Across both groups of participants, individuals showed similar levels of cortisol readings on both work and non-work mornings. However, on work days, cortisol levels remained consistent throughout the day, while the levels decreased from the morning to the afternoon on non-work days.

Relationship with supervisors. Center directors and other supervisors have a significant influence on the organizational structure and atmosphere of the day-to-day operations of child care facilities. Administrators and supervisors are responsible for setting up a work schedule, assigning responsibilities to workers, stepping in to address problems with staff, responding to complaints from parents, and hiring employees.

Mill and Romano-White (1999) observed child care workers and recorded the presence of affectionate and angry behaviors directed toward children in their care. They also asked caregivers their perceptions of their current experiences on the job. Among workers who directed the most anger toward children, the quality of the caregivers' relationship with their supervisors

was one of the strongest predictors of that anger. It is notable that a caregiver's relationship with a supervisor was a significant factor even when other quality factors were accounted for. Caregivers working in a high stress environment are more likely to display anger when they feel they are being treated unfairly by their supervisors and do not have adequate support.

Relationships with co-workers. Child care workers in a center-based facility are surrounded by teachers, aides, volunteers, and other support staff. Territorial issues, conflict over job responsibilities, personality clashes, competition for resources, and contradictory attitudes toward child care practices are all potential problems in a child care classroom. Interpersonal relationships with other employees are an important factor influencing job satisfaction in teachers and child care workers (Little, 1982). However, as Jorde-Bloom (1986) pointed out, child care settings often do not provide a good structure for fostering positive relationships among workers. When faced with time pressures and job demands, workers can take their frustration out on their colleagues, particularly if they feel that others are not carrying their share of the workload.

Problems with colleagues are one of the most common sources of stress (Chambliss, 1997). Poor morale among staff is one significant problem. This can lead to further difficulty because individuals with poor morale often act passively, providing only the required, minimum level of care. This puts a greater burden on other workers, who have to carry out complex tasks and struggle with serious problems as they arise. Child care staff also report that conflict and power struggles among staff members are a waste of time and energy for all involved (Chambliss, 1997).

In Baumgartner et al.'s (2009) qualitative study of stress factors, many of the workers indicated they often felt frustrated by lack of assistance in the classroom. One worker

complained about a particular substitute teacher who typically did not help when she was assigned to her classroom, while another worker indicated that her particular center was chronically under-staffed. In addition to placing more responsibilities on classroom teachers, aides and colleagues who fail to help also prevent these individuals from taking breaks or addressing their own needs because they do not feel they can trust their coworkers while they are out of the room.

Personal Characteristics

Gender. Approximately 97% of licensed child care providers are female (Cubed, 2002). Women are approximately twice as likely to suffer from depression in their lifetimes as men are (Kessler, 2003). At any one time, approximately 5 to 9% of women are depressed, as compared to only to 2 to 3% of men (American Psychiatric Association, 2000).

Given that the average child care worker is relatively young, pregnancy and childbirth are potentially frequent occurrences. In one survey, 25% of the reporting sample had been pregnant at least once since they began working in child care (Gratz & Claffey, 1996). Women who have given birth are at risk for a wide range of mood problems, ranging from relatively mild and transient experiences of "baby blues" to severe depression and in rare cases, even psychotic symptoms (Rosenberg, Greening, & Windell, 2003). In this population, postpartum depression is likely to be present at least at the percentage seen in the general population. According to the CDC, between 10 and 15% of mothers suffer from postpartum depression within the first year following their child's birth (Centers for Disease Control and Prevention, 2008).

The fact that the majority of child care workers are female also can contribute to negative perceptions of the child care profession. For example, in the Netherlands, early childhood teachers have been criticized for the "feminization" of the educational system. The female-

dominated education system is thought by critics to increase the educational problems in boys that have been observed in the Netherlands as well as in other industrialized countries (Timmerman & Schreuder, 2008). Female-dominated professions are also typically associated with lower pay compared to male-dominated professions (U.S. Bureau of Labor Statistics, 2011). Child care work is typically perceived as a traditional female occupation, along with other caring professions such as teaching and nursing (Cancian & Oliker, 2000).

Age. Child care work is viewed by many as a job for young women due to the physical demands of caring for children. Eighty-one percent of child care providers are 40 or younger (Cubed, 2002). Younger individuals may be at greater risk to display problems such as depression while employed in child care. In a study on mood symptoms among child care providers in the metro-Detroit area (Fish et al., 2005), older caregivers reported fewer depressive symptoms than younger workers. The older child care providers also had more years of child care experience. These authors speculated that individuals who are strongly committed to child care work are more likely to remain in the profession, whereas individuals who do not enjoy the work leave the field more quickly.

Stressful life events. Child care workers, as individuals in any profession, have many things outside of their work that could contribute to increased stress levels, such as caring for their own children, financial difficulties, or the recent loss of a loved one. In the focus group study by Baumgartner et al. (2009), participants were often preoccupied by thoughts of their family members while at work. Employees also could be interrupted by phone calls or have to leave work due to family emergencies. Deery-Schmitt and Todd (1995) included significant life events in their model of turnover in family child care workers due to the impact of external life events on stress in workers in general.

Unfortunately, most research on child care workers' workplace stress has not focused on major life events in their personal lives. In contrast, major life events have been studied in a wide range of other professions and in a number of different regions and cultures. These studies generally use a self-report measure of stressful life events that includes problems such as health problems, the death of a loved one, environmental challenges such as loss of housing, and being the victim of a violent crime. These studies vary in their definition and measure of stressful life events, with many researchers using a modified version of other scales or a new measure. These methodological weaknesses limit the generalizability of this line of research beyond the sample used in a particular study. However, it is still notable that several studies with diverse groups have found a link between occupational stress and outside of work events. In a large-scale study of school teachers in China, having a high amount of personal stressors was associated with higher occupational strain (Yang, Wang, Ge, Hu, & Chi, 2011). Among police officers, exposure to multiple negative life events has been found to be significantly associated with elevated depression scores (Hartley, Violanti, Fekedulegn, Andrew, & Burchfiel, 2007). A high level of personal stressors has also been associated with an increased risk of on-the-job accidents in a sample of workers in Brazil (Cordeiro & Dias, 2005). These results point to a relationship between workers' personal lives and their work performance and satisfaction.

Positive and Protective Factors

Several aspects of the child care profession and the work environment likely contribute to negative outcomes in child care workers, including burnout, turnover, and the symptoms of disorders such as depression. However, although these problems might be more common among child care providers than among individuals in many other professions, there remain a substantial number of child care workers who in fact report high job satisfaction in their work. In a survey

by Kontos and Stremmel (1988), the majority of child care employees reported that they enjoyed their work, even though they worked long hours and earned low wages. There are likely factors that reduce child care workers' risk of mental health problems and other negative outcomes. Possibilities include use of adaptive coping strategies, availability of close-knit social support networks, and high levels of education and training in child development, education, or related fields.

Coping Skills

Personal characteristics of child care providers have received some research attention in relation to work problems such as burnout and turnover. One coping strategy that has been studied is locus of control. Locus of control concerns to what extent individuals perceive events in their lives to be due to personal characteristics such as their talents or behaviors, versus being due to external factors such as luck, fate, or the behavior of other people (Rotter, 1990). Individuals with an internal locus of control believe that events are due to their own actions, whereas individuals with an external locus of control perceive that outside forces influence outcomes in their lives (Rotter, 1966).

A particular kind of locus of control has been found to protect child care center workers against burnout (Fuqua & Couture, 1986). Child care providers with a more internal locus of control reported feeling more competent about their work than those with an external locus of control. Child care workers who do not believe they have control over their work environments or that their work is making a significant contribution are more likely to feel burned out and to leave the field.

The relationship between burnout and feelings of low control over events is supported by McMullen and Krantz's research (1988). They administered measures of learned helplessness

and self-esteem to child care employees. Learned helplessness is a construct that reflects the thinking or learned patterns of thinking seen in individuals who consistently feel personally responsible for failures that occur, while also attributing the occurrence of positive events to luck or external circumstances (Seligman, 1974). Learned helplessness is theorized to contribute to the development of depression (Seligman, Abramson, Semmel, & von Baeyer, 1979). McMullen and Krantz determined that low self-esteem and feelings of learned helplessness are associated with burnout. They speculate that having these traits could increase the risk of burnout. Conversely, feelings of low self-esteem and low personal control may also be the result of the experience of burnout.

Unfortunately, there has been limited focus on positive coping skills in more recent research with child care professionals. One of the few studies in the past decade to explore coping skills was the focus group study by Baumgartner et al. (2009). The researchers asked child care providers how they cope with stress at work and organized their answers as problem-focused, emotion-focused, or avoidant coping strategies, based on the definitions of these skills by Carver, Scheier, and Weintraub (1989). Participants identified over 20 different coping strategies they used regularly to reduce on-the-job stress. Some of the emotion-focused strategies were prayer, meditation, and positive self-talk. Participants described relatively fewer problem-solving strategies; those identified included getting help from a mentor or colleague, classroom management techniques, and involving the children in a positive activity. The majority of the coping techniques they described were avoidant strategies, which are considered less adaptive and are less likely to be successful. Examples of their avoidant coping strategies were distracting themselves with activities such as the computer or other personal hobbies, having conversations with other staff out of earshot of the children, and indulging in snacks such as candy bars.

Social Support

Because child care teachers spend a significant proportion of their time working with young children, they can develop feelings of isolation and loneliness. Thus, both at work and in their personal relationships, social support can bolster caregivers' attitudes toward their job responsibilities and help them cope with stress. Consistent with these expectations, higher rates of perceived social support are associated with lower rates of depression among child care providers (Fish et al., 2005). Higher social support is also associated with lower stress in both child care center employees (Ghazvini & Mullis, 2002) and home-based providers (Kontos & Riessen, 1993).

Education

The education level of child care providers is frequently included in studies of the quality of child care. As expected, higher educational attainment of child care staff is correlated with higher levels of quality (Vandell, 2004; Burchinal, Cryer, Clifford, & Howes, 2002; Clarke-Stewart et al., 2002). Compared to individuals with fewer years of formal education, well-educated child care workers show more warmth and support toward children, organize materials better, engage in more age-appropriate play activities, and provide more stimulation for children's language acquisition and cognitive development. Among infant caregivers, individuals with higher levels of formal education are less likely to hold authoritarian views toward childrearing than is the case for less educated caregivers (NICHD ECCRN, 1996). The results of the National Child Care Staffing Study indicate that formal education, regardless of the field of study, is the best predictor of developmentally appropriate caregiving (Whitebook et al., 1990).

Arnett (1989a) explored the differences seen in child care workers grouped according to their amount of college courses related to child development. There were 4 levels of coursework:

a group with no college training; a group with two courses out of a four-course college program; a group who had completed the full four-course program; and finally, a group who had four-year college degrees in early childhood education. Participants were assessed using a self-reported scale of authoritarian childrearing attitudes. They were also observed and rated on several dimensions based on their interactions with children in their care, including displayed positive interactions, punitive or hostile behavior, level of permissiveness, and detachment. Individuals who had any amount of college education had less authoritarian attitudes, interacted more positively with children, and were more actively engaged with children. The group with four-year degrees showed significant differences in both attitudes and class behavior as compared to the other three groups, displaying higher rates of observed positive interactions, lower levels of disengagement, and lower amounts of punitive behavior.

Similar to Arnett (1989a), the TEACH (Teacher Education and Compensation Helps) Early Childhood Project (Cassidy, Buell, Pugh-Hoese, & Russell, 1995) focused on college coursework. However, they also observed participants before and after their coursework and utilized a pre- and post-test study in their study. Child care workers were granted scholarships to attend community college courses. After receiving the additional education, the employees improved in their overall beliefs as measured by the Teacher Beliefs Scale (Hart et al., 1990). Individuals who received additional education also showed improvement in the overall quality of their classrooms at the post-test evaluation.

Although higher levels of education are associated with more positive effects for both child care providers and children in their care, many individuals opt not to pursue further education. For some caregivers, it can be difficult to enroll in college courses due to conflicts with their work and family responsibilities given that additional education is both expensive and

time-consuming. Increased education also is unlikely to lead to significant financial gains. According to findings from Phillips, Howes, and Whitebook (1991), more educated center teachers earn just slightly more than less well-educated center workers. The cost of attending college may not be worth it in light of the lack of payoff for employees.

The Child Development Associate (CDA) is recommended by many researchers and child advocacy groups for child care center workers. Notably, the National Association for the Education for Young Children (NAEYC) includes the CDA as one of several options for fulfilling their education requirements; they require that 75% of child care teachers in a center have the CDA or an equivalent level of education and experience in order for a center to receive accreditation (NAEYC, 2012). There is evidence that obtaining the CDA increases developmentally appropriate knowledge and practice in preschool teachers (Heisner & Lederberg, 2010). It has also been positively associated with center quality (Torquati et al., 2007). Unfortunately, many professionals do not receive this education, and the CDA is not mandated by any state licensing bureau (Lietzow, 2009).

Training

Training programs can also help child care employees cope with the stress that is often present in child care work, thus decreasing the risk for depression and other disorders. Arnett (1989b) emphasized that training can be one of the most important factors in influencing quality of a child care facility. Child care providers who participate in training programs can benefit not only from the instruction of child care practices they receive, but also from the support provided to them from the trainers and other child care staff. Attending a training session shows child care providers that their work is valued and important, which can give them a renewed sense of interest in the field.

Kaplan and Conn (1984) demonstrated some benefits of implementing a training program for child care staff. This study was completed as part of a larger project that conducted training on a statewide basis, the Michigan Day Care Provider Training Project (MDCPTP; Kaplan & Smock, 1981; Smock & Kaplan, 1982). Kaplan and Conn evaluated child care workers before and after a 20-hour training program that emphasized topics such as child development and behavior management. After the training, caregivers showed noticeable improvement in their ability to facilitate the social development of children in their care. In addition, the physical condition of the classroom improved, as did the materials made available to children.

Gerber et al. (2007) also highlighted some of the benefits of training for both children and caregivers. In their study of teacher sensitivity, individuals who were trained in early childhood education (ECE) were more sensitive in caregiving. These authors also found that training served as a moderating variable for individuals who reported high levels of depression. Individuals who were depressed and had received ECE showed higher levels of sensitivity in their interactions with children than depressed teachers who had not had this training.

The effects of training on child care workers' knowledge and behavior has unfortunately not been widely studied. Even fewer studies have focused explicitly on the effects on the children themselves. However, the results of the literature thus far have shown that training has a positive effect on child care professionals' attitudes and competence. Fukkink and Lont (2007) performed a meta-analysis on research on child care training programs completed between 1980 and 2005. They focused on studies with a pre- and post-test design, and they conducted the analysis with 15 studies of caregiver behavior and 4 studies focusing on child outcomes. Their results showed that training programs have positive effects on the knowledge, attitudes, and competence of workers. Training programs were best if they followed a structured curriculum

and focused on specific topics rather than overly broad training. Although the sample of studies was small, and the results did not reach statistical significance, there were tentative findings relating training programs to positive outcomes in children.

Unfortunately, training opportunities are often limited for child care staff. Gable and Halliburton (2003) discussed several barriers for child care workers in obtaining additional training. According to their survey participants, who worked as either home care providers or in child care centers, one obstacle to training is distance. For individuals in rural areas in particular, it may not be feasible to attend training sessions. Another factor is cost. Not all child care providers are reimbursed for attending training sessions and thusly, they cannot attend due to both the cost of the session and the loss of income incurred from missing work. Walker (2002) found that family child care workers with high stress and role overload were the least likely to be interested in gaining additional training or education. For similar individuals, attending training sessions is likely seen as an additional burden, which will further drain their resources of time, money, and energy.

Negative Effects on Child Care Workers

Several avenues of research have investigated problems that child care providers face in their work. A substantial body of research has focused on annual turnover rates, burnout, and worker stress. Mental health problems are not explicitly studied in this group of studies, although it is likely that there is overlap between these problems and symptoms of mental disorders. Only a small number of studies have focused directly on mental health symptoms among child care employees, with depression being the most commonly studied disorder.

Turnover

One of the most widely studied employee issues in the child care field is the annual turnover rate. This has been a frequently studied issue since the 1980s, at which time estimates of turnover ranged from 20 to 70% (Phillips et al., 1991). More recent surveys estimate that 30% of child care workers leave their jobs every year (Whitebook, 1999). Whitebook and Bellm (1999) noted that the 30% average rate of turnover for child care workers is more than four times greater than the 7% rate of annual turnover that is found among elementary school teachers. In fact, the child care field is one of only a handful of industries that has a higher rate of turnover than fast food services (Whitebook & Sakai, 2003).

Whitebook and Sakai (2003) examined job and occupational stability in a group of both child care center teachers and directors over four years. Their sample included 149 teachers and 71 directors. After four years, 54% of the teachers had left their positions. About a fourth of the sample had left the early childhood field entirely. Whitebook and Sakai noted that according to the directors of the child care centers in the sample, the 54% rate of turnover was actually much lower than the overall rate of turnover during that time, which was about 76%. Among center directors, 37% had left their jobs. This was similar to the overall 40% rate of turnover reported by the centers. Among the centers that had changed directors, two-thirds of them had had two or more directors in the four-year period.

Turnover is associated with a number of negative effects in child care settings. One negative effect is low quality of the center. The National Child Care Staffing Study (Whitebook, Howes, & Phillips, 1990) found that centers with higher job turnover had fewer developmentally appropriate materials and activities in their classrooms. The teachers at the centers also displayed lower levels of sensitivity toward the children. In the Cost, Quality, and Child Outcomes Child

Care Centers study (Helburn, 1995), centers with annual turnover rates less than 10% showed significantly higher levels of quality in both process and structural variables. Children in programs with higher quality, which was associated with low turnover rates, also had higher early math and language skills, compared to children in low quality centers.

Deery-Schmitt and Todd (1995) outlined a theoretical framework to describe turnover in child care work. Although their model is based on research on home-based child care, many of their factors are also relevant for center-based child care facilities. Deery-Schmitt and Todd proposed that turnover is related to four inter-related factors: potential sources of stress, moderators of stress, outcomes of cognitive appraisal process, and the resulting actions of the outcomes. They based their first three factors on stress theory (Lazarus & Folkman, 1984), and their fourth factor is derived from organizational turnover theory (Horn, Caranikas-Walker, Prussia, & Griffeth, 1992).

Under potential sources of stress, the authors include work conditions such as hours worked and income, client factors such as the number and age of children and provider-parent match, and significant life events/daily hassles. They considered coping strategies (approach or avoidant) and coping resources (age, job tenure, education and training, personality factors, social support, and spouse income) as moderating factors for stress. The next step is the outcomes of the cognitive appraisal process. These include stress outcomes, such as job dissatisfaction, burnout, and role conflict/overload. Potential outcomes also include positive job attitudes such as satisfaction, professional commitment, and job commitment. There also can be withdrawal cognitions, such as thinking about quitting. The model then leads to the possible outcomes, which are changing jobs, leaving the profession, or remaining at the job. This model is

useful for understanding how stress contributes to employee turnover and for its focus on positive factors that lead employees to remain at their jobs.

Burnout

Due to the stressful nature of working with children in combination with low rewards (i.e., pay, benefits, and status), child care professionals are at an especially high risk for burnout. Goelman and Guo (1998) reviewed five clusters of factors that can contribute to burnout: Low wages and poor working conditions; demanding roles and responsibilities; poor social support and communication; personal factors such as intent to stay in the profession; and education and work experience. As noted in Goelman and Guo's review, a number of these factors are prevalent in the child care industry. Out of these factors, the personal factors of workers are the least frequently studied. Unfortunately, the results of research studies often indicate that child care workers are at increased risk for burnout but do not explain why certain individuals are at a higher risk than others (McMullen & Krantz, 1988).

As defined by Maslach (1982), there are three components of burnout: emotional exhaustion, depersonalization, and feelings of reduced personal accomplishment. One of the most commonly used instruments in the child care field as well as in a wide range of other professions is the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1986), which includes items that measure these three aspects of burnout. Emotional exhaustion occurs when child care workers have low energy and feel they are unable to support others (McMullen & Krantz, 1988). Given that individuals with burnout typically have low energy and fatigue, individuals with emotional exhaustion may also be experiencing depression (Freudenberger, 1974). The second component of burnout is depersonalization, which is marked by feelings of detachment, negative attitudes toward oneself, and cynicism directed toward one's work (McMullen & Krantz, 1988).

The final component of burnout concerns a person's sense of accomplishment in his or her work. Individuals who perceive that their work is not important, and they do not have an impact on others, feel a low sense of personal accomplishment (Maslach & Jackson, 1986).

Boyd and Schneider (1997) explored how the perceptions of the work environment are related to burnout in a sample of Canadian child care providers. These researchers used the Early Childhood Work Environment Survey (ECWES; Jorde-Bloom, 1989) to assess how workers perceive their work environments. The ECWES includes 10 dimensions: collegiality; professional growth; supervisor support; clarity; reward system; decision-making; goal consensus; task orientation; physical setting; and innovativeness description. Boyd and Schneider also used the MBI to assess employee feelings of burnout. Boyd and Schneider report that the rate of burnout in child care workers in their sample is actually lower than that of other professions. However, they expressed concerns about the generalizability of their findings because their survey response rate was 79%. Individuals who have significant feelings of burnout may choose not to participate in research studies because they are too stressed and overwhelmed by the pressures of their job to respond (Maslach & Schaufeli, 1993). Boyd and Schneider did not find large correlations between environmental factors and feelings of burnout. Age of the participant, decision-making, and consensus on goals were the only demographic or environmental variables to demonstrate a significant relationship with burnout. Out of the three subscales of burnout, depersonalization was the facet most closely associated with the workers' perceptions of the environment.

Work-Related Stress

Although the majority of research on child care worker stress uses self-report measures, including questionnaires and qualitative methods such as interviews and journal entries, recent

studies have used physiological measures of stress. De Schipper, Riksen-Walraven, Geurts, and De Weerth (2009) examined how stress among child care center workers affects their behavior. These researchers assessed stress levels by measuring the employees' cortisol levels throughout the work day. Individuals with higher cortisol levels, indicating more on-the-job stress, were observed to display lower quality care to children. Interestingly, the early morning cortisol measurement was the best predictor of quality. De Schipper et al. attributed this finding to the hectic nature of mornings at child care centers in which children are being dropped off, and planning activities for the day occur.

Cortisol testing has also been used extensively in studies of the effects of child care on children (Gunnar, Kryzer, Van Ryzin, & Phillips, 2011; Vermeer & van IJzendoorn, 2006). One study examined the interaction effects between children and child care providers using cortisol testing. Groeneveld, Vermeer, van IJzendoorn, and Linting (2012b) assessed cortisol levels twice during the day in a sample of both children and home child care providers. They also examined children's overall well-being and social fearfulness and the perceived stress levels of the caregivers. The results showed interesting interaction effects between the child care workers and the children in their groups. Caregivers who reported higher levels of stress on a questionnaire (i.e., perceived stress) were more likely to have children in their groups with lower observed well-being. In addition, children who were rated as lower in well-being tended to be cared for workers who displayed higher stress in both their own ratings and in their cortisol levels. There also was an effect noticed in more socially fearful children. As indicated by their observed well-being, fearful children were more susceptible to the stress of their caregivers than less fearful children.

Mental Health

A small number of studies have specifically focused on the mental health of child care workers in order to determine whether this population displays more symptoms than individuals in the general population. In a health care survey by Baldwin et al. (2007), participants were asked about their emotional strain. Thirty-three percent of the sample responded positively to an item that asked if they had been depressed for two weeks or more. Similarly, 64% felt they had difficulties that were overwhelming to them, and only about half of the sample felt confident in their abilities to handle personal problems. Although these findings are based only on a few questions and therefore do not indicate clinically significant diagnoses of depression or other mental health conditions, the findings suggest that a significant proportion of child care workers report difficulties similar to symptoms of depression.

Hamre and Pianta (2004) explored the prevalence of depressive symptoms in child care providers. A self-report measure of depression was administered to more than 1000 female child care providers. Nine percent of providers in the sample reported high levels of depressive symptoms. Hamre and Pianta reported that this rate is lower than both that of mothers of toddlers and of individuals in the community. However, these findings should be considered in light of the fact that the measure of depression was completed in the classrooms or homes of the providers; thus, it is possible that child care providers underreported their symptoms due to their lack of anonymity. It is also important to note that the child care providers were selected by parents who had agreed to participate in the study; this differs from studies such as Fish et al. (2005) in which individuals were recruited directly from their centers or home-based programs. Hamre and Pianta's results did reveal that individuals who reported higher levels of depressive symptoms were more likely to interact negatively with children and were more withdrawn and

less sensitive toward children in their care. These findings indicate that when depression is present for a child care provider, there likely will be negative effects on the children in her care.

Other studies have found a higher rate of depressive symptoms among child care workers. The results of geographically representative study in the metro-Detroit area conducted by Fish et al. (2005) found that 27% of the female child care providers in the sample reported clinically significant levels of depressive symptoms on two screening instruments, which is significantly higher than the rate typically found in women in the general population. This study included both center-based and home-based providers in the sample.

Other investigations have examined how depression is related to caregiver behaviors. In a study of home child care providers, Clarke-Stewart et al. (2002) determined that there is an association between depression and caregivers' ratings of children's behavior. As compared to non-depressed workers, depressed caregivers were more likely to report that children in their care were not cooperative and had behavior problems. Clarke-Stewart et al. speculated that caregivers who are depressed might view a child as difficult who would not be considered difficult by non-depressed caregivers.

De Schipper, Riksen-Walraven, and Geurts (2007) also focused on caregiver mood and behaviors. In a large-scale project conducted in the Netherlands, these investigators explored three sets of variables in relation to child care behavior. De Schipper et al. assessed caregiver behavior through observations of the caregivers in two structured play situations and during the unstructured lunch time. The results showed that age, group size, and higher physical workload were significant predictors of caregiver behavior. Older caregivers were observed to provide higher quality care. In addition, in all three observation periods, caregivers provided higher quality care if there were fewer children under the age of two in the group. Higher physical

workload predicted lower quality of care. De Shipper et al. did not find a significant association between mood and caregiver behavior; however, their measure of mood was not specifically designed to assess depressive symptoms.

Gerber et al. (2007) focused on predictors of caregiver sensitivity in relationships with children. Using observational scales, interview data, and self-report measures, they examined a wide range of personal characteristics and structural qualities of child care centers in order to determine what factors are associated with higher rates of sensitivity. They included a measure of depressive symptoms in the study in order to determine if there was a link between depression and sensitivity in child care workers, which they noted is a well-established finding in the parental depression literature (NICHD Early Child Care Research Network, 1999). Their results indicated that high rates of depression and working in large centers were both associated with poor teacher sensitivity. In addition, the observed quality of the classroom and the amount of training received by teachers were found to be moderator variables. Individuals who worked in low quality centers and who were depressed showed some of the least sensitivity in their caregiving. As with many of the other studies, this research points to the importance of center characteristics but does not directly examine how these factors may be linked to depression or other disorders.

Summary

Summary of Existing Research Literature

Since the 1980s, a significant body of research has focused on child care. Although much of this research has explored the outcomes of children placed in child care facilities, there also has been considerable attention paid to child care providers. Part of the rationale for these investigations has been the startling high turnover rates among those who work in child care. If

such a high number of workers leave their jobs every year, it is assumed that there are serious and pervasive shortcomings in the child care industry at both the systematic and organizational levels. Many research investigations (e.g., Fuqua & Couture, 1986; McMullen & Krantz, 1988; Boyd & Schneider, 1997; De Schipper et al., 2009) have sought to identify some of the environmental conditions and personal characteristics that are related to negative outcomes such as burnout and stress, which are assumed to contribute significantly to the high turnover rates among child care professionals.

Based on these research inquiries, we now are aware of many of the problems inherent in child care work that can lead to high levels of on-the-job stress. High stress often results when workers face a large number of demands, have little control over their environments, and have few resources (Curbow et al., 2000). Child care providers must complete a number of tasks throughout the day, and they can feel overwhelmed by what they have to do, particularly if their colleagues or supervisors do not support them. In addition, they are poorly compensated, and thusly, they can feel that their work is under-valued and under-appreciated in society. Child care workers also are at the mercy of a number of factors beyond their control, including policies put in place by federal, state, and local legislatures, supervision and oversight by center administrators, problems presented by parents, and the unpredictable nature of caring for young children.

Within the existing research on negative effects on child care center employees, it is disappointing that there has been so little attention paid to the rate and nature of mental health problems such as depression in this group. Other than a handful of investigations on depression (Clarke-Stewart et al., 2002; Hamre & Pianta, 2004; Fish et al., 2005; Fish, 2008), mental health issues have been significantly neglected in the child care field. This is especially evident when

examining the significant body of literature on job perceptions, stress, burnout, and turnover among child care workers. To our knowledge, no research project to date has focused on both mental health issues and perceptions of the working conditions in a sample of child care center employees.

Of the available research, investigations on burnout seem most closely related to the presence of psychopathology in samples of child care professionals. As identified by Maslach (1982) and others, emotional exhaustion is considered to be a significant factor in burnout. The problems associated with emotional exhaustion, such as fatigue, low energy, and apathy, could in fact be symptoms of Major Depression or other mental health problems. Because symptoms of psychological disorders have not been explicitly included in investigations of personal and organizational characteristics in the child care field, it is difficult to know if the same types of factors that contribute to burnout also will lead to high rates of psychopathology among child care workers. However, given the number of risk factors present in the child care field, such as low pay, low status, and low job resources, it is reasonable to expect that child care workers are in fact at a greater risk than individuals in the general population to display symptoms of mental illness.

There are several reasons that focusing on the mental health of child care employees is important. Clearly, one of the primary goals of child care facilities is to ensure the safety and well-being of children who are cared for on a daily basis. Research on depression among parents indicates that children who are cared for by a depressed parent are at risk to develop both internalizing and externalizing behavior problems (Gelfand & Teti, 1990). Although little research is available on the effects on children who are cared for by a depressed child care provider or teacher, it is reasonable to assume that analogous negative outcomes are likely if

children are regularly cared for by child care workers suffering from mental illness. Identifying the factors that contribute to psychopathology in child care professionals can lead to recommendations on how to improve the child care center environment for both children and child care staff.

There are also financial benefits to reducing the risk of depression and other mental health problems among employees. Unipolar depression is projected to be one of the leading causes of disability in the U.S. and other developed nations over the next several decades (Mather & Lancar, 2006). Mental disorders among employees can lead to many potential problems in the workplace, which can prove costly to business owners. In a case study of a large insurance company, the average cost of worker depression to employers was approximately $1600 a year in combined direct and indirect costs (Johnston, Westerfield, Momin, Phillippi, & Naidoo, 2009). In that study, emotional disorders, including depression and anxiety, were the fifth costliest of various illnesses and disabilities among employees. Depression is also associated with a number of adverse outcomes in the workplace, including poor job performance and missed work, as well as a high rate of annual turnover (Lerner et al., 2004).

Identifying the factors of the child care center environment that increase employees' risk of depression and other disorders also will lead to the development of intervention strategies. With the lack of attention paid to mental health issues among child care workers, there is a disconnect between child care research and the vast available literature on the prevention and treatment of Major Depression and other disorders in both clinical populations and in other occupations. By recognizing the personal and organizational factors that are associated with the development of mental health problems, we can best work at preventing these problems and addressing symptoms when they occur.

The Current Study

The goal of this project was to determine what factors present in child care work, if any, are associated with symptoms of mental health difficulties. Individuals employed at child care centers were asked about various aspects of their work, including problems they have with children, tension with colleagues, support from supervisors and center administrators, and difficulties with parents. A measure was designed specifically for use for this study to explore these different aspects of the work environment. The results of this project could assist in establishing the utility of this measure for use with child care workers in other studies. The caregivers also completed a depression screening instrument and a clinical symptom inventory to determine the extent to which they had mental health problems. They also completed a life stress inventory. This measure allowed for examination of the effects of personal stress on mental health symptoms, as well as an analysis of the different effects of personal and work stressors among child care providers.

To determine whether there were positive, protective factors associated with fewer symptoms of psychopathology in child care workers, workers' perceived social support was assessed. Other demographic characteristics of each participant were also collected, including age, educational background, and training. In addition, center directors or supervisors from each participating center provided information about the structural characteristics of the center, including the number of employees working at the center and annual turnover rates, thus permitting exploration of center effects on caregivers.

This study addresses the following questions:

(1) What percent of individuals employed at child care centers are high in symptoms of mental disorders, including depression, anxiety, and somatic complaints?

(2) What aspects of the child care center environment are perceived as most stressful for child care workers?

(3) What aspects of the work environment, including the workers' perceptions of their job and the structural characteristics of the center, are associated with higher levels of depression, anxiety, and somatic complaints?

(4) What positive factors, including work and personal characteristics, are associated with lower rates of mental health symptoms?

(5) What center features are associated with employee-reported work stress, mental health symptoms, and annual turnover rates?

CHAPTER 2

METHOD

Participants

Employee participants. The goal of study recruitment was to have 100 child care center employees from a diverse range of centers. For information on how the sample size was determined, please refer to Appendix A (p. 150). The final sample was comprised of 101 participants. One additional female participant was not included in the final sample because she did not complete all of the measures. Participants were employees of child care centers located in the metropolitan Detroit and southeastern Michigan area. At the time of the site visit, all available center employees had the option to participate in the study. All participants were 18 or older. In addition, participants were limited to those working at least 20 hours per week at the center in the direct care of children. Potential participants included head or lead teachers, group leaders, assistant teachers, and aides. Volunteers and staff members who did not interact with children (e.g., janitorial or administrative support staff) were excluded from participation.

Table 1 (p. 116) summarizes the demographic characteristics of the child care center employees. As expected based on the demographics of the profession (Cubed, 2002), the majority of the participants were female (98%; n = 99). Employee participants ranged in age from 18 to 63, with a mean age of 35.5. The majority of participants self-identified as White or Caucasian (74.3%). Several other ethnic groups were also represented. Most participants reported being either married (52.5%) or living together with a significant other (12.9%). Over half of the participants were also parents (61.4%) and reported having between 1 and 5 children each.

Table 2 (p. 117) summarizes the education and training backgrounds of the participants. An associate's degree (34.7%) or a bachelor's degree (22.8%) were the most common levels of education. However, 22 individuals (21.8%) had college coursework but had not earned a degree, 12 (11.9%) had only a high diploma or its equivalent, and 3 employees (3%) did not complete high school. Of those with an associate's degree or higher, 20 participants (19.8%) had earned a Child Development Associate (CDA). Fourteen individuals reported that they were certified teachers, with 9 of those employees reporting having the Early Childhood Endorsement.

Participants were also asked to report on their on-the-job training at their current place of employment. Responses to the questions about training requirements ranged considerably. A large proportion of individuals (39.6%) indicated they did not know how many training hours were required; the majority of these participants thusly did not report any training hours, although a few recorded an estimated number. About one-fourth of the sample reported that no set number of training hours was required at hire. The reported training hours ranged from 0 to 120, with a mean of 15.9 hours (based on the responses of only 64 employees).

Employees were also given a list of training topics and were asked to indicate whether each topic was included in their training. Many participants who did not know the exact number of hours or indicated that no training had been required reported that at least some of the topics were covered. The majority of participants reported that center policies (87.1%) and universal precautions (83.2%) were addressed during training; other topics such as mandatory abuse reporting (72.3%) and child development (62.4%) were also endorsed by the participants.

Table 3 (p. 118) includes information on the age groups that participants worked with at their centers. Participants were allowed to choose as many of the different age groups as they wanted. Some employees worked with mixed age groups, and others were not always assigned to

the same group or classroom every day. In contrast, at other centers, employees worked exclusively with one age group. The most common age group was young toddlers, which was selected by almost half of the sample (n = 48; 47.5%). The least common group was children over five; only 13 employees (12.9%) reported they regularly worked with children that age.

Participants were also asked to estimate the average number of children they cared for at one time and the average child-to-staff ratio (see Table 3, p. 118). Participants reported they were assigned between 3 and 26 children to care for at a time, often with at least one assistant. Reported child-to-staff ratios varied from 2:1 to 18:1. The most common responses were 4:1 (n = 41; 40.6%), 8:1 (n = 19; 18.8%), and 10:1 (n = 10; 9.9%). These responses only reflect the employees' perceptions of group sizes and ratios, which could be inconsistent with the center's actual ratios.

Child Care Centers. Employees were recruited from 14 child care centers. Table 4 (p. 119) summarizes each of the centers in the sample. Four of the centers were faith-based and/or affiliated with a church. Only one center was a chain-based program. Attempts were made to recruit several other chain-based centers, but the directors declined to participate. Some of these directors cited corporate policies regarding visitors as a factor in their decision not to participate. The remaining centers (n = 9) were privately owned and independently operated. Two of the centers in the sample were accredited by the NAEYC; three others were accredited by a different local or national organization.

Centers varied considerably in the maximum number of children they were licensed for, ranging from 42 to 285. Table 4 is organized in ascending order according to each center's capacity. As is evident from examining this table, all centers allowed children from several different age groups, ranging from infants up to school-aged children. All centers accepted

toddlers and preschool-aged children, but infants and children over 5 were less frequently accepted at centers. Depending on their size, centers differed in their number of classrooms, ranging from 2 to 11, and their number of employees, ranging from 6 to 35. Table 4 also summarizes how many employees participated from each center. Between 4 and 12 individuals opted to participate from each center.[1]

Directors also provided information about the annual turnover rate of their facilities. Between 0 and 6 employees left each of the centers. Only two programs did not have any employees leave within the previous year. Directors also were asked to indicate the reasons that employees left the center, if known. The most frequently selected reason was "fired/let go due to performance reasons," which was endorsed by half of the respondents. Other reasons included "returned to college" (n = 6), "left the child care field" (n = 4), "moved out of the area" (n = 4), "family/personal reasons" (n = 2), and "left to work at a different center" (n = 1).

As is evident in Table 4, larger centers generally had a higher number of employees leave annually as compared to smaller centers. This stands to reason given that larger centers have a larger pool of employees. For this reason, it is useful to examine the turnover rate by percentage, which is also presented in Table 4. The number of employees who left was divided by the total number of employees at the center. The highest number of employees who left their jobs was 6, found at two centers. However, one of those centers had 31 employees, and the other had 17, meaning the turnover rates were 19% and 35%, respectively. The highest turnover rate of any facility was a program with only 6 employees; the director reported that 3 employees had left within the past year, indicating a turnover rate of 50%.

[1] The total number of participants from each center includes one individual who was dropped from the analyses due to incomplete data.

Center Directors. Table 5 (p. 120) summarizes the demographic characteristics of the center director participants. All of the directors were female. They ranged in age from 26 to 66, with an average age of 44. Eleven identified as White or Caucasian, two identified as Black or African American, and one identified as Arab American. Directors varied in their educational attainment. Although most individuals had a bachelor's degree or higher (n = 10), one person reported only having completed college coursework, and three individuals indicated they had associate's degrees. Only two directors reported having earned a CDA. Directors also ranged in child care work experience. One director indicated that she had no previous child care work experience. The other responses ranged from 4 to 44 years of experience. The average lifetime experience for directors was 18.41 years. The length of the current position ranged from 4 months to 31 years, with an average of 11.7 years.

Instruments

Child Care Center Employee Participant Information Questionnaire. This instrument is a revision of a questionnaire used previously by this research group (Fish et al., 2005; Fish, 2008). Three sections (see Appendix B, p. 152) cover personal demographic characteristics, career and work experience, and health. In the first section, participants were asked about their personal characteristics, including age, gender, ethnic background, and relationship status. The second section featured child care work experience, education, training hours, and various aspects of the employees' current place of employment. The third section asked about the health of employees. Questions about on-the-job injuries and health problems that interfered with job responsibilities were asked, covering both physical and mental health.

Center Information Questionnaire. A center director or administrator from each participating center completed a brief questionnaire (see Appendix B) regarding the structural

characteristics and organization of her center. The measure also included items about turnover at the center. Directors were asked to estimate how many employees left the center within the past year and to provide their reasons for leaving, if known. Each center administrator was also asked to respond to demographic questions that included gender, ethnicity, age, education, and experience in child care work.

Child Care Worker Stress Questionnaire. This brief measure (see Appendix B) was developed for the purpose of this project. This questionnaire asked child care center participants to list up to five stressful events that typically occur at their work. They were then asked to indicate the most stressful event of this set by circling it. They also were asked to rate on a scale from 0 to 100 how stressful they considered this event, as well as how often it typically occurred (ranging from once or twice a year to daily). The purpose of this measure was to obtain open-ended responses from participants regarding stressful events at their jobs. This was requested to assist in developing or refining items for questionnaires to be used for future studies. It also allowed participants the opportunity to provide their own personal experiences in addition to responding to the pre-determined items listed on the CCCWES and other measures.

Six participants did not complete this measure, and several other individuals gave fewer than 5 responses. One person wrote 6 responses. The total number of responses was 407. The responses were coded by the primary investigator and six undergraduate research assistants. The responses were coded based on a list of categories that were developed following a review of the topics described in participants' responses. Appendix C (p. 168) includes each category's name and a description of the category. Each response was coded independently by two individuals. Inter-rater reliability was calculated using Cohen's *kappa* coefficient (Cohen, 1968). Cohen's *kappa* estimates the agreement between two raters after correcting for agreement that would be

expected by chance (Stemler, 2004). The *kappa* of the coding of the open-ended responses was 0.79. This level of agreement is above 0.61, which is widely considered the threshold for "substantial" agreement (Landis & Koch, 1977), indicating that the responses were coded reliably. When there was a disagreement, the final coding assignment was made by discussing the item with the entire group until a consensus was reached. A description and table summary of the responses to this measure are presented in Appendix D (p. 170).

Child Care Center Work Environment Scale (CCCWES). This measure was also developed for the purpose of this study (for a more detailed description of the development of this instrument, see Appendix E, p. 172). The CCCWES consists of 50 items that were designed to cover a range of child care worker experiences (see Appendix B). The CCCWES was created to assess aspects of the center environment that were expected to be associated with employee-reported mental health symptoms. Many questions focus on negative aspects of the environment and job, such as behavioral problems with children, disagreements with co-workers, and having too much to do at one time. Other items are more positive in intent, assessing child care providers' attitudes toward their choice of profession, feeling valued in the workplace, and commitment to stay in the profession. Response options range from 1 (strongly disagree) to 5 (strongly agree). The readability of the items is estimated to be at the fourth grade level using the Flesch-Kincaid Readability Index (Kincaid, Fishburne, Rodgers, & Chisson, 1975).

Because this measure was developed for the purpose of this study, there was no reliability and validity data available prior to its use. The coefficient alpha of all 50 items of the CCCWES in the present study was 0.77. Prior to administering the measure, the items were divided into a proposed division of seven subscales (see Appendix F, p. 186). The results of a principal components analysis revealed four subscales (Appendix E includes more information about the

factor structure and analysis of items). These four scales are based on 35 items; 11 items were eliminated due to low factor loadings with any of the first four components, and 4 items were eliminated due to redundancy.

Appendix G (p. 188) lists each factor, the items, and each item's factor loading. Appendix G also includes a list of the 15 omitted items. The first factor is named "Center Culture." This subscale consists of 11 items that focus on the overall atmosphere of the center, including relationships with co-workers, relationships with supervisors, and agreement with center policies. High scores on this subscale indicate dissatisfaction with the center culture, as characterized by significant mistrust among colleagues and supervisors, poor staff morale, and the perception that employees are not treated fairly. Scores can range between 11 and 55 on this scale. The alpha of this subscale was 0.87.

The second group also consists of 11 items. This subscale is named "Work Strain." The items on this scale include problems with children and parents, feeling overwhelmed by the amount of work to be done, and other frustrating events. High scores on this scale indicate an elevated level of work strain. Conversely, individuals with low scores on this scale do not report a significant amount of common problems and do not perceive these events as overwhelming. The alpha of the Work Strain scale was 0.84.

The third factor is called "Pride and Professionalism" and includes 8 items. High scores on this scale indicate positive feelings about one's work and a strong identification with being a child care professional. Items focus on enjoyment of work, feeling valued by supervisors and parents, and finding the work fulfilling. Low scores on this scale indicate a lack of pride in child care work and a feeling of being devalued by others. Scores can range from 8 to 40 on this scale. The alpha of this subscale was 0.78.

The last factor is named "Burnout." There are 5 items on this subscale. This group of items includes two distinct types of items. The first is a feeling of stress and work overload. In contrast to the items on the Work Strain scale, which include frequently occurring events, these items are more global in nature (e.g., "This is the hardest job I have ever had."). The other group of items focuses on intent to remain in the profession. Individuals with high scores on this scale feel overwhelmed by their jobs and do not want to remain at their current job or in the child care field. In contrast, low scores on this scale suggest that an individual is able to manage the responsibilities of the job and is committed to the profession. Scores range between 5 and 25. The alpha of the Burnout subscale was 0.74.

Life Stressors Form (Abbreviated). A major life events scale was included in the present study in order to assess for the effect of outside events on employees' depression and other symptoms. The Life Stressors Form (Module 45) was developed by The Measurement Group for use in their program evaluation of the Health Resources and Services Administration (HRSA) Special Projects of National Significance (SPNS) Program Innovative Models of HIV/AIDS Care study (The Measurement Group, LLC, 1997). The original form had 62 items, with respondents saying "yes" or "no" to indicate whether they had experienced each individual major life event in the past six months. They also marked "low," "mild," or "high" to indicate the severity of the event. The Life Stressors Form includes a wide range of events, including divorce, housing difficulties, and suffering from an illness, and was deemed appropriate for use in the current study. However, for the purpose of this study, it was necessary to eliminate a number of items from this measure. Many of these excluded items related to HIV status or AIDS symptoms, which are not applicable for this study. In addition, some items were removed due to their

sensitivity (e.g., Had an abortion, was raped, was arrested). Finally, a few items regarding work stress were removed to eliminate overlap with the other instruments used in the study.

The abbreviated version that was used in this study has 36 items (Appendix B). Participants were asked whether each event had occurred in their lives within the past six months; they were not asked to make a severity rating. An overall count of the number of stressors was calculated for each participant, serving as the score for the analyses. These scores' possible range is 0 to 36. In the current sample, the internal consistency of the abbreviated form was 0.72.

Social Provisions Scale (SPS). The SPS (Cutrona & Russell, 1987) is a 24-item questionnaire that assesses individuals' perceived social support (see Appendix B). The measure focuses on several aspects of social support. The scales and items were originally based on the six broad social provisions described by Weiss (1974) and were confirmed through factor analysis (Russell & Cutrona, 1984). Approximately half of the items address the presence of support, while the remaining half indicates the absence of support. Response options are provided on a four-point scale, ranging from 1 (strongly disagree) to 4 (strongly agree). The measure is designed to be completed in five minutes. The scale consists of six subscales (Guidance, Reliable Alliance, Reassurance of Worth, Attachment, Social Integration, and Opportunity for Nurturance) and a Global Social Support scale. In this study, the Global Social Support scale was calculated and used as an indicator of a participant's overall level of perceived social support. This composite score is based on a sum of all of the items, and scores range from 24 to 96.

The SPS is a widely used measure of perceived social support and has established reliability and validity. In a large study completed with school teachers, internal consistency

estimates were all above 0.60 (Russell, Altmaier, & Van Velzen, 1984). The internal consistency coefficient in the current study was 0.88. Test-retest reliability estimates range from 0.37 to 0.66 (Cutrona, Russell, & Rose, 1984). SPS scores have demonstrated predictive validity. In a sample of school teachers, scores were associated with loneliness, depression, and health status (Russell et al., 1984). In addition, low perceived social support has been associated with higher rates of postpartum depression in first-time mothers (Cutrona, 1984).

Center for Epidemiologic Studies Depression Scale (CES-D). The CES-D (Radloff, 1977) is a short screening instrument designed to assess depressive symptoms (see Appendix B). It contains 20 statements that describe different aspects of depressed mood, including appetite disturbance, feelings of hopelessness, and problems sleeping. Individuals are asked to report on symptoms they have experienced within the past week. Participants respond to the items using a four-point Likert scale, which ranges from "Rarely or none of the time" to "Most or all of the time." Individuals scoring above a cutoff of 16 are considered to have a high probability of having some form of depression (Eaton, Muntaner, Smith, Tien, & Ybarra, 2004). This cutoff score is recommended by the author of the measure (Radloff, 1977) and is commonly used in describing its scores.

The CES-D is a frequently used screening tool in research on community samples and in a wide range of age groups, including women and outpatients (Knight, Williams, McGee, & Olaman, 1997; Roberts & Vernon, 1983). Test-retest reliability for time periods varying from two weeks to one year range from 0.40 to 0.70 (Devins et al., 1988). Internal consistency estimates range from 0.85 in a community sample to 0.90 in a clinical sample (Radloff, 1977). With the current sample, the alpha was 0.90.

Brief Symptom Inventory (BSI). The BSI (Derogatis & Melisaratos, 1983) is a 53-item measure that assesses symptoms of several disorders (see Appendix B). The BSI was developed as a shortened form of the Symptom Checklist-90 (SCL-90). Questions concern various emotional and somatic complaints. Individuals are asked to indicate the extent to which they have experienced symptoms within the past two weeks. Responses are given using a five-point scale, which ranges from "Not at all" to "Extremely." The BSI is designed to be completed in approximately ten minutes.

The BSI produces three global indices of distress: the Global Severity Index (GSI), the Positive Symptom Distress Index (PSDI), and the Positive Symptom Total (PST). The GSI is considered the best estimate of overall distress (Derogatis & Melisaratos, 1983). This score is calculated by summing the participants' responses on all items and thusly provides information on both the number and frequency of symptoms reported. The BSI also includes nine subscales that assess various clusters of symptoms. The nine subscales are Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism.

In the current study, the GSI was used to indicate participants' overall level of symptom severity. In addition, the Depression, Anxiety, and Somatization subscales were selected because these sets of symptoms are of primary interest to the study's hypotheses. The Depression subscale is comprised of six items that assesses dysphoric mood, lack of interest in everyday activities, loss of energy, hopelessness, and suicidal ideation. The Anxiety subscale also has six items. In this subscale, physiological symptoms of anxiety (e.g., restlessness) and feelings of fearfulness and panic are assessed. The Somatization subscale has seven items that focus on somatic complaints such as dizziness, cold or hot spells, numbness, and stomach pains or nausea.

Raw scores from the BSI are converted into T-scores, which have a mean of 50. The authors of the measure recommend that T-scores of 63 or higher be considered a "case" on the BSI (Derogatis & Melisaratos, 1983). The BSI manual (Derogatis, 1993) includes normative data for clinical and nonclinical adolescent and adult populations. The norms are gender-based. The most appropriate comparison group for the current study is non-patient adult females because the majority of the sample is female[2]. For this group, a T-score of 60 corresponds to the 84th percentile, a T-score of 70 falls at the 93rd percentile, and a T-score of 80 is at the 98th percentile.

The BSI has demonstrated sufficient reliability and validity to be used in community samples. Previous research has indicated internal consistency coefficients ranging from 0.75 to 0.89 (Boulet & Boss, 1991). The two-week test-retest reliability of the GSI has been shown to be 0.90 (Derogatis & Melisaratos, 1983). The internal consistency coefficients for the subscales range from 0.68 for the Somatization scale to 0.91 for the Phobic Anxiety scale. In the current study, the internal consistency of the GSI was 0.96. The internal consistency coefficients for the three subscales used in the study were as follows: Somatization ($\alpha = 0.78$), Depression ($\alpha = 0.82$), and Anxiety ($\alpha = 0.83$).

Procedure

All procedures, measures, and forms were approved by the Wayne State University Human Investigations Committee (see Appendix H for the study's approval, p. 190). Graduate and undergraduate students collected data. All research assistants were required to complete ethical training in research prior to collecting data and were given instruction on the nature of child care work and early childhood education. Prior to completing any child care center visits, all research assistants had a negative TB test and went through clearance by the Michigan

[2] For the two male participants in the sample, the BSI non-patient adult male norms were used to convert their raw scores to T-scores.

Department of Human Services, indicating that they were not found on the state child abuse registry.

Participants were recruited from child care centers in the metro Detroit area. According to the Michigan licensing statutes (State of Michigan Department of Human Services, Bureau of Children and Adult Licensing, 2008), a child care center is defined as

> A facility other than a private residence, which receives one or more preschool or school-age children for care for periods of less than 24 hours a day, and at which the parents or guardians are not immediately available to the children. It includes a facility that provides care for not less than two consecutive weeks, regardless of the number of hours of care per day. The facility is generally described as a child care center, day care center, day nursery, nursery school, parent cooperative preschool, prekindergarten, play group, or drop-in center. (p. 1)

The Michigan state database of licensed child care centers, http://www.dleg.state.mi.us/brs_cdc/sr_lfl.asp, was used to locate centers in the area. This website contains up-to-date information on all child care facilities, including child care centers, family care homes (care for 6 or fewer children), and group child care homes (care for 12 or fewer children), in the state of Michigan. All facilities in the database are licensed, and licensing information for each facility is available on the site for review. Only child care centers were selected from the database. Family and group home facilities were not included in the study because they do not have the same organizational structure as centers (e.g., supervision, multiple colleagues, etc.) and thus could not be used to analyze organizational factors, which are of key interest for the present study. The website permits searching by center type and by county. Searches were conducted only in four counties that are part of the Detroit metropolitan area: Wayne, Oakland, Macomb, and

Washtenaw. Centers were selected for recruitment in order to represent a wide range of different communities, as well as different sizes and types (e.g., chain-based or church-affiliated). Centers that were school-based, included school-age children only (e.g., latchkey or tutoring programs), or were only half-day programs, were excluded from the study. However, centers that offered drop-in or partial day services in addition to full day programs, or that had latchkey or other school-aged programs in addition to programs for younger children, were not excluded.

After being selected from the database, each potential center was sent a letter that described the purpose of study and asked child care center directors for their interest in participation (see Appendix I, p. 191). The letter included a phone number and an e-mail address that center directors could use to contact the primary investigator if they were interested in participating or if they had questions about the study. Approximately one to two weeks after the letter was sent, the primary investigator or a research assistant contacted the center director to ask whether he or she was willing to have his or her center included in the study, assuming that the center director had not previously contacted the primary investigator to express interest. If the center director agreed to participate, the researcher set up a time to come to the center to complete the study. Batches of letters (8 to 10 at a time) were sent out until the target number of participants was reached.

Center directors were informed via the recruitment letter and over the phone that they would be asked to make the study available to their employees. However, it was emphasized that they could not require any employee to participate. Some center directors chose to advertise the study by email, a flyer, or a sign-up sheet prior to the site visit. Center directors were also told they would not have any access to the responses of their employees at any time.

Two centers were recruited in a different way. A local child care organization, comprised of the directors of several centers, invited the primary investigator to hand out an information sheet and talk briefly about the project at the group's monthly meeting. All of these centers were listed in the state database and met the criteria detailed above. Directors from these centers contacted the primary investigator by phone or email if they were interested in participating and then made an appointment for the study to be completed at their location.

At the time of a site visit, the center director or another available center administrator was given a consent form (see Center Director consent form, Appendix J, p. 193), which they reviewed and signed at the beginning of the visit. They were then given the Center Information Questionnaire. This measure took about five minutes to complete. To thank the directors for their participation, they were given a $10 gift card to either Target or Wal-Mart. Although at some facilities, center directors also led a classroom or filled in as a substitute teacher when needed, no center director was allowed to participate in the study as both a director and as a child care employee in order to maintain independence of these responses.

Child care center employees completed the study at their place of work. They also were given the option to complete the study at a lab located on the campus of Wayne State University, although no participants actually took this option. All visits were completed between 11:00 am and 4:00 pm. This was done so participants could complete the study either during a lunch break or during the children's naptime. This time of day also typically allowed for the largest number of employees to be present as potential participants. At each center, every effort was made to locate a quiet, private area for the completion of the study (e.g., a lunchroom, conference room, empty classroom, office, etc.). In some centers, this was not possible, and the participants completed the questionnaires in their classrooms during the children's naptime. Depending on

the schedule and the staffing of the center, some participants completed their measures at the same time as other employees, which was generally during their lunch or other break. In other facilities, employees' break periods were staggered, and the researcher distributed the questionnaires when employees became available. Site visits typically lasted 1-2 hours, but ranged from 45 minutes to 3.5 hours. Visits were generally completed by a single researcher, but at some sites, two researchers were present.

After agreeing to hear about the study, child care workers were briefly told the purpose of the study as they read information printed on a consent form. If they agreed to be in the study, they signed the consent form (see Appendix J, p. 193). They were then given a packet of measures to complete. These were the Child Care Center Employee Participant Information Questionnaire, Child Care Worker Stress Questionnaire, Child Care Center Work Environment Scale (CCCWES), the SPS, the Life Stressors Form (Abbreviated), the CES-D, and the BSI. Other than the demographic form, the measures were all labeled "How I Think and Feel" and specified as either "self" or "work," as is noted in Appendix B. This was done in order to make the purpose of each measure less obvious, which could encourage participants to respond more openly to questions. All participants were given the Child Care Center Employee Participant Information Questionnaire first because this measure included demographics and other basic information. The order of the remaining questionnaires was randomized to reduce the effects of fatigue or response sets. The only exception to the randomized order was that the Child Care Worker Stress Questionnaire was always administered before the CCCWES to ensure that a wide range of responses were given to the open-ended questions on the Child Care Worker Stress Questionnaire. However, during the administration of the questionnaires, it was apparent that some individuals completed the open-ended measure last, possibly because it required the most

time and effort. In addition, some participants were unable to complete this measure due to time constraints or not being able to generate any responses. The reading and writing skills of some participants could also have affected their ability to complete this measure.

The set of questionnaires took most individuals between 30 and 45 minutes to complete. Following the completion of their measures, participants were allowed to ask questions about the study. Participants also often asked questions while completing the measures. All participants were given information on mental health services (see Appendix K, p. 200). Finally, participating employees were given a $10 gift card from either Target or Wal-Mart to thank them for their time and effort.

Hypotheses for the Current Study

Hypothesis 1. Child care workers were expected to report a higher number of mental health symptoms than women in the general population.

Justification. Child care providers were expected to report a high number of depressive symptoms, as measured by the CES-D, consistent with findings in previous studies in child care workers (Fish et al, 2005; Fish, 2008) and early elementary school teachers (Schonfeld, 1990; Jurado, Gurpegui, Moreno, & Luna, 1998; Jurado et al., 2005; McLaughlin, 2010; Veenstra, 2010). On this measure, a cutoff score of 16 and above was used to indicate high rates of depressive symptoms. Previous research studies have suggested that child care workers are at a higher risk for diagnoses such as depression. In the Fish et al. study (2005), 27% of the sample of child care workers obtained scores above the cut-off on the CES-D. Fish et al. compared the percentage of individuals scoring above the cut-off on the CES-D to the point prevalence rate of depression in women. At any one time, approximately 5 to 9% of women are depressed (APA, 2000). Fish et al. used a 9% rate as the comparison for the sample because the majority of the

participants were female, and it was determined that this rate provided a more conservative estimate. The results showed that there was a statistically significant difference between the child care workers' rate of depressive symptoms and the rate of depressed women in the general population.

Child care providers in the present study were also expected to report a high number of symptoms on selected indices from the BSI. These included the Global Severity Index and the Depression, Anxiety, and Somatization subscales. Workers' raw scores on the BSI were converted into standard scores for data analysis. T-scores of 63 and higher were considered elevated, as this is the level considered to be "cases" on the BSI.

In a previous study using the SCL-90, which is the longer version of the BSI, 48% of the sample scored one standard deviation above the mean (i.e., above 60) on the Depression scale (Fish et al., 2005). Furthermore, 27% of the sample obtained clinically elevated scores (i.e., above 63) on this scale. Based on these results, it was expected that child care employees in the current study would be likely to obtain above average scores on the BSI Depression scale.

Past studies have not closely examined the Global Severity Index (GSI) or the Anxiety and Somatization subscales of the BSI in a sample of child care workers. These scales were included in this study because they also could be affected by the stress associated with child care work. Due to the lack of research on these scales with child care employees, no specific hypotheses were made regarding these sets of symptoms. However, it was tentatively expected that the rates of elevated scores in the current sample would be higher than in the general population. For the Anxiety scale, the rate of participants scoring above the cutoff was compared to the rate of individuals diagnosed with Generalized Anxiety Disorder in the general population, which is 3% (APA, 2000). If available in the test manual or in an independent study, the rates of

individuals scoring above 63 on the GSI, Anxiety, and Somatization scales would be compared to a population estimate for these scales (adult females in the community).

Analyses. This hypothesis was examined with a *chi*-square test using the population estimates of Major Depression and Generalized Anxiety Disorders as the expected values. Specifically, it was expected that the rate of child care workers who scored above a 16 on the CES-D and above a t-score of 63 on the BSI Depression scale would be above 9%. It was further expected that the rate of child care workers who scored above 63 on the Anxiety scale of the BSI would be higher than the expected value of 3%. *Chi*-square analyses were also planned to compare the sample rates to the normative sample estimates of the BSI for the Anxiety, Somatization, and Global Severity Index. It was expected that a significantly higher number of participants in the current sample would score above 63 on these scales as compared to a normative sample comprised of women in the general population.

Hypothesis 2: The amount of perceived problems at work, including problems with children, problems with parents, conflict with colleagues, and task overload, were expected to predict the workers' levels of mental health symptoms, such that the higher the level of reported problems, the higher the level of mental health symptoms.

Justification. Past research studies have identified a number of sources of stress for individuals employed at child care centers. In a survey by Chambliss (1997), infant care workers identified problems with children, problems with parents, and problems with staff as the three most significant areas of stress. In another survey, 27% of child care workers identified working with children as what they enjoyed least about their jobs (Kontos & Stremmel, 1988). However, these surveys, while interesting, do not examine the association between worker stress and mental health symptoms.

The vast literature on burnout also provides information about the sources of stress for child care workers. Among their five sets of factors that contribute to burnout, Goelman and Guo (1998) identified demanding roles and responsibilities, poor social support, and poor communication as prevalent problems in the child care industry. Although the concept of burnout does not explicitly measure disorders such as depression, the burnout component of emotional exhaustion, which is part of the definition of burnout by Maslach (1982), seems to share some features with symptoms of depression, such as fatigue, low energy level, and emotional distress.

There is evidence from other occupational fields that stress in the workplace, burnout, and depression are linked. In a sample of over 2000 employees at a Canadian financial firm, Murphy, Duxbury, and Higgins (2006) discovered that burnout, negative productivity, life satisfaction, and physical health were related to stress, anxiety, and depression in their sample. Stress and depression specifically showed the strongest association of any of the variables to a worker's level of burnout, as well as to his or her overall productivity.

Analyses. Prior to the completion of this study, four of the proposed scales from Child Care Center Work Environment Scale (CCCWES) were selected to examine this hypothesis: the Problems with Parents, the Problems with Children, the Conflict with Colleagues, and the Task Overload scales, assuming that these scales showed appropriate psychometric properties with the sample. It was further planned that this hypothesis would be examined with five different dependent variables: the CES-D score and the four scales from the BSI, the Global Severity Index, the Depression scale, the Anxiety scale, and the Somatization scale. These dependent variables were intended to be examined separately in the analyses.

After determining the composition and structure of the CCCWES scales, the first step in exploring this hypothesis was to examine the correlations between each of the CCCWES scales

and the dependent variables. Following this step, a series of hierarchical multiple regressions was conducted in order to analyze the individual contributions of variance from each of scales from the CCCWES. It was planned that both the unique and overlapping contributions of these scores would be investigated. The type of multiple regression that would be used to examine this hypothesis depended on the inter-correlations among the scales. It was expected that individuals who reported a high number of work problems on the CCCWES would also obtain high scores on the CES-D and the BSI scales.

Hypothesis 3: Positive aspects of child care center work, including commitment to the profession, relationship with supervisors, and job control, were hypothesized to predict the workers' levels of mental health symptoms, such that the higher the level of positive feelings about work, the lower the level of mental health symptoms.

Justification. These factors have been previously established as positive aspects of the child care center environment. An individual's commitment to staying in his or her chosen profession is clearly associated with a lower risk for turnover and burnout (Manlove & Guzell, 1997; Stremmel, 1991). It stands to reason that individuals who enjoy their work and have chosen a particular field as their career path would also report less on-the-job stress, lowering their risk for the development of psychopathology. Past studies have shown that child care workers in general have low commitment toward the profession. In fact, child care center workers differ from other professionals who work with young children in their intention to remain in the profession. Harding (1991) found that in a sample of first-year early education students, only 9% intended to work in a child care center following their graduation. Forty-three percent of the students indicated that they planned to work in a kindergarten classroom, while the remaining students (39%) indicated that they were comfortable working in either setting. These

students saw low pay, the length of the work year, and the hours of work as disadvantages of child care centers as compared to kindergarten classrooms.

Positive relationships with supervisors were hypothesized to predict lower levels of reported mental health symptoms. It was expected that employees who felt more supported by their direct supervisors and/or the center administrators would likely hold more positive feelings about themselves and their work. Conversely, employees who thought their supervisor treated them unfairly or who they thought did not have their interests in mind were hypothesized to be more frustrated in their daily work. Past studies have identified child care workers' relationships with their supervisors or administrators as a key variable. For example, in the observational study by Mill and Romano-White (1999), child care workers' reports of poor relationships with their supervisors was the most significant factor associated with children's observed angry behaviors. A worker's degree of depressive symptoms could provide one possible explanation for this link.

It was also expected that a child care worker's perceived feelings of control over his or her daily responsibilities and classroom environment would be inversely related to symptoms of disorders such as depression and anxiety. The association between a person's perceived control over his or her environment and their depressive symptoms is well-established in the coping literature (Seligman, 1974; Rotter, 1990). Certain beliefs about locus of control, specifically the belief that personal control is possible and achievable, have also been found specifically to protect child care center workers against burnout (Fuqua & Couture, 1986). In this project, individuals who reported a high level of job control were expected to score lower on measures of depression, anxiety, health complaints, and overall psychological symptoms.

Analyses. Prior to the completion of the study, it was planned that three of the proposed scales from the CCCWES: the Supervisor Support, the Commitment to the Profession, and the

Job Control scales, would be used to examine this hypothesis. It was assumed, however, that based on preliminary analyses of the CCCWES, it could be necessary to alter the number, composition, or structure of these subscales. As with the second hypothesis, it was planned that this hypothesis would be examined separately with scores from the CES-D and the four BSI scales.

The analysis of this hypothesis follows the same steps as the second hypothesis. The individual correlations between the CCCWES scale(s) of positive factors and each of the dependent variables were examined first. Then, a series of hierarchical multiple regressions were conducted in order to determine the unique, individual contributions of variance from each of the CCCWES scales. Individuals who obtained high scores on the positive work environment scales were expected to obtain low scores on the CES-D and the BSI scales.

Hypothesis 4: Positive personal factors, including age, amount of training, educational attainment, and perceived social support, will be associated with lower rates of reported psychopathology among child care center employees.

Justification. This group of factors was hypothesized to serve as protective factors that reduce the risk of mental health problems among child care workers. Older age, higher perceived social support, and greater education have previously been observed to correlate with lower rates of depressive symptoms (Fish et al., 2005). In addition, higher levels of training predict other positive outcomes, such as improved behavior toward children in center-based care (Fukkink and Lont, 2007; Kaplan & Conn, 1984).

Analyses. The characteristics of age, amount of education, and the amount of training received were collected through the employees' self-report on the Child Care Center Employee Participant Information Questionnaire. Participants who are older, well-educated, and are well-

trained were expected to report fewer mental health problems as measured by the CES-D and the BSI. Information about participants' perceived social support was collected through the completion of the Social Provisions Scale. It was predicted that individuals with high scores on the Global Social Support scale would report fewer symptoms on both the CES-D and the BSI. Each of the independent variables was planned to be examined separately, but because it was expected that many of these variables would be highly correlated (e.g., training and education), it was planned that the inter-correlations would be closely examined prior to any analyses in order to determine whether any of the factors needed to be combined.

Hypothesis 5: It was expected that there would be an association between annual turnover rates and employee-reported work problems, such that employee participants would report higher levels of work problems at facilities with higher as opposed to lower turnover rates.

Justification. It is assumed that having a high annual turnover rate indicates organizational problems at a child care center. If employees do not stay for long, they may be facing substantial pressures in the work environment. Coupled with low pay and little support from supervisors, these workers may prefer to go elsewhere. Individuals who work in centers where new employees come and go frequently also face a number of potential stressors. Their morale may be lower, and they may not feel well-supported by their fellow staff members, with whom they do not have the opportunity to develop significant camaraderie due to frequent turnover.

Analyses. Information about the annual turnover rates and other employee problems was collected directly from the center directors or administrators. It was planned that a nested design would be used in order to match employees' responses to the center where they worked. It was also planned that the number of perceived problems in the workplace would be derived from the

responses on the CCCWES; specifically, it was predicted that the scales of Supervisor Support, Task Overload, Job Control, and Conflict with Colleagues, if these scales are suitable for use in the analyses, would be associated with turnover. It was expected that in locations with a high reported annual turnover rate, employees would report low levels of supervisor support and job control. These employees also were expected to report high levels of task overload and conflict with colleagues.

Hypothesis 6: Employees in chain-based child care facilities were expected to have more negative perceptions of their work environments and report higher levels of psychopathology than individuals working in non-chain-based centers.

Justification. This was considered a provisional hypothesis. In order for this hypothesis to be explored, there had to be sufficient variability in the types of child care facilities in the sample. Chain-based care facilities include the franchises of any corporate child care center or preschool program (e.g., KinderCare, Childtime, Bright Horizons). In contrast, non-chain participating centers are independent and are owned and operated regionally. Information about the type of child care facility was provided by center directors.

A past study by this research group (Fish, 2008) suggested that individuals working in chain-based centers had a higher level of depressive symptoms than those employed by independently owned facilities. The current study sought to confirm this finding, as well as to explore some of the aspects of the work environment that may differ between corporate franchises and non-chain operations. One proposed explanatory factor is the amount of control that center employees have in making decisions about the curriculum and routine in their classrooms. Chain-based centers may have more rules and restrictions that employees must follow, which limit the amount of control that employees have over their day-to-day activities.

Unfortunately, we were unable to secure the consent more than one chain-based center to participate in this project, despite many requests. Thus, this hypothesis was dropped from the study.

CHAPTER 3

RESULTS

The data were inspected for form, distribution, and completeness prior to their use in any analyses. For non-demographic items, the mean score replaced missing responses. Only 0.3% of items required replacement. The instruments and scales used in the study had appropriate characteristics to allow for the use of standard, inferential, parametric statistics.

Employee Work History, Wages, and Job Benefits

Employees were asked to list their total child care work experience in years and months. Participants differed significantly in their amount of child care work experience. Table 6 (p. 121) details the work experience of the participants. Because participants responded to an open-ended question about experience in the child care field, their responses were not necessarily limited to time worked in child care centers. Other child care experiences could have included home-based child care, elementary or high school teaching, or less formal pursuits, such as volunteering or babysitting. Lifetime experience ranged from only 2 weeks (reported by 2 employees) to over 25 years. The mean level of experience was 8.6 years, with a slightly lower median of 7.3. Work experience was positively skewed for the group; the higher mean was due to a small number of participants who had been working in the field for 15 years or more. Participants had worked at an average of 1.2 other centers prior to their current jobs, with a range of 0 to 6 other centers.

Center employees were also asked to report how long they had been working at their current centers, the number of hours per week they worked, and their wages (see Table 6). The mean length of the current job was 4.8 years, with a median of 3 years. Employees worked between 20 and 66 hours per week, with an average of 36.6 and a median of 38. When asked about wages, many employees reported either their hourly or annual wages; however, hourly or

annual wages were calculated for all employees using their reported weekly hours and an estimate of 50 weeks in the year (accounting for holidays). Hourly wages ranged from a low of $7.60/hour to a high of $23.50/hour (*M* = $10.87; *Mdn* = $10.00). Annual wages ranged from $4800 to $47,000. The mean annual wage was $19,958, and the median was $18,350; these reported wages are comparable to national data, which indicate a median annual income of $19,300 for child care workers (U.S. Bureau of Labor Statistics, 2012c). Employees also reported on whether they had health insurance. Although the majority of the sample reported they had health insurance, most individuals did not receive these benefits through their center employers.

Employee Health, Absenteeism, Enjoyment of Work, and Commitment to the Profession

Table 7 (p. 122) presents the frequency of responses to several other questions asked of child care center participants. Twelve participants reported having a physical health problem that affected their work. Examples included backaches, chronic pain conditions (e.g., fibromyalgia), a weak immune system, and foot pain. Only four employee participants reported having a mental health condition that affected their work. Examples included anxiety disorders and attention problems. Fourteen employees recalled experiencing an on-the-job injury as a child care center worker. Some of the employees' responses included a torn tendon from lifting a child, a broken bone from standing on a chair, a concussion from slipping on a wet floor, back injury, being cut and needing stitches due to a fall, and being assaulted (e.g., kicked, hit, or bit) by children. Employees also were asked the number of days they missed within the past 12 months. The typical employee had missed about a week of work. Responses ranged from 0 to 40 days, with a mean of 4.9.

Employees were asked to indicate how much they enjoyed their work. Over 90% of the employees responded positively. The participants also indicated whether child care work was their career. The majority of respondents (69.3%) responded positively to this question. A little over one-fourth of the sample (26.7%) indicated they did not intend to continue working as a child care provider. Three other individuals wrote in that they were unsure whether they would remain in the profession.

Bivariate Correlations of Employee Variables

Table 8 (p. 123) presents the bivariate correlations of several employee variables, including age, education, training, work experience, and pay. Not surprisingly, employee age is associated positively with lifetime work experience (r = .54, p < .01) and the length of the current position (r = .41, p < .01), as older employees have had more opportunity to gain experience in the field. Older employees also make more than younger employees do, as shown by the positive correlations with hourly pay (r = .25, p < .05) and annual income (r = .26, p < .05). Lifetime child care work experience and current job length are also positively associated with pay. Employee education level is not correlated with lifetime or current job experience. However, higher education is positively correlated with both hourly pay (r = .50, p < .01) and annual income (r = .43, p < .01). The number of self-reported training hours is not correlated with any of these other variables, which is not surprising given that participants gave widely discrepant responses to questions about training.

Mental Health Symptoms in Child Care Center Employees

Employees' levels of mental health symptoms were assessed using scores from the CES-D and the BSI. It was expected that child care center employees would obtain higher scores on these measures than found in the general population. On the CES-D, the mean score for the

sample was 10.45 (SD = 9.56); this mean is clearly not above the cutoff score of 16. However, 19 participants (18.8%) in the sample scored above 16. The obtained frequency of elevated scores was compared to the expected population estimate of 9%, which is the point prevalence of Major Depression in community samples of women. This comparison was significant, $\chi 2$ = 11.87, p = .001, indicating that the sample reported a significantly higher level of depressive symptoms on the CES-D than expected in a non-clinical sample of women. It is important to note, however, that scores on the CES-D and BSI only indicate sets of symptoms and do not necessarily correspond to actual diagnoses of Major Depressive Disorder or any other disorder.

Similar findings were expected for the BSI Depression scale. The mean T-score on this scale was 48.67 (SD = 8.56), falling below the cutoff of a T-score of 63. Ten participants (9.9%) scored above 63 on this scale. The comparison to the population estimate was not significant, $\chi 2$ = .100, p = .752. On the BSI, about the same proportion of individuals as is expected in the general population reported an elevated level of depressive symptoms.

On the BSI Anxiety scale, the mean score for the sample was 48.25 (SD = 10.69). Fifteen individuals (14.9%) scored at or above a T-score of 63. This level was compared to the population estimate of 3%, which is the point prevalence of Generalized Anxiety Disorder in the general population. This comparison showed a significant difference, $\chi 2$ = 48.75, p < .001.

There are no population estimates available for the BSI Somatization and GSI scales so it was not possible to conduct population-based comparisons with these scales. On the BSI Somatization scale, the mean T-score for the sample was 49.89 (SD = 9.08). Ten participants (9.9%) obtained T-scores at or above 63 on this scale. The Global Severity Index (GSI) of the BSI is a measure of distress based on all 53 items. In the current sample, the mean T-score of the

GSI was 50.05 (SD = 11.09). Sixteen of the employee participants (15.8%) scored above the cutoff.

Table 9 (p. 124) summarizes the participants' scores on the CES-D, the BSI, and the four scales of the CCCWES. Scores from the Social Provisions Scale (SPS) and the Life Stressors Form (Abbreviated) are also presented in this table.

Employee Variables as Predictors of CES-D and BSI Scores

Table 10 (p. 125) presents the bivariate correlations of all of the employees' CES-D total scores, the four scales of the BSI, the four subscales of the CCCWES, the sum of all of the items on the Life Stressors Form (Abbreviated), the SPS Global Social Support scale, and selected employee characteristics (age, education, hourly wage, and commitment to remain in the profession). These results show that all five dependent variables (CES-D score and the BSI Depression, Anxiety, Somatization, and GSI scales) are correlated with each other. Not surprisingly, the two measures of depression show a particularly strong correlation, $r = .720$, $p < .001$. The three subscales of the BSI also show high correlations with the GSI score (Depression scale, $r = .769$; Anxiety scale, $r = .839$; Somatization scale, $r = .745$). These strong correlations are expected given that every subscale is included in the GSI score. As was planned prior to the project, each of these symptom scores is examined separately with each set of participant variables below. By looking at each score individually, it is possible to see the different relationships with the independent variables for each set of symptoms.

Risk factors: Center Culture, Work Strain, Burnout, and life stress. It was hypothesized that a high number of reported problems at work, including problems with children, problems with parents, conflict with colleagues, and task overload, would be associated with a high number of reported symptoms of depression and anxiety, somatic complaints, and

general psychological distress. Three of the subscales derived from the CCCWES were used as indicators of work-related problems. The sum of the items endorsed on the Life Stressors Form was also included with this set of variables. As is evident in Table 10, the number of stressful life events was highly correlated with each of the symptom scores. The inclusion of this score allowed the regression to test whether work-related problems were still related to symptom scores when a person's outside-of-work stressors were accounted for.

Hierarchical multiple regression analyses were used to examine the association with work problems, life stressors, and each of the symptom scores. Three variables were included in the first step, and the one omitted variable was entered in the second step. This was repeated with each of the independent variables. This procedure was chosen because there were no prior predictions about the relative influence of each variable. Furthermore, the set of regression analyses shows each variable's unique individual contribution to the total amount of variance accounted for. In the last regression, all independent variables were entered simultaneously, which shows the effects of the entire set on the dependent variable.

Table 11 (p. 126) displays the results of these analyses for the CES-D, including the amount of variance accounted for (R^2), the unstandardized regression coefficients, the standardized regression coefficients (β), and the change in variance accounted for (ΔR^2) for each independent variable. Out of the four independent variables, stressful life events accounted for the largest proportion of variance in CES-D scores, contributing .103 to R^2. This ΔR^2 is significantly different from zero, F (1, 96) = 13.69, $p < .001$. The addition of Center Culture, Work Strain, and Burnout did not produce significant changes to R^2 when added to the three other variables. The full model with all five variables was significant, $R^2 = .277$ (adjusted $R^2 = .247$), F (4, 96) = 9.21, $p < .001$.

A different pattern of results was seen with the BSI Depression scale scores. Table 12 (p. 127) shows the series of hierarchical multiple regression analyses using the Center Culture, Work Strain, Burnout and the Life Stressors Form scores in predicting the Depression scale scores. In this case, Center Culture, Work Strain, and stressful life events were all significant predictors of the dependent variable. Only Burnout failed to emerge as a significant predictor, contributing only .006 to R^2. The model with all four variables was significant, $R^2 = .252$ (adjusted $R^2 = .221$), $F\ (4, 96) = 8.11$, $p < .001$.

In Table 13 (p. 128), the results of this same set of hierarchical multiple regression analyses conducted with the BSI Anxiety scale are presented. These results are similar to the BSI Depression scale. Center Culture, Work Strain, and stressful life events all produced significant ΔR^2; Burnout once again did not appear to be a significant predictor. The Life Stressors Form score produced the largest ΔR^2, contributing .147 to R^2. The model with all independent variables showed statistical significance in predicting Anxiety scores, $R^2 = .417$ (adjusted $R^2 = .392$), $F\ (4, 96) = 17.13$, $p < .001$.

When these same variables were considered with the BSI Somatization scale, yet another pattern of results was found (see Table 14, p. 129). Work Strain and the number of stressful life events were significant in predicting Somatization scores; stressful life events accounted for a higher proportion of R^2, having a ΔR^2 of .146 as compared to the ΔR^2 of .034 contributed by the Work Strain scores. In contrast to the BSI Depression and Anxiety scales, Center Culture did not account for a significant amount of variance in the Somatization scores. Burnout also continued not to be a significant predictor. The full model was significant, $R^2 = .309$ (adjusted $R^2 = .280$), $F\ (4, 96) = 10.72$, $p < .001$.

The final set of hierarchical multiple regression analyses with this set of variables was completed with the BSI Global Severity Index (see Table 15, p. 130). The results were comparable to those of both the GSI Depression and Anxiety scales. Center Culture, Work Strain, and the Life Stressors Form scores produced significant contributions to R^2. Burnout was once again not a significant individual predictor, indicating that it did not contribute significant amounts of variance to any of the five dependent variables. The combination of Center Culture, Work Strain, Burnout, and Life Stressors Form scores successfully predicted the Global Severity Index scores, $R^2 = .411$ (adjusted $R^2 = .386$), $F(4, 96) = 16.75$, $p < .001$.

Protective factors: Pride and professionalism, employee education, age, and perceived social support. In the third hypothesis, it was expected that positive aspects of child care center work, including high levels of commitment to the profession, feelings of job control, and positive relationship with supervisors would predict CES-D and BSI scores. The results of the analysis of the CCCWES produced only one positive scale (Pride and Professionalism). Because there was only one positive scale, this variable was examined alongside of several other factors that were expected to be associated with lower scores on the CES-D and BSI. As described in the fourth hypothesis, positive personal characteristics, including employee age, amount of training, education, and perceived social support, were all expected to have inverse relationships with the symptom scale scores. As noted earlier, the self-reported number of training hours was not measured reliably, as there were extreme discrepancies among the responses, so training is not included in any of the hierarchical multiple regression analyses. Hourly wages were included in addition to the planned variables of positive feelings about child care work and relevant personal characteristics. As with the risk factor variables, a series of hierarchical multiple regressions were conducted with each of the dependent variables. In each

regression, one of the predictor variables was omitted in the first step and then added in the second step. In the final regression, all of the positive variables were entered together into the model.

Table 16 (p. 131) displays the results of this set of hierarchical multiple regression analyses for the variables of Pride and Professionalism, social support, employee age, education, and wages in predicting CES-D scores. Out of the five positive variables, only social support was a significant individual predictor. It added .088 to R^2. Employee age approached significance in its contribution to R^2, $\Delta R^2 = .033$, F (1, 92) = 3.77, $p = .055$. The remaining variables were not significant individual predictors. The model with all 5 independent variables was statistically significant, $R^2 = .202$ (adjusted $R^2 = .159$), F (5, 92) = 4.66, $p = .001$.

The results were similar when the same variables were used to predict BSI Depression scale scores (see Table 17, p. 133). Only perceived social support contributed a significant amount of variance to R^2. The model with all variables was statistically significant, $R^2 = .136$ (adjusted $R^2 = .090$), F (5, 92) = 2.91, $p = .018$, although the amount of variance accounted for by these variables was less than for the CES-D scores.

For the BSI Anxiety scale, both social support and age contributed significant amounts of variance (see Table 18, p.135). Social support produced a ΔR^2 of .044, which is significantly different from zero at $p < .05$, and employee age contributed .036 to R^2, which was significant at exactly the .05 level. Education, hourly wage, and Pride and Professionalism continued to not be individual predictors when considered along with the other variables. The model with all five of these variables was significant, $R^2 = .146$ (adjusted $R^2 = .100$), F (5, 92) = 3.15, $p = .011$.

The results of the analyses completed with the Somatization scale scores mirrored those of the CES-D and BSI Depression scale scores (see Table 19, p. 137). Social support was the

only variable that produced a statistically significant change in R^2. Social support accounted for almost all of the variance in the model, producing a ΔR^2 of .051. The model with all variables was not statistically significant, $R^2 = .077$ (adjusted $R^2 = .027$), F (5, 92) = 1.54, $p = .184$.

The results of the regression analyses with the five positive variables in predicting the Global Severity Index scores are displayed in Table 20 (p. 139). Social support and age both emerged as significant individual predictors of these scores. Consistent with the results of the analyses with the other symptom scores, the variables of Pride and Professionalism, education, and hourly wages did not contribute significant amounts of variance to R^2. The model with all of the variables was statistically significant, $R^2 = .234$ (adjusted $R^2 = .193$), F (5, 92) = 5.63, $p < .001$.

Work-related problems, stressful life events, age, and social support. The final group of hierarchical multiple regression analyses examined the contribution of positive variables after the effects of work-related problems and stressful life events were accounted for. The variables for these analyses were selected based on the results of the previous hierarchical multiple regression and bivariate correlation analyses. Negative variables were entered together in the first step. These were the Center Culture, Work Strain, and Life Stressors Form scores. Because Burnout was not a significant predictor in any of the previous analyses when considered along with these other variables, it was excluded. Only two positive variables, age and social support, emerged as significant individual predictors when considered with the other positive variables. Each was entered in a second step by itself in order to see its individual contribution of variance after the three negative variables were included. In the final step, all five variables were entered in simultaneously.

Table 21 (p. 141) shows the results of these analyses using the CES-D as the dependent variable. Both age and social support were significant individual predictors, indicating that they accounted for variance in CES-D scores even when work-related problems and stressful life events were accounted for. These variables produced almost identical ΔR^2 values (social support $\Delta R^2 = .031$; age $\Delta R^2 = .029$). The model with all five variables was significant, $R^2 = .346$ (adjusted $R^2 = .312$), F (5, 92) = 10.07, $p < .001$. It is also worth noting that in contrast to the earlier analyses with the risk factor variables, Work Strain was a significant individual predictor at the .05 level in the full model ($t = 1.96$, $p = .053$). It likely did not contribute a significant proportion of variance in the earlier model due to its overlapping variance with Burnout. As with the earlier analyses, Center Culture was not a significant predictor of CES-D scores.

The results are quite different for the BSI Depression scale scores (see Table 22, p. 142). Neither age nor social support emerged as significant individual predictors after the effects of Center Culture, Work Strain, and stressful life events were accounted for. The full model was significant, $R^2 = .276$ (adjusted $R^2 = .238$), F (5, 95) = 7.25, $p < .001$. In this combination of variables, only Work Strain was a significant individual predictor, although the number of stressful life events approached significance at the .05 level ($t = 1.92$, $p = .058$). Not surprisingly, the stressful life events total score shows significant correlations with both age ($r = -.232$) and social support ($r = -.267$); the overlapping variance with these other variables likely reduced the effect of stressful life events in this model.

Table 23 (p. 143) summarizes the results of age and social support in combination with work-related problems and stressful life events in predicting BSI Anxiety scale scores. The model with all five variables has a R^2 of .436 (adjusted $R^2 = .406$), meaning that this set of variables accounts for over 40% of the variance in the BSI Anxiety scores. However, in this

model, only the Work Strain, employee age, and number of stressful life events variables were significant individual predictors. Social support did not contribute a significant amount of variance to the model beyond the work-related problems and stressful life events variables.

In the previous hierarchical multiple regressions completed with the BSI Somatization scale with both the negative and positive sets of variables, it was evident that this scale generally showed weaker relationships with the individual predictors as compared to the other dependent variables. This trend continued when the positive and negative independent variables were combined (see Table 24, p. 144). Neither social support nor age contributed changes in R^2 that were significantly different from zero. The model with all five variables was statistically significant in predicting Somatization scale scores, $R^2 = .300$ (adjusted $R^2 = .263$), F (5, 95) = 8.14, $p < .001$. However, only the number of stressful life events was a significant individual predictor.

The final set of hierarchical multiple regression analyses was completed with the Global Severity Index scores (see Table 25, p.145). The model with all five variables produced a R^2 of .464 (adjusted $R^2 = .436$), accounting for around 44% of the variance in the GSI scores. Social support did not contribute a significant amount of variance ($\Delta R^2 = .021$, $p = .063$). Age contributed a change in R^2 of .048, which was significantly different from zero (F (1, 96) = 8.26, $p = .005$). In the final model with all five independent variables, Work Strain, stressful life events, and age were significant individual predictors.

Employee Responses and Center Characteristics

Bivariate correlations between all center and director variables are summarized in Table 26 (p. 146). The maximum number of children that the center was licensed for was positively correlated with both the total number of employees working at the facility ($r = .71$, $p < .01$) and

the number of classrooms (r = .73, p < .01). The total employee number is also correlated with the number of employees who left the center in the previous 12 months (r = .57, p = .05). However, the number of employees is not correlated with the percentage of employees who left within the previous year (r = .17, p = .56). The turnover total, but not the turnover percentage, was positively correlated with director work experience, indicating that directors with more work experience had fewer employees leave annually from their centers. Not surprisingly, there were positive correlations between director age and both the director's total amount of work experience and the length of her current job.

Table 27 (p.147) summarizes means and frequencies of employee responses to several variables organized by each center. This table provides information about how the participants' responses varied among the centers. As is evident in the table, most centers had at least one participant who scored above the cut-offs of the CES-D or BSI scales. This suggests that individuals with elevated scores on the symptom scales were not limited to a small number of centers. Many participants scored highly on both the CES-D and one or more of the BSI scales. However, this was not always the case. The total number of individuals who scored above the cutoff scores of any of the symptom scales was 26, meaning that 25.7% of the sample reported high levels of symptoms of depression, anxiety, somatic complaints, or general psychological distress. Table 27 also shows how centers varied on hourly wage, work experience, and mean scores on the CCCWES. These mean scores provide information about how drastically centers differed in respect to certain variables.

Prior to the completion of the project, it was determined that two center variables were of interest to the study hypotheses and would be included in analyses with employee variables. The first was annual turnover rate. It was expected that a high amount of employee-reported work

problems would be associated with high rates of annual turnover. Prior to the study, it was planned that a nested design would be used in order to examine this research question. However, the number of groups included in the study is insufficient to conduct this type of analysis. Although there is some disagreement on the recommended number of groups needed for the use of multi-level modeling techniques, it is established that a high number of groups with adequate sample sizes within each is needed for a sufficient amount of power. One conservative recommendation proposed by Kreft is called the "30/30" rule (Kreft & De Leeuw, 1998), requiring 30 groups with 30 participants each. Other researchers have found that only 20 groups can be sufficient under some circumstances (Shih, 2008). Analyses with small numbers of groups, such as 10, have been shown to be problematic (Maas & Hox, 2005); specifically, sample sizes of fewer than 50 groups show biased standard errors at the group level. With only 14 centers and 101 participants in the sample, it does not seem advisable to conduct hierarchical linear modeling analyses; therefore, this procedure was not used to explore the association with turnover rate or any of the other center variables.

The second variable of interest was whether a facility was part of a corporate chain of child care centers versus being privately owned. Unfortunately, only one chain-based center was included in the sample, meaning that this variable could not be used in any analyses. Instead, it was decided to use the center's maximum capacity as a center variable; this information was obtained from each center's state licensing information.

In order to determine whether there were any significant relationships between employee and center variables, bivariate correlations with all of these variables were completed. Table 28 (p. 148) shows the results of these bivariate correlations for the center variables of maximum capacity, total number of employees, and annual turnover rate. These correlations do not take

into account the fact that between 4 and 12 employees (i.e., the number of participants recruited from each center) have the same center information and thus the variables are not independent from each other. As is evident in Table 28, there are few significant correlations between the center and participant variables. The employees' hourly wage is inversely correlated with center capacity, the total number of employees, the number of employees who left annually, and the annual turnover percentage. Centers with a higher rate of turnover paid their employees less than those with lower turnover levels.

The center variables were not correlated with the CES-D or BSI scores. The total number of employees showed a positive correlation with both the Center Culture and Burnout subscales of the CCCWES. At centers with a larger amount of employees, the participants reported more problems with center co-workers and supervisors. The Burnout scale was also positively correlated with center capacity and the total number of employees who had left their center jobs. Employees working at larger centers reported more work-related stress and negativity toward child care work than those working at smaller centers. Surprisingly, the Center Culture scale showed an inverse relationship with the annual turnover percentage. This means that at centers with a lower annual turnover rate, employees reported a higher number of work-related problems. This relationship could be because centers with fewer employees had higher annual turnover percentages, and the Center Culture scale was positively correlated with the total number of employees at the center.

Bivariate correlations were also completed using the mean scores on the 4 CCCWES subscales, the mean hourly wage, and the center variables of capacity, number of employees, and turnover. Table 29 (p. 149) displays the results of these correlations. Not surprisingly, higher levels of problems with a center's culture were found in larger centers. Burnout also showed a

positive correlation with the total number of employees who left, although it was not significant in its correlation with the turnover percentage.

CHAPTER 4

DISCUSSION

Child care professionals from 14 centers in the southeastern Michigan area were administered questionnaires regarding work-related problems, perceived social support, and the amount of recent stressful life events along with symptom inventories that measured depression, anxiety, somatic complaints, and overall psychological distress. In addition, information was obtained about each center and center director. This study advances the research literature on the nature of child care work from the employees' perspectives and is unique in that it included assessment of both work and personal factors.

Study Hypotheses and Results

Rate of mental health symptoms in child care professionals. In the first hypothesis, it was expected that child care center employees would report a higher level of symptoms of depression, anxiety, somatic complaints, and general psychological distress as compared to women in the general population. This hypothesis was confirmed for depressive symptoms as measured by the CES-D. Nearly 19% of the sample scored above the cut-off score of 16 on the CES-D, significantly exceeding the population estimate of 9%. However, on the BSI Depression scale, only 10% of the sample had clinically elevated scores. This level is not significantly larger than expected for women in the general population. One explanation for this discrepancy is the content of each measure. The CES-D is comprised of 20 items that assess mood and physiological symptoms associated with depression, such as appetite and sleep problems. In contrast, the BSI Depression scale is comprised of 6 questions that ask about suicidal ideation and feelings of hopelessness in addition to mood. The BSI Depression items seem consistent with many of the diagnostic criteria of an episode of Major Depressive Disorder in the *DSM-IV-*

TR (APA, 2000). The BSI Depression scale questions might be assessing a more severe level of depression as compared to the CES-D, which would account for the differences for scores seen in the sample.

The obtained levels of depressive symptoms on both the CES-D and the BSI are also lower than has been previously found by this research group. In the Fish et al. (2005) study, 27% of participants scored above 16 on the CES-D and above 63 on the SCL-90 Depression scale. There are two important differences between these samples. The first is that the Fish et al. study included both child care center employees and home-based child care providers. Although center workers reported higher levels of depressive symptoms than home providers in the Fish et al. study, this is a key difference between the samples and could have contributed the differences in the obtained rates of elevated symptoms. The second, and likely more important factor, is that the participants in the current study were older than those in the previous sample, with mean ages of 35.5 and 33, respectively. The Fish et al. study also recruited college students who worked as child care providers, which could have increased the number of younger participants. The age of the participants could account for the differences seen in the reported symptom scores given that age showed a negative correlation with CES-D scores in both the current sample and in the Fish et al. study.

Participants in the sample also reported significant levels of anxiety. Fifteen employees (14.9%) scored 63 or higher on the BSI Anxiety scale, which includes items about fearfulness and physiological symptoms. As expected by the first hypothesis, this level is significantly higher than the population estimate of 3%, which is the rate of Generalized Anxiety Disorder in the general population. Prior to this study, anxiety has not been well-documented in research on child care center employees. In fact, research on anxiety in the general population has lagged

behind research on Major Depression. According to a 2011 report from the CDC (Reeves et al., 2011), few of the surveys used to estimate mental health diagnoses in national samples even ask about anxiety. The authors noted that the omission of anxiety is a significant problem given that anxiety disorders are as common as depression and are known to cause functional impairment.

Because there has been little mention of anxiety in the child care literature, it is unknown how having high levels of anxiety could affect a child care employee's ability to fulfill her responsibilities or interact with co-workers, parents, and children. The presentation of anxiety can vary depending on the type of disorder (e.g., Generalized Anxiety Disorder, phobias, Panic Disorder, Social Phobia, etc.); however, anxiety disorders share some overlapping features. These include a high level of physiological arousal and avoidance behaviors, which are usually engaged in to manage or prevent the unpleasant physical sensations associated with high levels of arousal, such as a racing heartbeat, chest pains, sweaty hands, and other feelings of panic (APA, 2000). With these symptoms in mind, one can speculate how anxiety could affect a child care center worker. Anxious employees could be especially sensitive to criticism from parents, co-workers, and supervisors, and confrontations with parents or other individuals could provoke intense feelings of anxiety. Anxious child care employees also are prone to feeling overwhelmed by their job responsibilities. Avoidance behaviors also would have an effect on child care work. An anxious employee might be reluctant to speak up against a co-worker or challenge a supervisor. At the extreme, anxious child care workers could simply leave the room when feeling anxious, putting the room out of ratio and potentially endangering the safety of children.

Participants in the sample also reported other symptoms on the BSI. About 10% of the sample had elevated scores on the Somatization scale, which asked participants about physical complaints such as headaches and nausea. It is difficult to know if this level is typical for a

community sample of adult women because somatic complaints are not as widely studied as other psychological problems. It is also impossible to determine whether participants who reported a high number of physical complaints were actually manifesting psychological distress as physical problems or if they had actual health problems that caused these symptoms.

The final symptom scale was the Global Severity Index of the BSI, which is based on both the number and severity rating of each item. Although there are no good population estimates of the GSI in a community sample of women, it is notable that nearly 16% of the study participants reported a clinically elevated level of symptoms. Although it is not a direct comparison because the BSI was not used, the CDC has documented rates of "psychological distress" (as measured by the Kessler-6 scale) of between 3.2 and 4.0% in nationally conducted surveys (Reeves et al., 2011). This suggests that child care workers are reporting a high level of overall psychological symptoms compared to individuals in the community, although further research is clearly needed to document the frequency of actual disorders in this population.

Positive and negative factors as predictors of mental health symptoms. After confirming that a significant level of symptoms of depression, anxiety, and overall psychological distress were found in child care center employees, several analyses explored what factors were associated with higher versus lower levels of these symptoms. Three hypotheses focused on predictors of the CES-D and BSI scores. Hypothesis 2 focused on work-related problems, such as complaints from parents or disruptive behavior of children. It was expected that participants who reported many work problems would also score highly on the CES-D and BSI. Work-related problems were assessed using three scales from the CCCWES. The third and fourth hypotheses focused on potential protective factors that would be associated with lower scores on the symptom scales. Hypothesis 3 singled out positive work factors as measured by proposed

scales of the CCCWES. In Hypothesis 4, it was expected that positive personal characteristics, including employee age, education, training, and perceived social support, would be associated with lower scores on the CES-D and BSI.

For the CES-D, the number of stressful life events was the only significant individual predictor when considered along with the three work-related problem scales. These results therefore do not support Hypothesis 2; although all three negative CCCWES subscales were correlated with CES-D scores, none of the scales added significant variance to the model after the addition of stressful life events. When a set of five negative and positive variables were considered together, both employee age and social support emerged as significant individual predictors. It is notable that age was no longer a significant predictor when considered along with several positive variables. In the combined analysis, Work Strain also was significant, likely due to the omission of the Burnout scale in this particular analysis.

Given the discrepancy in the frequencies of elevated scores found for each, it is not surprising that the BSI Depression scale showed a different pattern of relationships among the variables as compared to the CES-D. In a multiple regression completed with the work problem scales and stressful life events, the Center Culture and Work Strain scales were predictive of the Depression scale scores even when the number of stressful life events was included in the model. This confirms Hypothesis 2 for the BSI Depression scales scores. When positive factors were considered, only social support was a significant predictor, which is the same finding as with the CES-D. In the combined analysis, however, age and social support did not contribute significant variance after the inclusion of stressful life events, Center Culture, and Work Strain.

The BSI Anxiety scale was associated with several employee variables. The combination of five variables, including the Center Culture and Work Strain scales, employee age, social

support, and stressful life events, accounted for over 40% of the variance in the Anxiety scale scores. In this combined analysis, Work Strain, stressful life events, and employee age emerged as significant predictors. Child care professionals who reported high levels of problems with children and parents, were younger, and had a high number of recent stressful life events, reported a significant amount of anxiety symptoms. It could be that the combination of having a stressful work environment and dealing with negative events outside of work are associated with an increased level of anxiety. Alternatively, individuals who are already stressed due to problems at home could be more likely to perceive the workplace environment as stressful.

Of the five symptom scales used in the study, the BSI Somatization scale was associated with the fewest number of predictor variables. When Center Culture, Work Strain, stressful life events, age, and social support were used together in a multiple regression, only stressful life events continued to be a significant individual predictor. Somatic complaints, unlike the other sets of symptoms, could be more strongly related to home problems than work factors. As noted earlier, a high score on the Somatization scale could indicate that a person has a physical health problem. This would account for this scale's relationship with the reported number of stressful life events, as certain items of the Life Stressors Form asked about an individual's health and recent hospitalization.

The BSI Global Severity Index was highly correlated with the Anxiety scale so it was not surprising that it showed a similar pattern of results using the hierarchical multiple regression analyses. When only negative variables were examined, Center Culture, Work Strain, and stressful life events were significant individual predictors. Out of the positive variables, only social support and age accounted for significant amounts of variance in the GSI scores. When five of the positive and negative variables were combined in a multiple regression, only Work

Strain, age, and the number of stressful life events were significant individual predictors, even though the overall model was statistically significant. This model accounted for over 40% of the variance in the GSI scores.

Interpretation of employee variables. The results of the series of hierarchical multiple regression analyses confirmed the expectations for Hypotheses 2 and 4 for some variables but not for others. Hypothesis 3 was not confirmed for any of the dependent variables. Each set of variables and its relationship to the symptom scores are briefly discussed below.

CCCWES scales. Based on the results of the current study, the CCCWES was divided into four scales. Three of these were negative in tone: Center Culture, Work Strain, and Burnout. Although the Center Culture scores were positively correlated with each of the dependent variables, it was not a significant individual predictor of the CES-D and BSI Depression scores when considered along with positive variables. It did emerge as significant when considered only with the negative variables in predicting the BSI Depression, Anxiety, and GSI scores. These results suggest that Center Culture might have an effect on these scale scores, although other variables clearly account for higher amounts of variance.

The Work Strain scale also showed positive correlations with all dependent variables. However, when considered along with Center Culture, Burnout, and the number of stressful life events, it was not a significant individual predictor of depressive symptoms as measured by the CES-D or somatic complaints. However, the BSI Depression, Anxiety, and GSI scores were associated with the Work Strain scale even after the inclusion of other negative variables. Notably, Work Strain continued to be a significant predictor of these symptom scores even after the addition of age and social support to the model.

As with all of the findings in this study, it is difficult to know the direction of the relationship between negative feelings about center culture or high levels of work strain and depression. Individuals who are depressed could be more likely to perceive that their co-workers and supervisors are hard to get along with and unhelpful. They also might find even average workloads to be more difficult to manage. Depressed individuals also could elicit negative reactions from others given that they could be lethargic and irritable, which could lead others to perceive them as unfriendly or unmotivated. Conversely, working at a child care center could increase the risk of depression in its workers or exacerbate a pre-existing mood disorder.

The relationship between anxious symptoms and general psychological distress and feeling overwhelmed by work-related problems is also likely complex. Anxious individuals could feel more overwhelmed by everyday tasks and problems than those with fewer anxiety symptoms. Cognitively, the magnitude and frequency of negative events could be amplified for anxious individuals. It is also possible that highly anxious individuals are drawn to working in a child care center for some reason. One explanation could be that individuals with anxiety find interactions with children to be less stressful than interactions with adults or being in a more high-paced and demanding field, such as sales or health care. Because of a pre-existing condition of anxiety, participants also might be under-performing based on their potential, as their anxiety could have interfered with their education attainment and job searches over the years. The nature of child care work, with its hectic day-to-day schedule of teaching, feeding, diapering, and supervising very young children, also could induce anxiety symptoms in those who are already predisposed to or diagnosed with an anxiety disorder.

The Burnout scale focused on a global feeling of being overwhelmed at work as well as a lack of commitment to the child care profession. Unlike the Center Culture and Work Strain

scales, the Burnout scale was not correlated with most of the dependent variables. In fact, it only showed a relationship with the CES-D. When considered along with the other two problem scales and stressful life events, Burnout was not a significant individual predictor of any of the dependent variables.

An important question is why the Burnout scale showed little relation to the BSI scales. It was expected in the third hypothesis that a high level of commitment to the child care profession would be a protective factor so this was clearly not confirmed for the BSI. Even for the CES-D, which was correlated with Burnout, Burnout did not emerge as a significant individual predictor when considered along with the other variables. It could be that a person's interest in remaining in one's profession has little to do with his or her mental health, at least based on the way it was defined in this study. Consistent with the findings for Burnout, the response to a single question that asked about the intention to stay in the child care field was not correlated with any of the symptom scores; however, the results of this question was correlated with Burnout scores, suggesting that the Burnout scale was assessing employees' commitment to the profession.

The commitment to the child care profession could stem from many factors other than one's mental health. Center Culture was negatively correlated with the question about intent to stay in the profession; individuals were less likely to indicate that child care work was their career when they reported negative feelings about their center's atmosphere and staff morale. Age and hourly wage were positively correlated with this question, indicating that older individuals and those who earned higher wages were more likely to want to stay in the field. There also might be other factors that were not considered in this study. Anecdotally, some of the participants mentioned their reasons for remaining at their jobs; some had been unsuccessful in searching for other jobs with their degrees and/or job history. Others reported that they continued

working at a particular center because they received a discount in child care for their own children or the center had a convenient location (e.g., to a worker's own child's school). There could be many explanations for both high levels of commitment and a lack of commitment to a job and the child care profession, and these reasons might have nothing to do with a person's level of depression, anxiety, or physical health problems.

The fourth CCCWES scale, Pride and Professionalism, did not correlate with any of the symptom scores. In fact, the only variable other than the other CCCWES subscales that it correlated with was social support. The Pride and Professionalism scale focused on a person's sense of feeling valued in his or her work by supervisors and parents and enjoying the work. It was expected in Hypothesis 3 that positive perceptions of the work environment would predict scores on the CES-D and BSI so this hypothesis was not confirmed. However, this finding could be interpreted in a positive way. Individuals can enjoy working with children and feel good about the contribution they are making day-to-day and still feel significant depression or anxiety. There is no reason to believe that individuals with psychological disorders such as a mood or anxiety disorder are any less caring, compassionate, or invested in their work than individuals without these conditions. One can appreciate the nature of the work, such as enjoying working with very young children, and still feel overwhelmed by day-to-day problems in the center environment.

Stressful life events. The results of this study underscore the importance of including questions about an individual's personal life in a study of work-related stress and mental health. If a stressful life events measure had not been included in the study, work-related problems in a child care center would have been overestimated in predicting anxious and depressive symptoms. Recent stressful life events undoubtedly had an effect on each of the symptom scales. Even

though other factors were statistically significant as predictors, the sum of the recent stressful events often accounted for the largest amount of variance in a model.

There are several possible explanations for these results. Individuals who are dealing with many problems in their personal lives could already be more depressed and anxious than is usual for them. There also likely is an interaction between the experience of stressful life events at home and work. The relationship could be additive, in that the combination of dealing with high levels of stress in both work and personal domains leads to an increase in overall psychological distress, as manifested by symptoms of depression, anxiety, or physical complaints. It also could be that individuals who are already stressed due to major life events perceive their workplaces as highly stressful. The relationship also could be in reverse. Individuals who have a history of mood or anxiety disorders might view everything in their lives in a more negative light, thusly overestimating how challenging home and work events are.

Employee age. Age showed a significant inverse relationship with three of the dependent variables (CES-D, Anxiety, and GSI). Age was also correlated with the number of stressful life events, indicating that younger individuals reported a higher number of these outside-of-work problems. Not surprisingly, age is also positively associated with total experience in the child care field, the length of one's current job, and income. The study by Fish et al. (2005) also found that older caregivers reported fewer symptoms of depression on the CES-D and SCL-90 Depression scale. One interpretation of these findings is that younger workers have a higher number of stressful events occurring in their lives, such as finding housing and having relationships end abruptly, and they could feel less certain about their futures. This sense of uncertainty could very well contribute to symptoms of depression and anxiety for some individuals. It is also possible that individuals who are depressed or highly anxious do not remain

in the child care field for very long. In contrast, those who truly enjoy the work and are committed to the profession continue working in child care throughout their careers.

Perceived social support. As was expected in the fourth hypothesis, a person's level of perceived social support, as measured by the SPS Global Social Support scale, was correlated with the CES-D and BSI scores. However, the relationship between the symptom scores and social support was more complex when it was considered along with other variables in the regression analyses. Social support was predictive of CES-D scores even after the variance of Center Culture, Work Strain, stressful life events, and age were accounted for in the model. However, social support did not remain a significant predictor of any of the BSI scales after other variables were included, even though the models with social support were still statistically significant. Having a strong social network is clearly a positive factor for individuals and could help a person cope with recent stressful events or a demanding job. However, in this study, social support was not as strong of a predictor as the other variables, including the number of stressful life events recently faced, work-related problems, and employee age.

Wages. Hourly wages were correlated positively with employee age, experience, and education level, which might lead one to expect that it would be a protective factor in relation to mental health symptoms. However, hourly wages were only correlated with the CES-D scores. Individuals with higher wages reported lower symptoms on this scale as compared to those earning a lower hourly rate. In the regression analyses, hourly wages did not predict a significant amount of variance in CES-D scores or any of the BSI scales after other variables were accounted for. Because wages are associated with higher levels of observed child care center quality (Phillips et al., 2000), it is easy to assume that higher pay motivates employees so that they enjoy their work, work harder, and are happier than individuals who earn less. However,

this explanation is overly simplistic and is not supported by the results of this study. Instead of a direct relationship between wages and employee satisfaction, motivation, and mental health, the association with quality is more likely related to broader factors about a center. Compared to facilities that pay poorly, child care centers that pay better might be able to attract the most experienced and educated child care professionals, have better resources overall, and have owners who are more invested in the quality of the facility.

Education. Contrary to the fourth hypothesis, education was not related to the scores on the CES-D or BSI. The fact that it was recorded as a categorical variable could have limited its usefulness in the statistical analyses, although it is noteworthy that education was correlated with several other employee variables. Not surprisingly, it was associated with total lifetime child care work experience and income. It also showed a positive correlation with the Burnout scale. This finding is a bit surprising given that one might expect that individuals with higher education would be better able to cope with the stressful nature of child care work. However, more highly educated individuals could be dissatisfied with the pay and type of work found in the child care field. Individuals who have bachelor's degrees or higher likely could be earning more money in a different job. Some of these individuals could be only working at a child care center out of necessity, such as elementary school teachers who were laid off by the public school system.

Training. Due to significant discrepancies in the responses, even among individuals from the same center, the variable of initial training hours was not used in any of the analyses. Despite its lack of reliability as a variable, the employees' responses to the training questions provide some interesting information. It was clear that many of the employees had no idea how much training they had been required to complete or even whether they had received any training. Certain topics for initial training and annual training hours are required by state licensing

agencies as well as outside accreditation organizations. The purpose of these training requirements presumably is to improve child care center workers' care of children and ensure they are knowledgeable about topics such as universal precautions for preventing the spread of blood-borne pathogens or mandatory reporting laws for child abuse or neglect. In reality, training might be treated as simply something to get out of the way in order to be compliant with licensing and/or accreditation standards, at least at some centers. Furthermore, center employees are almost certainly not as invested in the compliance with standards as center directors and/or owners are. Based on anecdotal information provided by the center directors who participated in the study, it seemed that directors expend a significant amount of time and energy dedicated to maintaining compliance with licensing requirements, including keeping track of their employees' training hours, maintaining ratio and group sizes even when employees are absent, and organizing child and employee records. In contrast, many center employees do not even seem to know what these requirements are, as was evident by their responses to questions regarding training hours and classroom ratios.

Center variables. Two of the study hypotheses focused on center factors. In the fifth hypothesis, it was expected there would be a relationship between a center's turnover rate and employees' reported problem scores. Due to the small number of centers in the study, it was not possible to explore this variable with a nested design as planned. Instead, bivariate correlations using both employee responses and mean levels of these responses were used to examine turnover and other center variables. Using employee variables, hourly wage was negatively correlated with both center capacity and annual turnover. Centers with a higher rate of turnover paid their employees less than those with lower turnover levels. In the correlations completed with all of the employee scores and the mean scores, the number of employees who left the

center each year was positively correlated with Burnout scores. However, this finding was not found when the turnover percentage was used, which accounted for the total number of employees at the center.

It is interesting that the employees who stayed at centers with high levels of turnover reported feeling burned out. It could be that there was something negative about the supervision or job responsibilities at these facilities that led employees to want to work elsewhere. Lower pay could also be a factor, given its correlation with the total turnover number. It is also important to keep in mind that many of the employees who left centers were fired, at least as was reported by their former center directors. The current employees in the study could have had fears about the security of their own jobs, leading them to feel higher levels of burnout.

The sixth hypothesis was provisional and focused on differences between chain-based and privately owned child care centers. Unfortunately, only one chain-based facility was included in the sample so it was not possible to explore this hypothesis. The center directors of these facilities sometimes stated they were interested in the study, but they first had to get permission from the corporation; in follow-up calls, these same directors reported that they were denied permission. Other directors indicated that they could not have a researcher come to the center because of corporate policies regarding visitors.

It is impossible to know why corporations and directors of corporate centers, at least those included in the recruitment of this study, were more reluctant to participate in a research study than the directors of privately owned facilities. Corporate policies regarding outside visitors are likely an important factor. As a franchise of a corporation, chain-based programs have more rules to follow than individually owned facilities; thus, center directors likely have less flexibility about day-to-day operations. The question of whether this corporate oversight

makes for a better or worse work environment for child care professionals will need to be explored in future studies. The use of mailed or online surveys or recruiting through child care professional groups could possibly encourage more employees from chain-based centers to participate.

Significance and Implications of Study

This study differs from other workplace studies of child care employees in that it examined both personal and work factors. The inclusion of a stressful life events scale was crucial for showing the relative effects of work-related problems and other employee factors in predicting scores on the two measures of psychopathology. It appears that stressful life events in a child care worker's personal life account for a higher amount of variance in psychological problems than other factors. However, other factors were also important in predicting the presence of symptoms. Having a high amount of life stress could lead a person to view his or her workplace more negatively. This could also increase symptoms of a disorder or exacerbate an existing mood or anxiety disorder. Life stress could also operate in combination with work-related factors to worsen a caregiver's mental health. Future studies should examine the interaction between work and personal factors to better understand these potential effects.

The results of this study also highlight the importance of studying the mental health of child care workers. Although more work is needed to better understand the predisposing factors of mental health symptoms in this population, it is notable that a higher than expected number of child care center employees in the current study had elevated symptoms of depression, anxiety, and general psychological distress. In total, one-fourth of the sample had elevated scores on one or more of the symptom scales, indicating important levels of psychological problems. Significant rates of depression symptoms have also been found among caregivers and teachers in

other studies completed by this lab group (Fish et al., 2005; Fish, 2008), suggesting that this is not an isolated finding. The finding that 15% of this study's sample was highly anxious is especially significant given that anxiety has not been previously studied in child care professionals. More work is needed in order to estimate the rates of mood and anxiety disorders among individuals in the child care field. In addition, potential harmful effects to children in the care of an anxious and/or depressed child care provider need to be explored.

Another important aspect of this study is that center directors were included as participants. Based on the responses to questionnaires, as well as through informal discussions with both directors and employees during the study, it is clear that center directors and their employees have different perspectives on child care work and the operations of the center. Both of these perspectives provide valuable information about the environment of a child care center, and future studies should consider including both center directors and employees.

Based on the study results, some recommendations can be made for center directors who would like improve the work environments of their centers. The Center Culture subscale included items regarding problems that occur with co-workers, lack of support from superiors, low morale, unfair treatment of employees, and center policies. A significant number of responses on an open-ended measure of workplace stress also mentioned problems related to the center atmosphere, supervision, or center policies (see Appendix D, p. 170). To help address these problems, center directors should be approachable and open so their employees can raise issues with them on a one-on-one basis. In addition, center employees should be allowed to voice concerns about center policies and work-related problems. Centers are bound by a set of regulations, such as those from the state licensing bureau or an accreditation agency so clearly, not all center policies can be up for debate. However, every center has slightly different

procedures for handling problems with children or parents, conflict between colleagues, and other day-to-day issues. Center employees should be given the opportunity to have a say in these policies. This can be accomplished by having a suggestion box or regular staff meetings in which policies and staff concerns are discussed. Center directors also can improve the working conditions of their facilities by making sure tasks are evenly distributed among employees and monitoring that all employees are fulfilling their assigned responsibilities. As described by the participants, another center problem is the policy for staff coverage when employees are absent for the day or even for brief periods throughout the day. At times, these problems lead to classrooms or groups being out of ratio. Center directors should ensure that policies are fair regarding coverage of classrooms, as well as keep track of whether certain employees abuse policies regarding leaving the classroom or calling in sick.

As was evident in this study, center employees also have emotional and psychological needs that should be addressed in the workplace. For the health and safety of both employees and the children at the center, center directors should be mindful of the signs of depression, anxiety, burnout, or other negative physical or emotional problems seen in employees. Center directors should work to establish an environment that reduces stress for employees. In addition to making sure responsibilities are allocated equitably and the center is designed to be as efficient as possible, center directors can work to make their employees feel welcome, comfortable, and well-supported. For example, center employees could have a break area where they can enjoy some time to themselves, participate in team-building activities as a center group (e.g., trainings, workshops, staff parties, etc.), or be encouraged to use positive stress-reduction activities on a regular basis. Center owners can also provide support to their employees by offering incentives or benefits. For example, some of the centers in the current study offered child care at a

significantly reduced cost to their employees. This particular incentive has the added benefit of allowing center employees the opportunity to visit with their own children during the day, which could reduce some of the strain of being a working parent.

Limitations of Study

One limitation of this study is that all of the data were self-report measures completed by center employees and administrators. It was not possible to verify information that was provided by the center directors regarding certain center factors, such as the annual rate of employee turnover. Employee participants' reports about the overall morale of the center, the nature of their experiences with supervisors, and other aspects of the workplace environment only reflected their perceptions of these factors, which could be inconsistent with reality.

Participants' levels of psychological symptoms and complaints were also obtained through the self-report measures of the CES-D and the BSI. Individuals could have over- or under-reported symptoms on these scales. Furthermore, these measures are symptom inventories rather than diagnostic measures. This means that the results of this study can only reveal sets of symptoms rather than actual diagnoses of Major Depressive Disorder, Generalized Anxiety Disorder, or any other psychological condition. In future studies, the use of a structured clinical interview such as the Structured Clinical Interview for the DSM-IV-Axis 1 (SCID-I; First, Spitzer, Gibbon, & Williams, 2002) would allow for actual diagnoses to be made, which would provide more information about the rates of mental health diagnoses in this population.

The measurement of stressful life events also could be improved. In this study, a measure was used from a different research group, and a number of items were removed because they did not apply to this particular sample. Unfortunately, this is the way these measures are often used, making it difficult to generalize across studies. The measure in the current study was also used in

analyses by summing all endorsed items. Therefore, all stressful events were treated equally, ranging from relatively minor stressors such as getting married, starting a new relationship, and ending a relationship with a friend to more severe events such as being assaulted and/or robbed, losing a home, and grieving the death of a loved one. As a result, the scores on this stressful life events measure only provided a rough estimate of one's exposure to major stressful events outside of the workplace. Future studies should continue to include personal stressors as a variable in this type of research, but researchers should likely use a different method for measuring these problems other than the measure used in this study.

The reliance on a new measure of workplace stress, which did not have established reliability or validity data prior to the study, is also an important weakness to consider. This study was intended to explore the usefulness of this measure for use in child care work. Based on the analysis of the structure and reliability, the CCCWES was able to be used successfully for the purposes of this study. However, the CCCWES is in need of further validation prior to its use in any other study. The factor structure needs to be replicated with another sample of child care professionals; ideally, this sample would be larger and include other measures of worker stress in order to establish its reliability and validity.

The sample size is another noteworthy disadvantage of this study. A large number of hierarchical multiple regression analyses were conducted with the sample that used several variables in each. Recommendations vary for the minimum sample size for complex multiple regressions. The sample size in this study used a guideline of 5 to 10 participants per variable, as recommended by Loehlin (2004). However, other recommendations are more conservative, with one being a minimum of 104 participants added to the number of predictor variables used in analyses (Tabachnick & Fidell, 2001). The sample size of 101 participants falls slightly below

this more conservative recommendation. The size might have limited the power of the statistical analyses; with a larger sample, clearer relationships among the predictor variables could emerge. The number of centers in the study was also too low to use nested design analyses. Small numbers of groups are not recommended for hierarchical linear modeling analyses (Maas & Hox, 2005; Shih, 2008). Because only 14 centers were included in the sample, some planned analyses of employee and center variables could not be completed.

Another limitation is the fact that between 4 and 12 participants were recruited from each center, potentially limiting the variation of workplace factors. However, it is important to note that just because two child care employees worked at the same center, they did not necessarily have the same subjective experiences at that center. For example, employees at the same center might work with two different age groups, and in larger centers, could have different direct supervisors. Of course, each employee also brings his or her own personal background to work, including factors such as recent stressful life events, a history of Major Depressive Disorder or an anxiety disorder, and different levels of education. In the current study, it was sometimes quite surprising to see the discrepancies in employee responses from the same centers or even sometimes the same classrooms. These included responses to questions such as income, hours worked, class ratios, and the amount of training hours required at hire. For example, at one center, one employee reported that no training was required, two people reported 12 hours, one person reported 24 hours, and one individual reported 80 hours.

The type of child care facility included in the study was limited to child care centers, as the study focused on organizational factors that are not present in home-based care. This unfortunately did not allow for the comparison of home and center-based child care providers, who may differ in their experiences and perceptions of their daily responsibilities and work

stressors. Future studies could include home-based care providers as well in order to explore differences between these groups.

Another weakness is the possibility of recruitment effects influencing the study. Center administrators who are overwhelmed or who have poor management styles might have declined to participate. Similarly, center employees could have self-selected into the study for various personal reasons. Those who are more stressed at work might not have wanted to participate in the study; conversely, some individuals who had significant work or family stress could have been more interested in the study because it fit their interests. The incentive of a $10 gift card also could have been more appealing to individuals who were facing significant financial stress than to those who felt more financially secure. Self-selection therefore could have affected the results in both directions, leading to a possible under- or over-representation of mental health symptoms in the sample.

The data collection procedure also could have limited the recruitment of participants. The researcher only visited each center once, which meant that only employees who were present at that day and time were able to participate. The site visits were generally either at lunch or during nap time and thusly were between the hours of 11:00 am to 4:00 pm. Therefore, part-time employees or those who worked either very early or late shifts were not able to participate. Every effort was made to offer the study to as many individuals as possible, and the researcher asked the center director which day and time would be most convenient for the largest amount of employees. However, it is still possible that individuals who worked more unusual hours were excluded from participation, and these employees could differ from those who work other shifts.

Another issue that might have affected recruitment is that the measures had to be completed in person at the employee's place of employment. Some center directors might have

refused to allow the researcher to come to their centers because of the inconvenience of having employees participate in a research study during the work day. This procedure also could have affected center workers' openness in responding to certain questions because they feared that their supervisor or colleagues could inadvertently see their answers, even though they were assured of confidentiality. Conducting the study at the employees' workplace also led to the risk that completed measures could be mistakenly left at the facility, potentially jeopardizing the job security or the relationships with coworkers or supervisors of an employee.

These recruitment problems could be significantly alleviated, if not eliminated, by using a web-based survey program. The use of an online survey could allow for a higher number of participants to be included, as it would be less time-consuming and more efficient than going on center visits. This format was considered for the present study, but it was decided that an online survey would make it difficult to obtain reliable information about the centers where the employees worked. There also was the concern that an online format would limit the availability of the study to employees who do not have access to a computer and/or an internet connection. Future studies, however, could utilize online methods as a way to collect information about the nature of stressful events in the workplace, assess the rate of mental health symptoms, or validate a measure for use with this population.

Another recruitment option would be to have a researcher leave a set of questionnaires at each center and ask the employees to return the measures by mail. This would eliminate the possibility that employees with limited resources (i.e., without a computer or internet access) would be excluded from participation. However, requiring the participants to return their measures would likely result in lost and/or incomplete forms. Employees who are stressed at home or at work or who suffer from significant depression, anxiety, or another disorder might be

especially likely not to return their forms. There also would be concerns about the confidentiality of the responses, as the employees could inadvertently leave the measures in a place where they would be seen by other employees, their bosses, or family members.

Suggestions for Future Research

Based on the results of this study, there are many future directions for research. The measure designed for the purpose of this study, the CCCWES, needs further investigation in order to establish its reliability and validity. Ideally, a validity study would compare it to existing measures of child care worker stress and/or perceptions of their work environments, such as the Child Care Worker Job Stress Inventory (Curbow et al., 2000), the Early Childhood Work Environment Survey (Jorde-Bloom, 1989), or the Maslach Burnout Inventory (Maslach & Jackson, 1986). Comparisons of employee responses to observational measures of quality such as the Observational Record of the Caregiving Environment (ORCE; NICHD ECCRN, 1996), the Early Care Environment Rating Scale (ECERS; Harms & Clifford, 1980), or the Infant/Toddler Environment Rating Scale (ITERS; Harms, Cryer, & Clifford, 1990) would also be useful in establishing the validity of the measure.

A larger number of participants in the sample is also needed to establish the factor structure of the CCCWES and to confirm the four subscales derived in the current study. As noted earlier, a validation study might be best performed with an online survey program, which would allow for a large amount of child care professionals from numerous centers to participate, preferably including employees of chain-based centers. It also will be important for future studies to recruit individuals from a wide range of centers. At least 20 to 30 centers would be needed in order to conduct a nested design using center and employee variables.

Another potential step for research in this area is to explore child care workers' stress levels using physiological measures in addition to symptom inventories and/or workplace questionnaires. Similar work has already been done in the Netherlands by De Schipper et al. (2009), who conducted cortisol testing of home- and center-based child care providers, and in research on the effects of child care on children (for a review, see Vermeer & van IJzendoorn, 2006).

Future research should also examine the effects of work-related stress and mental health symptoms in child care teachers on the children in their care. Research on cortisol testing on children in child care arrangements has shown that children typically have higher levels of cortisol while in care as compared to at other times. The reasons for this increased stress in children are still being explored. Having a depressed and/or anxious caregiver could be one potential factor, particularly in children who have a more difficult temperament or who are already prone to adjustment difficulties. Given that the health and safety of children is the top priority in child care, it is vital that research on the occupational stress and mental health of child care professionals is extended to exploring the potential detrimental effects on children. This can be done through a variety of methods, including observations of children, cortisol testing, and interviews or self-report measures completed with the children's parents.

More research is also needed to better understand the relationship among personal and workplace factors in predicting mental health symptoms in child care professionals. In particular, the effects of stressful events needs to be explored more. The measurement of stressful life events could certainly be improved upon as compared to the current study. Interviews or other stressful life events measures could be considered as ways of including this factor in research. Other methods, such as the use of daily logs or journals, also could be beneficial to exploring

stressful life events, particularly as this would allow for the effects of these events to be monitored over time.

Additional research on coping strategies used by child care professionals should also be conducted. Past studies, such as Fuqua and Couture's (1986) work on locus of control and burnout, are not recent. Other studies have had small samples and have relied on qualitative methods, such as the focus group study by Baumgartner et al. (2009). Based on the results of the current study and past research by this group, social support has been found to be a positive factor for child care workers. However, little is known about how individuals manage their stress when faced with the everyday hassles of child care work. Coping behaviors could be studied using observational techniques, interviews, checklists, daily logs, or a combination of these methods.

There also is need for a program of research to study ways to treat and prevent mental health problems and work-related stress in child care professionals. Ideally, the research would be conducted using a pre- and post-test design and would include measurements of the effects on both the workers and the children in their care. In addition, it would be best if the training program included a control group with randomly assigned participants to each group. To our knowledge, no training program designed for child care center employees has focused explicitly on reducing the likelihood of negative work-related outcomes such as burnout, stress reactions, or mental health symptoms. Instead, training initiatives have focused on leadership (Bloom & Sheerer, 1992), professional development (Campbell & Milbourne, 2005), or skills and competence (Kaplan & Conn, 1984).

In contrast to the paucity of research with child care workers, the prevention and reduction of stress, burnout, and mental health symptoms have received considerable attention in

the occupational health field with other professions. Stress reduction interventions have been researched in samples of elementary school teachers (Gold et al., 2010; Kaspereen, 2002; Long, 1988), social workers (Cohen & Gagin, 2005; Brinkborg, Michanek, Hesser, & Berglund, 2011), U.S. Marines (Stanley, Schaldach, Kiyonaga, & Jha, 2011), health care workers (Schenström, Rönnberg, & Bodlund, 2006; Galantino, Baine, Maguire, Szapary, & Farrar, 2005; Shapiro, Astin, Bishop, & Cordova, 2005), call center employees (Walach et al., 2007), insurance company employees (Wolever et al., 2012), and emergency services personnel (Kagan, Kagan, & Watson, 1995). These programs have been conducted with a wide range of sample sizes and have been completed in the U.S. and internationally. These results of these investigations reveal overall effectiveness of a range of intervention techniques for reducing burnout, feelings of stress, and mental health symptoms in the workplace. Many training programs employ a selection of cognitive-behavioral therapy techniques, although meditative approaches are also common, and trainings are often conducted in a group format. Some of the techniques that have been investigated include relaxation training, mindfulness, psychoeducation, problem-solving, and physical exercise (including yoga or other types of physical programs).

There are many potential avenues of research on intervention and training programs for child care center employees. A program could use an integration of several techniques, such as a combination of psychoeducation, skills training, and relaxation skills. Intervention programs that have shown success with other occupations, such as Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1990) or Acceptance and Commitment Therapy (ACT; Hayes, Luoma, Bond, Masuda, & Lillis, 2006), also could be explored with this population.

For pragmatic reasons, a training protocol should be completed as part of an in-service training for the center employees and administrators. In-service training would place the least

amount of burden upon child care center employees, as outside programs or educational courses might be less likely to be attended due to personal factors, such as lack of transportation and time constraints (Gable & Halliburton, 2003). In addition to having pre- and post-test measures, the training program should also be well-structured and focus on a select number of topics. In the meta-analysis of child care center training programs conducted by Fukkink and Lont (2007), structured programs with a focused curriculum showed the most positive outcomes. Outcome measures should include measures of depression (e.g., the CES-D or Beck Depression Inventory) and other disorders (e.g., the Brief Symptom Inventory, the State-Trait Anxiety Inventory), burnout (e.g., Maslach Burnout Inventory), and perceived stress levels (e.g., Occupational Stress Inventory, Satisfaction with Life Scale). Assuming it shows adequate reliability and validity in future studies, the CCCWES also would be a useful tool to evaluate child care professionals' perceptions of their work environments. Physiological measures of stress also would be a valuable avenue of research, such as examining sleep patterns and blood pressure readings (Wolever et al., 2012) or measuring cortisol levels (Galantino et al., 2005). The development and study of intervention programs could lead to positive changes in the child care field for employees, which would ideally also serve to improve the care of children at the centers.

Conclusions

Caring for very young children is undoubtedly an important job, and yet, child care professionals often receive little compensation or recognition for their work. This study places much-needed attention on this group. The results point to the importance of mental health in child care center employees and highlight some shared sources of stress for these individuals. The purpose of a study such as this is not to criticize child care professionals or those who own or operate child care centers. The purpose is also not to disparage parents who rely on child care

centers out of choice or necessity or to advocate that one parent should not work in order to remain home to care for very young children. Rather, the intention of the study was to advance the knowledge about child care professionals' work experiences, feelings toward the profession, and adverse mental and physical health reactions, in order to be able to make recommendations to improve the child care environment for both employees and children. This study was a positive step toward achieving these goals. It is hoped that through future work in this area, public policy and the actions of center owners and directors will work toward improving child care centers both as a workplace and as a program to advance the development of children.

Table 1

Child Care Center Employee Demographics

Variable	N (Total N = 101)	% of Sample
Gender		
Female	99	98.0
Male	2	2.0
Race/Ethnicity		
African American/Black	16	15.8
Caucasian/White	75	74.3
Hispanic/Latino	2	2.0
Arab American	4	4.0
Asian/Pacific Islander	1	1.0
Native American	2	2.0
Biracial/Multiracial	1	1.0
Relationship Status		
Single/Never Married/Living Alone	28	27.7
Married	53	52.5
Living with Significant Other	13	12.9
Divorced or Separated	6	5.9
Widowed	1	1.0
Have Own Children		
Yes	62	61.4
No	39	38.6

Table 2

Employee Participants' Education and Training

Variable	N (Total N = 101)	% of Sample
Highest Level of Education		
Some High School (No Diploma/G.E.D.)	3	3.0
High School Diploma/G.E.D.	12	11.9
Some College	22	21.8
Associate's Degree or Certificate	35	34.7
Bachelor's Degree	23	22.8
Some Graduate Coursework	2	2.0
Graduate Degree	4	4.0
Have Child Development Associate (CDA)		
Yes	20	19.8
No	81	80.2
Certified Teacher		
Yes (With Early Childhood Endorsement)	9	8.9
Yes (No Early Childhood Endorsement)	5	4.9
No	87	86.1
Training		
Unsure of number of training hours	40	39.6
Reported no training was required	25	24.8
Training Topics		
Policies and procedures of center	88	87.1
Mandatory reporting of abuse/neglect	73	72.3
Universal precautions	84	83.2
Child development	63	62.4
Workplace issues (e.g., employee conflict)	60	59.4
Other topic(s)	11	10.9

Table 3

Employee-reported Age Groups, Child-to-Staff Ratios, and Group Sizes

Variable	N (Total N = 101)	% of Sample
Age Group		
Infants (birth to 1 yr.)	29	28.7
Young toddlers (1-2 yrs.)	39	38.6
Older toddlers (2-3 yrs.)	48	57.5
Young pre-k (3-4 yrs.)	39	38.6
Older pre-k (4-5 yrs.)	36	35.6
Kindergarten/school-aged	13	12.9

Child-to-Staff Ratios and Reported Group Sizes

Variable	*M*	*Mdn*	Min	Max	SD
Child-to-Staff Ratio	6:1	4:1	2:1	18:1	3.11
Ave. Children in Class/Group	10.95	10	3	26	5.81

Table 4

Child Care Center Characteristics

#	Ctr. Type	Accred. Type	Ctr. Cap	Infants	5 y.o. and older	# of Rms	Turnover in Past year	Turnover by # of emp.	Tot. Emp	# of part.
1	Private	None	42	No	No	3	0	0%	10	4
2	Private	NAEYC	54	No	No	2	0	0%	9	6
3	Religious	None	60	Yes	No	6	1	4%	24	12
4	Private	Other	64	No	Yes	3	2	18%	11	9
5	Religious	None	70	Yes	Yes	3	3	50%	6	5
6	Private	NAEYC	80	No	No	3	1	9%	11	6
7	Private	None	83	Yes	Yes	5	2	22%	9	7
8	Private	None	86	Yes	Yes	9	1	10%	10	5
9	Religious	None	96	Yes	Yes	5	6	19%	31	7
10	Private	None	97	Yes	Yes	6	2	10%	20	12
11	Religious	Other	132	Yes	Yes	5	6	35%	17	4
12	Chain	Other	150	Yes	Yes	10	3	14%	22	6
13	Private	None	158	Yes	Yes	5	3	14%	21	8
14	Private	None	285	Yes	Yes	11	4	11%	35	11

Note. The centers are arranged in ascending order by center size.

Table 5

Demographics of Child Care Center Director Participants

Personal Characteristics	N (Total N = 14)	Percent of Sample
Gender		
Female	14	100.0
Male	0	0.0
Race/Ethnicity		
African American/Black	2	14.3
Caucasian/White	11	78.6
Arab American	1	7.1
Highest Level of Education		
Some College	1	7.1
Associate's Degree or Certificate	3	21.4
Bachelor's Degree	4	28.6
Some Graduate Coursework	2	14.3
Graduate Degree	4	28.6
Have Child Development Associate (CDA)		
Yes	2	14.3
No	12	85.7

Table 6

Employees' Job Experience, Weekly Hours, and Wages

Variable	*M*	*Mdn*	Min	Max	SD
Lifetime Child Care Experience	104 months (8.6 years)	87 months (7.3 years)	0.5 months (.04 years)	304 months (25.3 years)	74.2 months (6.2 years)
Previous Centers Worked	1.2	1.0	0	6.0	1.4
Length Current Position	57.5 months (4.8 years)	36 months (3 years)	0.5 months (.04 years)	304 months (25.3 years)	60.6 months (5.1 years)
Hours Worked Per Week	36.6	38.0	20.0	66.0	7.5
Hourly Wage	$10.87	$10.00	$7.60	$23.50	$2.93
Annual Wage	$19,958	$18,350	$4800	$47,000	$7376

Note. Many employees reported either hourly or annual wages, while some reported both. Annual wages were calculated based on hourly wages by multiplying the hourly wage by the amount of hours worked and then multiplied by 50 (the amount of weeks of the year minus two weeks to account for holidays and/or vacation time). Hourly wages were calculated by divided the annual wage by the number of hours worked and then by 50 for the number of weeks.

Table 7

Employee Health, Enjoyment of Work, and Intention to Stay in the Profession

Variable	N (Total N = 101)	% of Sample
Physical Health Problems		
Yes	12	11.9
No	88	87.1
Mental Health Problems		
Yes	4	4.0
No	96	95.0
History of on-the-job injury		
Yes	14	13.9
No	86	85.1
Enjoyment of Work		
Not at all	1	1.0
A little	3	3.0
Don't love it, but don't hate it	5	5.0
Quite a bit	31	30.7
Very much	60	59.4
Intention to Stay in Child Care Profession		
Intend to stay	70	69.3
Do not intend to stay	27	26.7
Unsure	3	3.0

Variable	*M*	*Mdn*	Min	Max	SD
Number of Missed Days in Last Year	4.9	3.0	0	40	6.1

Table 8

Bivariate Correlations for Employee Age, Education, Training, Work Experience, and Wages

Measure	2	3	4	5	6	7	8	9
1. Age	-.042	**.543**	.080	**.407**	.114	.246	.259	.100
2. Education		.017	.093	-.155	.108	**.499**	.259	.100
3. Lifetime experience			**.443**	**.593**	.040	**.369**	**.346**	-.155
4. Previous centers				-.121	-.084	.168	.104	-.204
5. Current job					.122	**.330**	**.310**	-.042
6. Hours/week						.160	**.620**	.013
7. Hourly wage							**.861**	.044
8. Annual wage								.107
9. Training hrs.								

Note. Boldface type indicates correlation is significant at the 0.01 level (2-tailed); underline indicates correlation is significant at the 0.05 level (2-tailed)

Table 9

Scores from the CES-D, BSI, Social Provisions Scale, and Life Stressors Form

Measure	*M*	*Mdn*	Min	Max	SD
CES-D	10.45	9	0	50	9.56
BSI Global Severity Index	50.05	50	33	72	11.09
BSI Depression Scale	48.67	42	42	71	8.56
BSI Anxiety Scale	48.25	45	38	75	10.69
BSI Somatization Scale	49.89	50	41	71	9.08
CCCWES Center Culture	26.20	26	11	47	8.09
CCCWES Work Strain	33.20	33	13	52	7.97
CCCWES Pride and Professionalism	33.67	35	14	40	4.52
CCCWES Burnout	13.11	13	6	25	4.12
Social Provisions Scale	84.70	96	57	96	8.58
Life Stressors Form	3.52	3	0	17	3.16

Table 10

Bivariate Correlations for CES-D and BSI Scores with Selected Employee Participant Variables

	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.CESD	**.720**	**.564**	**.511**	**.695**	**.380**	**.348**	-.195	.207	**.421**	**-.353**	**-.256**	-.011	.194	-.093
2. BSI Dep.		**.664**	**.511**	**.769**	**.397**	**.376**	-.127	.170	**.337**	**-.267**	.183	-.036	-.209	-.086
3. BSI Anxiety			**.687**	**.839**	**.426**	**.436**	-.134	.154	**.517**	**-.261**	-.255	.038	-.166	-.030
4. BSI Somatization				**.745**	**.306**	**.314**	-.035	.052	**.485**	-.241	-.152	-.007	-.039	.138
5. Global Severity Index					**.431**	**.417**	-.161	.133	**.514**	**-.347**	**-.304**	-.012	-.198	-.038
6. Center Culture						**.552**	**-.441**	**.495**	.251	**-.342**	.003	.063	-.027	-.197
7. Work Strain							**-.382**	**.553**	.201	-.142	.020	.101	-.028	-.055
8. Pride/Professionalism								**-.434**	.037	**.318**	.011	.048	.092	.150
9. Burnout									.025	-.109	.026	**.263**	-.009	**-.427**
10. Life Stressors										**-.267**	-.232	.031	-.056	.067
11. Social Support											.053	.155	.076	.005
12. Participant Age												-.042	.246	.246
13. Participant Educ.													**.499**	-.116
14. Hourly Wage														.219
15. Job Commit														

Note. Boldface type indicates correlation is significant at the 0.01 level (2-tailed); underline indicates correlation is significant at the 0.05 level (2-tailed); Job Commit refers person's self-reported commitment to the profession/intention to remain in child care work and was measured dichotomously (higher scores indicate person plans to remain in the profession).

Table 11

Hierarchical Regression Analyses for Center Culture, Work Strain, Burnout, and Life Stressors Predicting CES-D Scores

Analysis Step	R^2	ΔR^2	*p*	B	S.E. B	β	t	*p*
Step 1	.174							
Center Culture				.338	.136	.286	2.48	.015
Work Strain				.267	.144	.223	1.86	.066
Burnout				-.135	.267	-.058	-0.50	.616
Step 2	.277	.103	.001					
Life Stressors				1.02	.276	.337	3.70	.001
Step 1	.277							
Center Culture				.239	.124	.202	1.94	.057
Work Strain				.203	.124	.170	1.63	.106
Life Stressors				1.019	.271	.336	3.76	.001
Step 2	.277	.000	.947					
Burnout				.017	.255	.007	.067	.947
Step 1	.261							
Center Culture				.302	.123	.256	2.45	.016
Burnout				.166	.235	.071	0.71	.482
Life Stressors				1.076	.275	.355	3.91	.001
Step 2	.277	.016	.147					
Work Strain				.200	.136	.166	1.46	.147
Step 1	.253							
Work Strain				.285	.130	.237	2.20	.031
Burnout				.154	.246	.066	0.67	.533
Life Stressors				1.126	.273	.372	4.12	.001
Step 2	.277	.025	.074					
Center Culture				.236	.131	.200	1.81	.074
Final – all entered	.277							
Center Culture				.236	.131	.200	1.81	.074
Work Strain				.200	.136	.166	1.46	.147
Burnout				.017	.255	.007	0.07	.947
Life Stressors				1.022	.276	.337	3.70	.001

Table 12

Hierarchical Regression Analyses for Center Culture, Work Strain, Burnout, and Life Stressors Predicting BSI Depression Scale Scores

Analysis Step	R^2	ΔR^2	*p*	B	S.E. B	β	t	*p*
Step 1	.206							
Center Culture				.328	.119	.310	2.75	.007
Work Strain				.304	.126	.283	2.41	.018
Burnout				-.292	.235	-.140	-1.24	.217
Step 2	.252	.047	.016					
Life Stressors				.616	.251	.227	2.45	.016
Step 1	.247							
Center Culture				.236	.113	.223	2.08	.040
Work Strain				.220	.114	.205	1.93	.056
Life Stressors				.651	.248	.240	2.63	.010
Step 2	.252	.006	.390					
Burnout				-.200	.232	-.096	-.864	.390
Step 1	.218							
Center Culture				.353	.114	.334	3.11	.002
Burnout				-.005	.216	-.002	-0.02	.983
Life Stressors				.687	.253	.253	2.71	.008
Step 2	.252	.035	.037					
Work Strain				.263	.124	.245	2.12	.037
Step 1	.213							
Work Strain				.359	.119	.334	3.01	.003
Burnout				-.046	.226	-.022	-0.20	.840
Life Stressors				.734	.251	.271	2.93	.004
Step 2	.252	.039	.027					
Center Culture				.267	.119	.252	2.24	.027
Final – all entered	.252							
Center Culture				.267	.119	.252	2.24	.027
Work Strain				.263	.124	.245	2.12	.037
Burnout				-.200	.232	-.096	-0.86	.390
Life Stressors				.616	.251	.227	2.45	.016

Table 13

Hierarchical Regression Analyses for Center Culture, Work Strain, Burnout, and Life Stressors Predicting BSI Anxiety Scale Scores

Analysis Step	R^2	ΔR^2	*p*	B	S.E. B	β	t	*p*
Step 1	.269							
Center Culture				.431	.143	.326	3.01	.003
Work Strain				.501	.151	.374	3.32	.001
Burnout				-.557	.281	-.214	-1.98	.050
Step 2	.417	.147	.001					
Life Stressors				1.37	.277	.403	4.93	.001
Step 1	.405							
Center Culture				.241	.126	.183	1.92	.058
Work Strain				.335	.126	.250	2.66	.009
Life Stressors				1.437	.275	.421	5.19	.001
Step 2	.417	.012	.170					
Burnout				-.354	.256	-.136	-1.38	.170
Step 1	.362							
Center Culture				.431	.128	.326	3.36	.001
Burnout				-.048	.244	-.018	-0.19	.845
Life Stressors				1.477	.286	.436	5.17	.001
Step 2	.417	.055	.003					
Work Strain				.411	.137	.307	3.00	.003
Step 1	.386							
Work Strain				.517	.131	.386	3.94	.001
Burnout				-.183	.249	-.070	-0.73	.465
Life Stressors				1.496	.277	.442	5.41	.001
Step 2	.417	.031	.027					
Center Culture				.295	.131	.224	2.25	.027
Final – all entered	.417							
Center Culture				.295	.131	.224	2.25	.027
Work Strain				.411	.137	.307	3.00	.003
Burnout				-.354	.256	-.136	-1.38	.170
Life Stressors				1.365	.277	.403	4.93	.001

Table 14

Hierarchical Regression Analyses for Center Culture, Work Strain, Burnout, and Life Stressors Predicting BSI Somatization Scale Scores

Analysis Step	R^2	ΔR^2	*p*	B	S.E. B	β	t	*p*
Step 1	.163							
Center Culture				.289	.130	.258	2.23	.028
Work Strain				.350	.138	.307	2.54	.013
Burnout				-.541	.256	-.245	-2.12	.037
Step 2	.309	.146	.001					
Life Stressors				1.155	.256	.402	4.51	.001
Step 1	.291							
Center Culture				.118	.117	.105	1.01	.314
Work Strain				.194	.117	.171	1.66	.100
Life Stressors				1.220	.255	.424	4.79	.001
Step 2	.309	.018	.121					
Burnout				-.370	.236	-.168	-1.56	.121
Step 1	.275							
Center Culture				.265	.116	.236	2.28	.025
Burnout				-.166	.221	-.075	-0.75	.454
Life Stressors				1.229	.259	.427	4.75	.001
Step 2	.309	.034	.033					
Work Strain				.273	.127	.240	2.16	.033
Step 1	.294							
Work Strain				.336	.120	.295	2.81	.006
Burnout				-.268	.227	-.122	-1.82	.240
Life Stressors				1.23	.252	.428	4.89	.001
Step 2	.309	.015	.154					
Center Culture				.175	.121	.156	1.44	.154
Final – all entered	.309							
Center Culture				.175	.121	.156	1.44	.154
Work Strain				.273	.127	.240	2.16	.033
Burnout				-.370	.236	-.168	-1.56	.121
Life Stressors				1.155	.256	.402	4.51	.001

Table 15

Hierarchical Regression Analyses for Center Culture, Work Strain, Burnout, and Life Stressors Predicting BSI Global Severity Index Scores

Analysis Step	R^2	ΔR^2	*p*	B	S.E. B	β	t	*p*
Step 1	.268							
Center Culture				.484	.148	.353	3.26	.002
Work Strain				.492	.157	.354	3.13	.002
Burnout				-.638	.292	-.237	-2.19	.031
Step 2	.411	.143	.001					
Life Stressors				1.395	.289	.397	4.83	.001
Step 1	.395							
Center Culture				.279	.132	.204	2.12	.037
Work Strain				.308	.132	.221	2.33	.022
Life Stressors				1.470	.288	.418	5.11	.001
Step 2	.411	.016	.109					
Burnout				-.431	.267	-.160	-1.61	.109
Step 1	.363							
Center Culture				.477	.133	.348	3.59	.001
Burnout				-.133	.253	-.050	-0.53	.599
Life Stressors				1.50	.296	.428	5.07	.001
Step 2	.411	.048	.006					
Work Strain				.400	.143	.287	2.79	.006
Step 1	.372							
Work Strain				.524	.138	.377	3.80	.001
Burnout				-.231	.262	-.086	-0.88	.380
Life Stressors				1.548	.290	.440	5.33	.001
Step 2	.411	.039	.013					
Center Culture				.345	.137	.252	2.52	.013
Final – all entered	.411							
Center Culture				.345	.137	.252	2.52	.013
Work Strain				.400	.143	.287	2.79	.006
Burnout				-.431	.267	-.160	-1.62	.109
Life Stressors				1.395	.289	.397	4.83	.001

Table 16

Hierarchical Regression Analyses for Pride and Professionalism, Social Support, Employee Age, Education, and Wages Predicting CES-D Scores

Analysis Step	R^2	ΔR^2	*p*	B	S.E. B	β	t	*p*
Step 1	.181							
Pride/Prof.				-.201	.213	-.093	-0.95	.347
Social Support				-.351	.113	-.310	-3.11	.002
Age				-.195	.078	-.234	-2.49	.015
Education				.240	.728	.031	0.33	.743
Step 2	.202	.021	.124					
Hourly Wage				-.577	.371	-.175	-1.55	.124
Step 1	.192							
Pride/Prof.				-.179	.212	-.083	-0.85	.400
Social Support				-.341	.111	-.301	-3.07	.003
Age				-.172	.080	-.207	-2.14	.035
Hourly Wage				-.371	.319	-.112	-1.16	.248
Step 2	.202	.010	.282					
Education				.911	.842	.119	1.08	.282
Step 1	.169							
Pride/Prof.				-.157	.215	-.072	-.728	.468
Social Support				-.372	.114	-.328	-3.28	.001
Education				1.176	.843	.153	1.39	.166
Hourly Wage				-.788	.360	-.239	-2.19	.031
Step 2	.202	.033	.055					
Age				-.158	.081	-.189	-1.94	.055
Step 1	.114							
Pride/Prof.				-.378	.212	-.175	-1.78	.078
Age				-.175	.085	-.210	-2.06	.042
Education				.546	.874	.071	0.62	.534
Hourly Wage				-.533	.389	-.162	-1.37	.174
Step 2	.202	.088	.002					
Social Support				-.358	.112	-.315	-3.19	.002
Step 1	.196							
Social Support				-.386	.107	-.340	-3.61	.001
Age				-.155	.081	-.186	-1.91	.059
Education				.922	.840	.120	1.09	.275
Hourly Wage				-.601	.370	-.182	-1.63	.107

Step 2	.202	.006	.410					
Pride/Prof.				-.176	.212	-.081	-.828	.410
Final – all entered	.202							
Pride/Prof.				-.176	.212	-.081	-0.83	.410
Social Support				-.358	.112	-.315	-3.19	.002
Age				-.158	.081	-.189	-1.94	.055
Education				.911	.842	-.119	1.08	.282
Hourly Wage				-.577	.371	-.175	-1.55	.124

Table 17

Hierarchical Regression Analyses for Pride and Professionalism, Social Support, Employee Age, Education, and Wages Predicting BSI Depression Scale Scores

Analysis Step	R^2	ΔR^2	*p*	B	S.E. B	β	t	*p*
Step 1	.104							
Pride/Prof.				-.094	.199	-.049	-0.47	.638
Social Support				-.236	.105	-.234	-2.25	.027
Age				-.142	.073	-.191	-1.94	.055
Education				.146	.678	.021	0.22	.830
Step 2	.136	.033	.064					
Hourly Wage				-.644	.344	-.219	-1.87	.064
Step 1	.124							
Pride/Prof.				-.069	.197	-.036	-0.35	.727
Social Support				-.227	.103	-.225	-2.20	.030
Age				-.114	.074	-.154	-1.54	.127
Hourly Wage				-.441	.296	-.150	-1.49	.139
Step 2	.136	.012	.254					
Education				.895	.780	.131	1.15	.254
Step 1	.120							
Pride/Prof.				-.053	.197	-.027	-0.27	.789
Social Support				-.253	.104	-.250	-2.43	.017
Education				1.064	.773	.156	1.38	.172
Hourly Wage				-.777	.330	-.265	-2.35	.021
Step 2	.136	.017	.185					
Age				-.101	.075	-.135	-1.34	.185
Step 1	.085							
Pride/Prof.				-.203	.192	-.105	-1.06	.293
Age				-.112	.077	-.151	-1.46	.148
Education				.647	.791	.095	0.82	.416
Hourly Wage				-.613	.352	-.209	-1.74	.085
Step 2	.136	.052	.021					
Social Support				-.243	.104	-.241	-2.34	.021
Step 1	.135							
Social Support				-.254	.099	-.251	-2.57	.012
Age				-.099	.075	-.134	-1.33	.187
Education				.899	.776	.132	1.16	.249
Hourly Wage				-.652	.341	-.222	-1.91	.059

Step 2	.136	.001	.741					
Pride/Prof.				-.065	.196	-.034	-.331	.741
Final – all entered	.136							
Pride/Prof.				-.065	.196	-.034	-0.33	.741
Social Support				-.243	.104	-.241	-2.34	.021
Age				-.101	.075	-.135	-1.34	.185
Education				.895	.780	.131	1.15	.254
Hourly Wage				-.644	.344	-.219	-1.87	.064

Table 18

Hierarchical Regression Analyses for Pride and Professionalism, Social Support, Employee Age, Education, and Wages Predicting BSI Anxiety Scale Scores

Analysis Step	R^2	ΔR^2	*p*	B	S.E. B	β	t	*p*
Step 1	.124							
Pride/Prof.				-.146	.244	-.061	-0.59	.551
Social Support				-.273	.130	-.217	-2.11	.038
Age				-.225	.090	-.243	-2.50	.014
Education				.674	.835	.079	0.81	.422
Step 2	.146	.022	.124					
Hourly Wage				-.662	.446	-.181	-1.55	.124
Step 1	.125							
Pride/Prof.				-.123	.245	-.051	-0.50	.618
Social Support				-.254	.128	-.202	-1.98	.050
Age				-.205	.093	-.222	-2.21	.029
Hourly Wage				-.334	.368	-.091	-0.91	.365
Step 2	.146	.021	.138					
Education				1.44	.966	.170	1.49	.138
Step 1	.111							
Pride/Prof.				-.095	.247	-.039	-0.38	.702
Social Support				-.297	.130	-.236	-2.28	.025
Education				1.750	.967	.206	1.81	.074
Hourly Wage				-.905	.414	-.247	-2.19	.031
Step 2	.146	.036	.053					
Age				-.182	.093	-.197	-1.96	.053
Step 1	.102							
Pride/Prof.				-.276	.237	-.115	-1.16	.248
Age				-.196	.095	-.212	-2.06	.042
Education				1.158	.976	.136	1.19	.239
Hourly Wage				-.627	.434	-.171	-1.44	.152
Step 2	.146	.044	.032					
Social Support				-.281	.129	-.223	-2.18	.032
Step 1	.144							
Social Support				-.299	.122	-.238	-2.45	.016
Age				-.180	.093	-.195	-1.95	.055
Education				1.452	.962	.171	1.51	.135

Hourly Wage				-.678	.423	-.185	-1.60	.113
Step 2	.146	.002	.633					
Pride/Prof.				-.117	.243	-.049	-0.48	.633
Final – all entered	.146							
Pride/Prof.				-.117	.243	-.049	-0.48	.633
Social Support				-.281	.129	-.223	-2.18	.032
Age				-.182	.093	-.197	-1.96	.053
Education				1.444	.966	.170	1.49	.138
Hourly Wage				-.662	.426	-.181	-1.55	.124

Table 19

Hierarchical Regression Analyses for Pride and Professionalism, Social Support, Employee Age, Education, and Wages Predicting BSI Somatization Scale Scores

Analysis Step	R^2	ΔR^2	*p*	B	S.E. B	β	t	*p*
Step 1	.077							
Pride/Prof.				.092	.215	.045	0.43	.671
Social Support				-.259	.114	-.240	-2.27	.026
Age				-.116	.079	-.147	-1.47	.145
Education				.267	.735	.037	0.36	.717
Step 2	.077	.000	.933					
Hourly Wage				-.032	.380	-.010	-0.08	.933
Step 1	.076							
Pride/Prof.				.092	.216	.045	0.43	.672
Social Support				-.254	.113	-.235	-2.24	.027
Age				-.119	.082	.150	-1.46	.148
Hourly Wage				.037	.324	.012	0.11	.909
Step 2	.077	.001	.724					
Education				.305	.861	.042	0.35	.724
Step 1	.058							
Pride/Prof.				.107	.218	.052	0.49	.625
Social Support				-.269	.115	-.250	-2.34	.021
Education				.496	.853	.068	0.58	.562
Hourly Wage				-.184	.365	-.059	-0.51	.615
Step 2	.077	.019	.172					
Age				-.114	.083	-.144	-1.38	.172
Step 1	.026							
Pride/Prof.				-.054	.211	-.026	-0.25	.800
Age				-.127	.085	-.160	-1.49	.139
Education				.040	.871	.006	0.05	.963
Hourly Wage				.000	.388	.000	0.00	1.000
Step 2	.077	.051	.026					
Social Support				-.259	.115	-.240	-2.26	.026
Step 1	.076							
Social Support				-.244	.109	-.227	-2.24	.027
Age				-.116	.083	-.146	-1.40	.164
Education				.299	.857	.041	0.35	.728

Hourly Wage				-.019	.377	-.006	-0.05	.959
Step 2	.077	.002	.669					
Pride/Prof.				.093	.217	.045	0.43	.669
Final – all entered	.077							
Pride/Prof.				.093	.217	-.045	0.43	.669
Social Support				-.114	.083	-.144	-2.26	.026
Age				.305	.861	.042	-1.38	.172
Education				-.031	.380	-.10	0.35	.724
Hourly Wage							-0.08	.933

Table 20

Hierarchical Regression Analyses for Pride and Professionalism, Social Support, Employee Age, Education, and Wages Predicting Global Severity Index Scores

Analysis Step	R^2	ΔR^2	*p*	B	S.E. B	β	t	*p*
Step 1	.213							
Pride/Prof.				-.169	.242	-.068	-0.70	.485
Social Support				-.404	.128	-.308	-3.15	.002
Age				-.296	.089	-.307	-3.33	.001
Education				.492	.826	.056	0.59	.552
Step 2	.234	.021	.113					
Hourly Wage				-.673	.421	-.176	-1.59	.113
Step 1	.219							
Pride/Prof.				-.145	.241	-.058	-0.59	.551
Social Support				-.388	.126	-.296	-3.07	.003
Age				-.273	.091	-.283	-2.99	.004
Hourly Wage				-.384	.363	-.101	-1.06	.292
Step 2	.234	.015	.184					
Education				1.276	.954	.144	1.34	.184
Step 1	.171							
Pride/Prof.				-.109	.249	-.044	-0.44	.662
Social Support				-.434	.131	-.331	-3.31	.001
Education				1.700	.974	.192	1.75	.084
Hourly Wage				-1.010	.417	-.265	-2.43	.017
Step 2	.234	.063	.007					
Age				-.253	.092	-.262	-2.75	.007
Step 1	.147							
Pride/Prof.				-.372	.241	-.149	-1.55	.126
Age				-.272	.096	-.283	-2.82	.006
Education				.856	.992	.097	0.86	.390
Hourly Wage				-.622	.441	-.163	-1.41	.162
Step 2	.234	.087	.002					
Social Support				-.411	.127	-.313	-3.24	.002
Step 1	.231							
Social Support				-.433	.121	-.330	-3.59	.001
Age				-.250	.092	-.260	-2.73	.008
Education				1.285	.951	.145	1.35	.180

Hourly Wage				-.692	.418	-.181	-1.66	.101
Step 2	.234	.003	.564					
Pride/Prof.				-.139	.240	-.056	-0.58	.564
Final – all entered	.234							
Pride/Prof.				-.139	.240	-.056	-0.58	.564
Social Support				-.411	.127	-.313	-3.24	.002
Age				-.253	.092	-.262	-2.75	.007
Education				1.276	.954	.144	1.34	.184
Hourly Wage				-.673	.421	-.176	-1.59	.113

Table 21

Hierarchical Regression Analyses for Center Culture, Work Strain, Life Stressors, Social Support, and Employee Age Predicting CES-D Scores

Analysis Step	R^2	ΔR^2	*p*	B	S.E. B	β	t	*p*
Step 1	.277							
Center Culture				.239	.124	.202	1.92	.057
Work Strain				.203	.124	.170	1.63	.106
Life Stressors				1.019	.271	.336	3.76	.001
Step 2	.312	.034	.031					
Social Support				-.225	.103	-.202	-2.19	.031
Step 1	.277							
Center Culture				.239	.124	.202	1.92	.057
Work Strain				.203	.124	.170	1.63	.106
Life Stressors				1.019	.271	.336	3.76	.001
Step 2	.313	.035	.029					
Age				-.160	.072	-.193	-2.22	.029
Final – all entered	.346							
Center Culture				.167	.125	.142	1.34	.183
Work Strain				.235	.120	.196	1.96	.053
Life Stressors				.751	.274	.248	2.74	.007
Social Support				-.224	.101	-.201	-2.22	.029
Age				-.159	.071	-.192	-2.25	.027

Table 22

Hierarchical Regression Analyses for Center Culture, Work Strain, Life Stressors, Social Support, and Employee Age Predicting BSI Depression Scale Scores

Analysis Step	R^2	ΔR^2	*p*	B	S.E. B	β	t	*p*
Step 1	.247							
Center Culture				.236	.113	.223	2.08	.040
Work Strain				.220	.114	.205	1.93	.056
Life Stressors				.651	.248	.240	2.63	.010
Step 2	.258	.011	.232					
Social Support				-.115	.095	-.115	-1.20	.232
Step 1	.247							
Center Culture				.236	.113	.223	2.08	.040
Work Strain				.220	.114	.205	1.93	.056
Life Stressors				.651	.248	.240	2.63	.010
Step 2	.265	.018	.124					
Age				-.103	.067	-.140	-1.55	.124
Final – all entered	.276							
Center Culture				.201	.118	.190	1.71	.090
Work Strain				.238	.113	.221	2.10	.038
Life Stressors				.494	.258	.182	1.92	.058
Social Support				-.114	.095	-.114	-1.20	.233
Age				-.103	.066	-.139	-1.55	.125

Table 23

Hierarchical Regression Analyses for Center Culture, Work Strain, Life Stressors, Social Support, and Employee Age Predicting BSI Anxiety Scale Scores

Analysis Step	R^2	ΔR^2	*p*	B	S.E. B	β	t	*p*
Step 1	.405							
Center Culture				.241	.126	.183	1.92	.058
Work Strain				.335	.126	.250	2.66	.009
Life Stressors				1.427	.275	.421	5.19	.001
Step 2	.408	.003	.483					
Social Support				-.075	.106	-.060	-.704	.483
Step 1	.405							
Center Culture				.241	.126	.183	1.92	.058
Work Strain				.335	.126	.250	2.66	.009
Life Stressors				1.427	.275	.421	5.19	.001
Step 2	.433	.028	.032					
Age				-.159	.073	-.173	-2.18	.032
Final – all entered	.436							
Center Culture				.224	.130	.169	1.73	.087
Work Strain				.353	.125	.264	2.83	.006
Life Stressors				1.240	.284	.366	4.36	.001
Social Support				-.073	.104	-.059	-0.70	.484
Age				-.159	.073	-.172	-2.17	.033

Table 24

Hierarchical Regression Analyses for Center Culture, Work Strain, Life Stressors, Social Support, and Employee Age Predicting BSI Somatization Scale Scores

Analysis Step	R^2	ΔR^2	*p*	B	S.E. B	β	t	*p*
Step 1	.291							
Center Culture				.118	.117	.105	1.01	.314
Work Strain				.194	.117	.171	1.66	.100
Life Stressors				1.220	.255	.424	4.79	.001
Step 2	.297	.005	.393					
Social Support				-.085	.099	-.080	-0.86	.393
Step 1	.291							
Center Culture				.118	.117	.105	1.01	.314
Work Strain				.194	.117	.171	1.66	.100
Life Stressors				1.220	.255	.424	4.79	.001
Step 2	.295	.003	.495					
Age				-.047	.069	-.061	-.685	.495
Final – all entered	.300							
Center Culture				.091	.123	.081	0.74	.462
Work Strain				.205	.118	.180	1.74	.085
Life Stressors				1.131	.269	.393	4.20	.001
Social Support				-.084	.099	-.080	-0.85	.397
Age				-.047	.069	-.060	-0.68	.499

Table 25

Hierarchical Regression Analyses for Center Culture, Work Strain, Life Stressors, Social Support, and Employee Age Predicting BSI Global Severity Index Scores

Analysis Step	R^2	ΔR^2	*p*	B	S.E. B	β	t	*p*
Step 1	.395							
Center Culture				.279	.132	.204	2.12	.037
Work Strain				.308	.132	.221	2.33	.022
Life Stressors				1.470	.288	.418	5.11	.001
Step 2	.416	.021	.063					
Social Support				-.206	.110	-.160	-0.16	.063
Step 1	.395							
Center Culture				.279	.132	.204	2.12	.037
Work Strain				.308	.132	.221	2.33	.022
Life Stressors				1.470	.288	.418	5.11	.001
Step 2	.443	.048	.005					
Age				-.216	.075	-.226	-2.87	.005
Final – all entered	.464							
Center Culture				.218	.131	.159	1.67	.099
Work Strain				.341	.126	.245	2.71	.008
Life Stressors				1.160	.288	.330	4.03	.001
Social Support				-.204	.106	-.158	-1.93	.056
Age				-.215	.074	-.225	-2.90	.005

Table 26

Bivariate Correlations with Center and Center Director Variables

Variable	2	3	4	5	6	7	8	9	10
1. Ctr capacity	**.707**	**.731**	-.128	.525	.067	-.274	.044	-.016	.079
2. Ctr employees		.616	.144	.572	-.171	.011	.140	.165	.215
3. # of rooms			-.445	.280	-.116	-.233	-.209	-.148	-.098
4. Ave kids per class				-.053	-.462	.329	.504	.382	.555
5. Total turnover					.604	.236	.056	.578	.426
6. Turnover %						.094	-.352	.343	.189
7. Director age							.037	**.832**	**.693**
8. Director education								.146	.134
9. Director work exp.									**.840**
10. Director job length									

Note. Boldface type indicates correlation is significant at the 0.01 level (2-tailed); underline indicates correlation is significant at the 0.05 level (2-tailed)

Table 27

Participant Means and Frequencies by Center for Select Employee Variables

#	Length of Job Mean	Hrs/Wk Mean	Hourly wage Mean	Center Culture Mean	Work Strain Mean	Pride/ Prof Mean	Burnout Mean	# of Part. Above Cutoffs
1	32.3	37.5	$8.00	27.3	42.3	32.8	10.8	1
2	78.2	33.6	$14.59	27.4	27.8	34.4	13.0	1
3	92.6	30.8	$10.54	31.5	33.8	33.1	11.8	5
4	92.2	36.8	$13.97	19.4	31.3	35.3	12.8	2
5	3.3	34.0	$8.40	21.4	31.6	35.6	12.2	1
6	32.7	40.7	$15.73	23.5	31.7	32.0	13.0	0
7	5.1	32.7	$8.87	17.9	28.3	34.9	10.6	0
8	115.5	39.6	$13.24	18.8	28.6	38.4	10.2	1
9	98.1	34.0	$10.61	28.7	32.1	34.1	15.1	2
10	26.1	36.5	$10.51	28.6	36.3	32.8	12.0	3
11	147.0	39.8	$8.70	30.5	35.0	26.5	17.5	2
12	33.0	31.5	$9.37	32.2	39.5	32.2	16.7	2
13	20.4	38.5	$10.50	28.9	35.4	32.8	14.6	3
14	55.5	45.5	$9.38	26.4	31.6	34.8	14.4	3

Note. The centers are arranged in ascending order by center size; the length of job mean refers to the participants' current job and is presented in months; the number of participants above the cutoffs refers to the number of participants at each center that scored above any of the cutoff scores signifying clinically important levels on the CES-D or BSI scales.

Table 28

Bivariate Correlations of Select Participant Variables with Center Capacity, Total Number of Employees at Center, and Annual Turnover Number and Percentage

Variable	Center Capacity	Total # of Employees	Turnover #	Turnover %
CES-D	.072	.143	.000	-.121
BSI Depression	-.003	.084	.031	-.003
BSI Anxiety	.081	.191	.045	-.084
BSI Somatization	.058	.114	-.001	-.049
BSI GSI	.000	.144	-.017	-.100
Negative Center Culture	.098	**.339**	.108	<u>-.199</u>
Work Strain	.012	.091	.014	-.078
Pride/Professionalism	-.007	-.063	-.119	-.016
Burnout	<u>.240</u>	<u>.229</u>	**.341**	.107
Life Stressors Form	.061	.067	-.008	-.012
SPS Global Support	.141	-.012	.124	.083
Employee Education	.049	-.043	-.076	-.124
Hourly wage	<u>-.254</u>	<u>-.251</u>	**-.317**	**-.265**

Note. Boldface type indicates correlation is significant at the 0.01 level (2-tailed); underline indicates correlation is significant at the 0.05 level (2-tailed)

Table 29

Bivariate Correlations of Mean Participant Scores on the CCCWES, Mean Hourly Wages, and Center Variables

Variable	Center Capacity	Total # of Employees	Turnover #	Turnover %
Negative Center Culture Mean	.251	.595	.280	-.248
Work Strain Mean	.055	.203	.042	-.158
Pride/Professionalism Mean	-.124	.179	-.405	-.137
Burnout Mean	.527	.515	**.744**	.274
Hourly Wage Mean	-.279	-.255	-.416	-.403

Note. Boldface type indicates correlation is significant at the 0.01 level (2-tailed); underline indicates correlation is significant at the 0.05 level (2-tailed)

APPENDIX A

DETERMINATION OF SAMPLE SIZE

Prior to data collection, it was decided that there would be at least 100 child care center employee participants. This sample size was determined through multiple factors. The results of a similar survey of child care workers indicated that 27% of individuals reported a significant level of depressive symptoms on the CES-D and the SCL-90 (Fish et al., 2005). Based on this expected proportion of 27% to the population estimate of 11.5% (i.e., a conservative estimate of the rate of women in the community who are depressed), the minimum number of participants needed was determined to be 40 (with $p = 0.05$ and alpha = 0.80). However, based on the large number of variables in the study, many of which were to be examined through multiple regression models, it was determined that 40 was an insufficient number of participants.

Loehlin (2004) recommends 5 to 10 participants per variable in complex multiple regression models. The hypotheses of the present study included 19 variables of interest (although it was not intended that any one analysis would include this many variables). There were five dependent variables (CES-D score and four BSI scales). The Child Care Center Worker Scale has seven proposed scales, which were intended originally to be examined separately in a number of analyses. Workers' perceived social support was planned to be assessed with the Global Social Support from the SPS. Outside of work stress levels were measured using a total score from the abbreviated version of the Life Stressors Form. From the employees' demographic information, the variables of age, education, and training were of interest. Finally, there were two major variables of interest from center directors, which were the annual employee turnover rates and type of center. Using an estimate of five participants per

variable, the minimum number of participants was deemed to be 95. Due to potential problems with data or other issues, the goal number of participants was set at 100.

APPENDIX B

INSTRUMENTS

CHILD CARE CENTER EMPLOYEE PARTICIPANT INFORMATION

Please answer the following questions. All information will be kept confidential.

Part 1: Personal Characteristics

1. Age: _____

2. Gender: □ Male □ Female

3. Race/Ethnicity:

□ African American/Black □ Caucasian/White

□ Hispanic/Latino □ Arab American

□ Native American □ Asian/Pacific Islander

□ Biracial/multiracial (Please describe_____)

□ Other (Please describe_____)

4. Relationship Status:

□ Single/Never Married/Living alone (not with significant other)

□ Married

□ Living with significant other

□ Divorced or Separated

□ Widowed

□ Other _____

5. Do you have any children? □ Yes □ No

6. If yes – how many? _____

What are their ages? _____

7. Highest Level of Education: Please mark only one of the following

- ☐ Some high school
- ☐ High school diploma or G.E.D.
- ☐ Some college (no degree or certificate earned)
- ☐ Associate's Degree or Certificate
- ☐ Bachelor's Degree
- ☐ Some graduate coursework
- ☐ Graduate Degree

8. Do you have a Child Development Associate (CDA) certificate? ☐ Yes ☐ No

9. Are you a certified teacher? ☐ Yes ☐ No

10. If yes, do you have the Early Childhood Endorsement? ☐ Yes ☐ No

Part 2: Child Care Experience

11. Total length of time spent as a child care worker/teacher in your lifetime:_____
(years, months)

12. How many other child care centers have you worked at (besides current job)?
_____

Please think of your current job as a child care worker or teacher and answer the following questions:

13. Length of time of this job: _____

14. How many hours per week do you work at this job? _____

15. Current wage: hourly _____ **weekly**_____ **annually**
_____

16. How many children at a time are you teaching/caring for on average?_____

17. What is the maximum number of children you are teaching/caring for at one time?
_____

18. What is the average child to adult ratio present at your facility? __children to __adults

19. How old are the children who you care for? Check as many as apply.

- ☐ birth to 1 year old
- ☐ 1-2 years old
- ☐ 2-3 years old
- ☐ 3-4 years old

□ 4-5 years old □ 5-6 years old

20. When you were hired for your current position, how many hours of training were you required to attend? Number of hours_____ □ Not sure □ No training was required

21. What kinds of topics were covered in your initial training/orientation? Check as many as apply.

□ Explanation of policies and procedures of center

□ DHS mandatory reporting of abuse and neglect

□ Universal precautions (i.e., hand washing, avoiding contact with bodily fluids)

□ Child development

□ Workplace issues (e.g., employee conflict)

□ Other Please describe:_____

22. Within the past year, how many days have you missed work? _____

23. In general, how much do you enjoy your work?

□ Not at all

□ A little

□ Don't love it, but don't hate it

□ Quite a bit

□ Very much

24. Is being a child care provider your career? □ Yes □ No

If not, what are your future plans?_____

<u>Part 3: Health and Mental Health</u>

25. Do you have any physical health problems that make it more difficult for you to fulfill your job responsibilities? □ Yes

□ No

If yes, please describe:

26. Have you ever had any on-the-job injuries as a child care worker (including past or present employment)? ☐ Yes ☐ No

If yes, please describe:

27. Do you currently have health insurance? ☐ Yes ☐ No

28. If yes, do you receive your health benefits through your current employer? ☐ Yes ☐ No

29. Do you have any mental health problems that make it more difficult for you to fulfill your job responsibilities? ☐ Yes ☐ No

If yes, please describe:

CENTER INFORMATION QUESTIONNAIRE

Center directors: Please provide the following personal details about yourself and then answer the questions about this center.

Part 1: Personal Characteristics

1. Age: _____

2. Gender: □ Male □ Female

3. Race/Ethnicity:

□ African American/Black □ Caucasian/White

□ Hispanic/Latino □ Arab American

□ Native American □ Asian/Pacific Islander

□ Biracial/multiracial (Please describe_____)

□ Other (Please describe_____)

4. Highest Level of Education: Please mark only one of the following:

□ Some high school □ High school diploma or G.E.D.

□ Some college (no degree or certificate earned) □ Associate's Degree or Certificate

□ Bachelor's Degree □ Some graduate coursework

□ Graduate Degree

5. Do you have a Child Development Associate (CDA) Certificate? □ Yes □ No

6. Total length of time spent as a child care worker/teacher in your lifetime: _____ (years, months)

7. Length of time of current position: _____ (years, months)

Part 2: Center Characteristics

8. In total, how many employees work at this center? _____

9. How many employees are you responsible for supervising on a daily basis?

_____

10. How many classrooms are there in your center? _____

11. On average, how many children are in each classroom? _____

12. How old are the children who you care for? Check as many as apply.

□ birth to 1 year old □ 1-2 years old

□ 2-3 years old □ 3-4 years old

□ 4-5 years old □ 5-6 years old

13. Is your current place of employment a church affiliated program? □ Yes □ No

14. Is the center part of a chain of child care centers? □ Yes □ No

□ Don't know

15. Is this center accredited? □ Yes □ No

16. If yes, list the accreditation type or organization :_____

17. Within the past year, how many employees left this center? _____

Check this box if no workers left within the past year □

18. Which reasons best explain why employees left the center within the past year? (Check as many as apply)

□ Were fired/let go due to performance reasons

□ Left to work at different center

□ Left the child care field

□ Returned to college

□ Family/personal reasons

□ Moved out of the area

□ Didn't disclose/unclear

□ Other Please describe:_____

CHILD CARE WORKER STRESS
(LABELED "HOW I THINK AND FEEL- WORK 1")

Working in child care centers can be stressful. We are interested in learning about the different experiences that are most stressful for child care center employees.

In the space below, please list five different stressful events or experiences you have personally had at your job:

1._____

_____

2._____

_____

3._____

_____

4._____

_____

5._____

_____

Out of the five experiences you listed above, which of them is the most stressful for you? **Circle** the number of the item that you perceive as the most stressful for you.

On a scale of 0 to 100, list how much stress you feel when this event occurs: _____
(Note: 0 indicates no stress and 100 indicates extremely high level of stress)

How often does this stressful event occur? Please check one box below.

❑ Rarely (one or two times a year)
❑ Monthly (once a month)
❑ Weekly (at least once per week)
❑ Daily (at least once per day)

CHILD CARE CENTER WORK ENVIRONMENT SCALE (CCCWES) (LABELED "HOW I THINK AND FEEL- WORK2")

This scale includes a number of items that ask about your attitudes, experiences, and opinions about working as a child care professional. Please read each item carefully and circle the appropriate response next to each item. Use the following scale to record your responses:

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

1. Child care work is an important field in our society.	**1**	**2**	**3**	**4**	**5**
2. My supervisor encourages me to do my job well.	**1**	**2**	**3**	**4**	**5**
3. The children in my class fight with each other.	**1**	**2**	**3**	**4**	**5**
4. Parents do not seem to understand how much work I do.	**1**	**2**	**3**	**4**	**5**
5. There is more work to do in a single day than I could ever get done.	**1**	**2**	**3**	**4**	**5**
6. I can count on my co-workers to help me out.	**1**	**2**	**3**	**4**	**5**
7. I do more than is required in my job description.	**1**	**2**	**3**	**4**	**5**
8. Parents like to tell me how to do my job.	**1**	**2**	**3**	**4**	**5**
9. The children at the child care center do not respect me.	**1**	**2**	**3**	**4**	**5**
10. I do not intend to stay at my current job for very long.	**1**	**2**	**3**	**4**	**5**
11. All staff at my center are treated fairly.	**1**	**2**	**3**	**4**	**5**
12. Parents tend to forget to bring in essential items, such as a change of clothes or diapers.	**1**	**2**	**3**	**4**	**5**
13. The children in my classroom do not follow my directions.	**1**	**2**	**3**	**4**	**5**
14. I feel more stressed than usual since I have taken this job.	**1**	**2**	**3**	**4**	**5**
15. Parents often compliment me on my work.	**1**	**2**	**3**	**4**	**5**
16. Working with children is the best part of my job.	**1**	**2**	**3**	**4**	**5**
17. I am proud to be a child care professional.	**1**	**2**	**3**	**4**	**5**
18. If I were in charge at this center, I would do things differently.	**1**	**2**	**3**	**4**	**5**
19. My supervisor values the work that I do.	**1**	**2**	**3**	**4**	**5**
20. I cannot trust the other people who I work with.	**1**	**2**	**3**	**4**	**5**
21. I have too much to do at one time in my classroom.	**1**	**2**	**3**	**4**	**5**

22. I am annoyed when parents are late picking up their children at the end of the day.	**1**	**2**	**3**	**4**	**5**
23. This is the hardest job that I have ever had.	**1**	**2**	**3**	**4**	**5**
24. Children in my classroom often break items, such as toys.	**1**	**2**	**3**	**4**	**5**
25. I have to work harder because others do not do enough of the work.	**1**	**2**	**3**	**4**	**5**
26. Many of the teachers at the center like to gossip.	**1**	**2**	**3**	**4**	**5**
27. I can really make a difference in children's lives through my work.	**1**	**2**	**3**	**4**	**5**
28. My center director encourages me to do my job well.	**1**	**2**	**3**	**4**	**5**
29. While at work, I feel as if I am being pulled in several directions at once.	**1**	**2**	**3**	**4**	**5**
30. Parents have made comments to me such as, "I wish I could stay here and play with you all day."	**1**	**2**	**3**	**4**	**5**
31. I am asked to do more work than my co-workers.	**1**	**2**	**3**	**4**	**5**
32. I cannot possibly watch all of the children who are assigned to me at one time.	**1**	**2**	**3**	**4**	**5**
33. Dealing with parents is the most frustrating part of my job.	**1**	**2**	**3**	**4**	**5**
34. The morale among the staff at my center is low.	**1**	**2**	**3**	**4**	**5**
35. I know what my supervisor expects of me.	**1**	**2**	**3**	**4**	**5**
36. I intend to continue working in child care for my career.	**1**	**2**	**3**	**4**	**5**
37. I disagree with certain policies at this center.	**1**	**2**	**3**	**4**	**5**
38. I have a great deal of freedom in deciding how to order my day.	**1**	**2**	**3**	**4**	**5**
39. My supervisor listens to any concerns I have about my job.	**1**	**2**	**3**	**4**	**5**
40. Parents have brought children to the center who are clearly too sick to be there.	**1**	**2**	**3**	**4**	**5**
41. The other teachers are easy to get along with.	**1**	**2**	**3**	**4**	**5**
42. I wish I would have chosen a different career path/line of work.	**1**	**2**	**3**	**4**	**5**
43. Too many rules and regulations interfere with my ability to take care of children.	**1**	**2**	**3**	**4**	**5**
44. My work is highly rewarding.	**1**	**2**	**3**	**4**	**5**
45. I have no say in the policies at this center.	**1**	**2**	**3**	**4**	**5**
46. Parents often complain about how I take care of their children.	**1**	**2**	**3**	**4**	**5**

47. Once I have finished soothing one child, I have to immediately deal with another child.	**1**	**2**	**3**	**4**	**5**
48. The center director is concerned with the welfare of the teachers and staff.	**1**	**2**	**3**	**4**	**5**
49. I have seen other teachers at the center treat children in ways that I do not approve of.	**1**	**2**	**3**	**4**	**5**
50. I have too much to do at one time.	**1**	**2**	**3**	**4**	**5**

CENTER FOR EPIDEMIOLOGIC STUDIES DEPRESSION SCALE (CES-D)
(LABELED "HOW I THINK AND FEEL- SELF1")

Using the scale below, please choose the number which best describes how often you felt or behaved this way DURING THE PAST WEEK.

0 = Rarely or none of the time	**1 = Some or a little of the time**
2 = A moderate amount of the time	**3 = Most or all of the time**

_____1. You were bothered by things that usually don't bother you.

_____2. You did not feel like eating; your appetite was poor.

_____3. You felt that you could not shake off the blues even with help from your family and friends.

_____4. You felt that you were just as good as other people.

_____5. You had trouble keeping your mind on what you were doing.

_____6. You felt depressed.

_____7. You felt that everything you did was an effort.

_____8. You felt hopeful about the future.

_____9. You thought your life had been a failure.

_____10. You felt fearful.

_____11. Your sleep was restless.

_____12. You were happy.

_____13. You talked less than usual.

_____14. You felt lonely.

_____15. People were unfriendly.

_____16. You enjoyed life.

_____17. You had crying spells.

_____18. You felt sad.

_____19. You felt that people disliked you.

_____20. You could not get "going."

BRIEF SYMPTOM INVENTORY (BSI)
(LABELED "HOW I THINK AND FEEL- SELF2")

Below is a list of problems and complaints that people sometimes have. Please circle the response that best tells how much discomfort that problem has caused you in the past TWO WEEKS. Please remember, you are to indicate how much the problem has bothered you in the last two weeks, not how often it has happened.

	Not at all	A little bit	Moderately	Quite a bit	Extremely
1. Nervousness or shakiness inside	**0**	**1**	**2**	**3**	**4**
2. Faintness of dizziness	**0**	**1**	**2**	**3**	**4**
3. The idea that someone else can control your thoughts	**0**	**1**	**2**	**3**	**4**
4. Feeling others are to blame for most of your troubles	**0**	**1**	**2**	**3**	**4**
5. Trouble remembering things	**0**	**1**	**2**	**3**	**4**
6. Feeling easily annoyed or irritated	**0**	**1**	**2**	**3**	**4**
7. Pains in your heart or chest	**0**	**1**	**2**	**3**	**4**
8. Feeling afraid in open spaces	**0**	**1**	**2**	**3**	**4**
9. Thoughts of ending your life	**0**	**1**	**2**	**3**	**4**
10. Feeling that most people cannot be trusted	**0**	**1**	**2**	**3**	**4**
11. Poor appetite	**0**	**1**	**2**	**3**	**4**
12. Suddenly scared for no reason	**0**	**1**	**2**	**3**	**4**
13. Temper outbursts that you could not control	**0**	**1**	**2**	**3**	**4**
14. Feeling lonely even when you are with other people	**0**	**1**	**2**	**3**	**4**
15. Feeling blocked in getting things done	**0**	**1**	**2**	**3**	**4**
16. Feeling lonely	**0**	**1**	**2**	**3**	**4**
17. Feeling blue	**0**	**1**	**2**	**3**	**4**
18. Feeling no interest in things	**0**	**1**	**2**	**3**	**4**
19. Feeling fearful	**0**	**1**	**2**	**3**	**4**
20. Your feelings being easily hurt	**0**	**1**	**2**	**3**	**4**

	Not at all	A little bit	Moderately	Quite a bit	Extremely
21. Feeling that people are unfriendly or dislike you	**0**	**1**	**2**	**3**	**4**
22. Feeling inferior to others	**0**	**1**	**2**	**3**	**4**
23. Nausea or upset stomach	**0**	**1**	**2**	**3**	**4**
24. Feeling that you are watched or talked about by others	**0**	**1**	**2**	**3**	**4**
25. Trouble falling asleep	**0**	**1**	**2**	**3**	**4**
26. Having to check and double check what you do	**0**	**1**	**2**	**3**	**4**
27. Difficulty making decisions	**0**	**1**	**2**	**3**	**4**
28. Feeling afraid to travel on buses, subways, or trains	**0**	**1**	**2**	**3**	**4**
29. Trouble getting your breath	**0**	**1**	**2**	**3**	**4**
30. Hot or cold spells	**0**	**1**	**2**	**3**	**4**
31. Having to avoid certain things, places, or activities because they frighten you	**0**	**1**	**2**	**3**	**4**
32. Your mind going blank	**0**	**1**	**2**	**3**	**4**
33. Numbness or tingling in parts of your body	**0**	**1**	**2**	**3**	**4**
34. The idea that you should be punished for your sins	**0**	**1**	**2**	**3**	**4**
35. Feeling hopeless about the future	**0**	**1**	**2**	**3**	**4**
36. Trouble concentrating	**0**	**1**	**2**	**3**	**4**
37. Feeling weak in parts of your body	**0**	**1**	**2**	**3**	**4**
38. Feeling tense or keyed up	**0**	**1**	**2**	**3**	**4**
39. Thoughts of death or dying	**0**	**1**	**2**	**3**	**4**
40. Having urges to beat, injure, or harm someone	**0**	**1**	**2**	**3**	**4**
41. Having urges to break or smash things	**0**	**1**	**2**	**3**	**4**
42. Feeling very self-conscious with others	**0**	**1**	**2**	**3**	**4**
43. Feeling uneasy in crowds	**0**	**1**	**2**	**3**	**4**
44. Never feeling close to another person	**0**	**1**	**2**	**3**	**4**

	Not at all	A little bit	Moderately	Quite a bit	Extremely
45. Spells of terror or panic	**0**	**1**	**2**	**3**	**4**
46. Getting into frequent arguments	**0**	**1**	**2**	**3**	**4**
47. Feeling nervous when you are left alone	**0**	**1**	**2**	**3**	**4**
48. Others not giving you proper credit for your achievements	**0**	**1**	**2**	**3**	**4**
49. Feeling so restless that you couldn't sit still	**0**	**1**	**2**	**3**	**4**
50. Feelings of worthlessness	**0**	**1**	**2**	**3**	**4**
51. Feeling that people will take advantage of you if you let them	**0**	**1**	**2**	**3**	**4**
52. Feelings of guilt	**0**	**1**	**2**	**3**	**4**
53. The idea that something is wrong with your mind	**0**	**1**	**2**	**3**	**4**

LIFE STRESSORS FORM (ABBREVIATED)
(LABELED "HOW I THINK AND FEEL- SELF3")

Instructions: Below is a list of experiences/feelings that you may or may not have had during the past six months and which you may have found stressful. Circle "Yes" or "No" to indicate whether you have experienced this event.

1. Relationship broke up	**Yes**	**No**
2. Married	**Yes**	**No**
3. Divorced	**Yes**	**No**
4. Relationship with spouse/partner worsened	**Yes**	**No**
5. Separated from spouse/partner	**Yes**	**No**
6. Infidelity	**Yes**	**No**
7. Trouble with in-laws	**Yes**	**No**
8. Ended relationship with a friend	**Yes**	**No**
9. Started work after not working for a long time	**Yes**	**No**
10. Child died	**Yes**	**No**
11. Spouse or partner died	**Yes**	**No**
12. Other family member died	**Yes**	**No**
13. Friend died	**Yes**	**No**
14. Spouse or partner had a serious health problem	**Yes**	**No**
15. Child had a serious health problem	**Yes**	**No**
16. Other family member had a serious health problem	**Yes**	**No**
17. Physical illness	**Yes**	**No**
18. Injury	**Yes**	**No**
19. Unable to get treatment for illness or injury	**Yes**	**No**
20. Drug or alcohol problem in the family	**Yes**	**No**
21. Changes in child care arrangement	**Yes**	**No**
22. Taking on full responsibility of being a single parent	**Yes**	**No**
23. Someone stayed on living in your house after he/she was expected to leave	**Yes**	**No**
24. Moved to a worse residence or neighborhood	**Yes**	**No**
25. Unable to move after expecting to move	**Yes**	**No**
26. Lost a home to fire, flood, or other disaster	**Yes**	**No**
27. Difficulty finding housing	**Yes**	**No**
28. Assaulted, robbed	**Yes**	**No**
29. Involved in a lawsuit	**Yes**	**No**
30. Took a cut in income	**Yes**	**No**
31. Went on welfare (public assistance)	**Yes**	**No**
32. Went off welfare (public assistance)	**Yes**	**No**
33. Decreased social/recreation activities	**Yes**	**No**
34. Started a new relationship	**Yes**	**No**
35. Your child was hospitalized	**Yes**	**No**
36. You were hospitalized	**Yes**	**No**

SOCIAL PROVISIONS SCALE (SPS)
(LABELED "HOW I THINK AND FEEL- SELF4")

Read each of the following items and decide which choice indicates how you feel. Then indicate the response that corresponds to your answer.

Please answer using the following response choices:
1= Strongly Disagree 2= Disagree 3= Agree 4= Strongly Agree

_____1. There are people I can depend on to help me if I really need it.

_____2. I feel I do not have close personal relationships with other people.

_____3. There is no one I can turn to for guidance in times of stress.

_____4. There are people who depend on me for help.

_____5. There are people who enjoy the same social activities as I do.

_____6. Other people do not view me as competent.

_____7. I feel personally responsible for the personal well-being of another person.

_____8. I feel part of a group of people who share my attitudes and beliefs.

_____9. I do not think other people respect my skills and abilities.

_____10. If something went wrong, no one would come to my assistance.

_____11. I have close relationships that provide me with a sense of emotional security and wellbeing.

_____12. There is someone I could talk to about important decisions in my life.

_____13. I have relationships where my competence and skills are recognized.

_____14. There is no one who shares my interests and concerns.

_____15. There is no one who really relies on me for their well-being.

_____16. There is a trustworthy person I could turn to for advice if I were having problems.

_____17. I feel a strong emotional bond with at least one other person.

_____18. There is no one I can depend on for aid if I really need it.

_____19. There is no one with whom I can feel comfortable talking about my problems.

_____20. There are people who admire my talents and abilities.

_____21. I feel a lack of intimacy with another person.

_____22. There is no one who likes to do the things I do.

_____23. There are people I can count on in an emergency.

_____24. No one needs me to care for them.

APPENDIX C

CODING CATEGORIES FOR OPEN-ENDED STRESS MEASURE RESPONSES

Category Name	Description/Inclusion Criteria
Problems with Parents	Complaints, unreasonable requests, demeaning comments (e.g., your job is easy); showing up late to pick up child; forgetting to bring in essential items; not complying with child care teacher or director requests; not caring for their children properly; not communicating with teacher or director
Child Behavior Problems	Children who are disruptive, aggressive, or violent; demand more attention than other children; are emotionally dysregulated or fussy; demonstrate a behavior disorder or symptoms of a behavior disorder such as ADHD or Oppositional Defiant Disorder
Toileting Issues	Children who are not toilet-trained, have accidents; changing diapers
Developmental Delays	Children who display symptoms of Autism/Autism Spectrum Disorder; children who lack communication/language skills; children who require special education services
Sick Children	Children who are brought to the center while ill or become ill during the day
Staffing and Ratio Issues	Not enough staff at certain times during a day; people calling in sick at the last minute; not being able to take breaks due to staff shortage; classroom or center is out of ratio; unable to get substitutes to fill in for absences
Time Management Issues	Not enough time during day; too many responsibilities and not enough time; too many things to do at once (e.g., multiple child issues happening simultaneously, needing to be in 2 places at once)
Problems with Colleagues	Conflict with a colleague or staff member; other person not pulling weight; having to do more work because others don't help; new staff who are inexperienced; substitute teachers who are unfamiliar with classroom/age group; other staff members being rude or unfriendly; staff who gossip
Problems with Director/Supervisor	Center director/supervisor(s)/other administrators are not supportive; make unreasonable requests; are unprofessional; do not listen to staff complaints; make poor decisions about the center
Lack of Materials and Resources	Center has inadequate materials or resources for classrooms and building; includes materials that are outdated, broken, or damaged
Problems with Center Environment	Rooms are messy; rooms are too large or not well-designed; center facility is disorganized; problems with temperature regulation; other facility problems (e.g., bad plumbing)
Lack of Pay or Benefits	Complaints about low pay, lack of insurance, or not enough hours
Personal Issues	Stressors outside of work; feeling sick at work; having appointments to attend outside of work; problems with own children or other family members; death of a loved one
Child Injury /Unusual Incidents	Children who have bruises, scrapes, or are bleeding due to falling down, tripping, or other accident (not due to aggression from other

	child); unusual incidents that occur within the center or classroom (e.g., child having a bloody nose or seizure; child going missing)
Difficulty in Feeding or Soothing Child	Complaints typically about infants and toddlers' feeding and sleep schedules—children refuse a bottle or to eat solid food; child does not go to sleep, wakes up often; needs to be held more often than other children; child excessive crying or unable to be soothed.
Other	This category should be used sparingly to capture any idiosyncratic responses, any responses that do not fall into any of the above categories, or any response that clearly fits into multiple categories and cannot be easily coded

APPENDIX D

DESCRIPTION AND TABLE OF OPEN-ENDED STRESS MEASURE RESPONSES

The table below details the frequency of responses that were given to the open-ended stress questionnaire. A total of 407 responses were given to this measure, based on the responses of 101 participants. The most common response was problems with colleagues (n = 71), such as working with untrained staff, watching other workers cut corners, slack off, or poorly manage children, and fail to fulfill their job responsibilities. Example responses included, "When other workers are just talking to each other on the playground and in the room," "Conflict with co-workers about what my responsibilities are," and "Staff member not really a team member."

The second most common response focused on child behavioral issues (n = 58). Participants detailed children not listening, being aggressive, and fighting with each other. Child-related concerns were also included in several other categories. Twelve responses described the difficulty of having a child in the classroom with a severe developmental delay and/or developmental disorder, including Autism. Participants felt their training did not adequately prepare them for the care of children with disabilities. Child-related difficulties also included dealing with sick children (n = 12), problems in feeding or soothing children (n = 10), child injury or other unusual child incident (e.g., a child having a seizure or a child running away; n = 10), and toileting accidents (n = 3).

The third most common type of response involved complaints about parents (n = 52). These included parents complaining about something that had happened or about how his or her child was being taken care of, parents not communicating with center staff, and parents showing up late at the end of the day. A high number of responses (n = 42) did not fit in any of the categories or fit into multiple categories. These often included items that were vague (e.g., "lack

of communication," "different demands of children," and "constant messiness"). Other responses were highly specific to a particular center or situation, such as struggling to comfort a child who had a recent death in the family.

Category Name	# of Responses	% of Total Responses (n = 407)
Problems with Colleagues	71	17.4
Child Behavior Problems	58	14.3
Problems with Parents	52	12.8
Staffing/Ratio Issues	48	11.8
Other	42	10.3
Time Management Issues	24	5.9
Personal Issues (i.e., stress outside of work)	23	5.7
Lack of Pay or Benefits	15	3.7
Child Developmental Delays	12	2.9
Sick Children	12	2.9
Problems with Director/Supervisor	12	2.9
Difficulty in Feeding or Soothing Child	12	2.9
Child Injury/Unusual Incidents	10	2.5
Lack of Materials and Resources	8	2.0
Problems with Center Environment	5	1.2
Child Toileting Issues	3	.7

Note. The inter-rating reliability, as measured by Cohen's *kappa*, was 0.79, indicating high agreement between the two coders.

APPENDIX E

DEVELOPMENT OF THE CHILD CARE CENTER WORK ENVIRONMENT SCALE

The Child Care Center Work Environment Scale (CCCWES) was developed for the purpose of this project. There have been several stages to the development of this measure, and this has been an ongoing project for the primary investigator and members of her research laboratory for several years. The following is a brief description of the different stages of the development of this measure.

Initial Stage of Measure Development

The initial idea for creating a new measure on the child care center environment came out a series of formal and informal projects on child care employees conducted by graduate and undergraduate members of the Emotional Development Laboratory at Wayne State University. One of the primary research findings of this work was a high rate of depressive symptoms found in child care employees (Fish et al., 2005). Based on this finding, along with observations of child care employees and the facilities at which they worked, it was decided that one part of the lab's research program should be an exploration of the workplace factors that could increase the risk of depression and other mental health symptoms among workers. It was further determined that one efficient way of assessing these factors would be to develop a questionnaire that could be completed by child care employees.

The first step in the design of the measure was to examine factors that are commonly examined in other work environments. Much of this research literature is within the industrial-organizational psychology field rather than the early childhood, developmental psychology, or educational research fields. In this initial stage of development, the research lab group consulted with a faculty member who specialized in studying workplace factors. This faculty member

provided the group with an unpublished workplace measure from his research team (J.M. Lebreton, personal communication, May 2005). This measure focused on general job satisfaction and divided the items into four broad dimensions: role, job, leader, and workgroup. Within each dimension, the items were further divided into subscales. The original measure consisted of 48 items, and each subscale had four items per scale.

The Role Dimensions scale focused on the employees' perceptions of their responsibilities and workplace interactions. This scale was divided into three areas: Ambiguity (e.g., It is often not clear who has the authority to make a decision regarding my job), Conflict (e.g., Too many rules and regulations interfere with how well I am able to do my job; There are too many people telling me what to do), and Overload (e.g., There is more work to do than I could ever get done; I have too much work to do).

The Job Dimensions scale examined employees' opinions about the importance of their work, the overall difficulty, and the amount of freedom that they had in structuring their days. The three scales on this dimension were: Importance (e.g., A lot of people are affected by how I do my job; My work is highly important), Autonomy (e.g., I have a great deal of freedom to decide how I do my job), and Challenge (e.g., My job requires a wide range of skills; My job challenges my abilities).

The Leader Dimensions scale focused on the supervision and administration of the workplace. The three sub-dimensions were Trust and Support (e.g., My supervisor is willing to listen to my problems; My supervisor treats his/her people with respect), Goal Emphasis and Work Facilitation (e.g., My supervisor emphasizes high standards of importance; My supervisor shows me how to improve my performance), and Hierarchical Influence (e.g., My supervisor

keeps his/her people in good standing with upper management; My supervisor is usually successful in dealing with his/her superiors).

The last set of items, the Workgroup Dimensions scale, included items regarding workers' opinions about the overall atmosphere of the work environment. This dimension is divided into three categories: Warmth (e.g., There is a friendly atmosphere among the people in this organization), Pride (e.g., The morale among the people in my workgroup is low), and Cooperation (e.g., The people in my workgroup trust each other).

After careful review, it was determined that this measure did not include the variables of interest for use with a sample of child care employees. Many of the categories and their associated items are not relevant for the child care center environment, particularly the Hierarchical Influence subscale and the Workgroup Dimension. The organizational structure of a child care center is quite different from companies in the financial, technological, and other business fields. There are not the same opportunities for promotion or hierarchical structure in a child care center. Child care workers are also not given specific projects or tasks with set deadlines that they have to meet.

Several members of the research team, including a clinical psychology faculty member, doctoral-level clinical psychology graduate students, and undergraduate psychology majors, were given this measure and were asked to revise the items to make them more relevant for child care workers. The goal was to revise the items to make them more applicable to child care workers while maintaining the original intention of the items. For example, the item, "There is a friendly atmosphere among the people in this organization" was revised to "There is a friendly atmosphere among the people at the daycare center." The item, "Most of the people in my workgroup would not want to work in a different workgroup" was changed to "Most of the other

teachers would not want to work at a different center." In a few cases, items were dropped. For example, the item, "Top management feels my workgroup is below average" does not apply in any way to child care facilities. However, other items that assessed a worker's pride (e.g., "The quality of my daycare center is below average") were added to replace these types of items.

In addition to revising the items from the general workplace job satisfaction measure, members of the research team were also asked to generate new items. Some of the suggested items included issues related to conflict in the child care center environment, such as, "Many of the teachers at the daycare center like to gossip" and "I have seen other teachers at the daycare center treat children in ways that I don't approve of." There also were suggested items that focused on the challenges in working with children, including the items, "The children at the daycare center do not respect me" and "Working with children is the best part of my job." A third group of items focused on the overall value of child care work (e.g., "I do not get paid enough for the type of work I do" and "Working in daycare is not highly valued by other people") and intention to stay in the profession (e.g., "I do not intend to stay at this daycare center for very long" and "Working in daycare centers is what I intend to do for the rest of my career").

New items were also generated under each of the different subscales of the original workplace measure. For example, under the Ambiguity factor, research team members created the items, "I am often unsure of the best way to respond to children's behavioral problems or inappropriate actions" and "There are clear guidelines set that outline proper procedure in dealing with the children and /or parents (e.g., rules of physical contact, appropriate responses to situations, specific procedures to follow in certain circumstances, etc.)." Under the Importance category, one research team member generated the item, "What I do can really make a difference

in the children's lives." Another new item produced by the group was, "There are cliques that exist between staff members that make the work environment difficult or uncomfortable at times," which was intended to address issues related to either warmth or cooperation. After the items were revised, and new items were generated, there was a pool of 91 items.

Review of Occupational Stress Literature

A second phase of the development of the project was examining workplace factors from additional sources. One source was large-scale, corporate surveys of employees all across the country and worldwide. The Great Places to Work Institute has administered surveys to approximately 10 million employees from 45 countries over the past 20 years (Great Places to Work Institute, n.d.). This organization is a private, for-profit company that assesses workplace factors and makes recommendations to companies about improving the organizational climate and employee morale of the company.

Based on the outcomes of their surveys, the Great Places to Work Institute has developed a five-part model of business success (Great Places to Work Institute, n.d.). This facility proposes that these five factors are inter-related and pertain to both employer and employee characteristics. The first factor is *credibility* (emphasis added), which focuses on the openness of communications from employers and the management of resources, including physical materials and personnel. The second factor is *respect*. This factor is concerned with supporting professional development, showing appreciation to employees, collaborating with employees on decisions, and caring for employees as individuals with personal lives. The third factor is *fairness*, which emphasizes the principles of equity, impartiality, and justice. The last two factors focus more on employee characteristics. The first of these is *pride*. According to the Great Places to Work Institute, employees should have pride in their personal work, their workgroup, and the

organization as a whole. The last factor is *camaraderie.* Employees should feel as if they can be themselves and be comfortable in their surroundings. In addition, there should be a sense of "team" or "family" among the employees.

The Workplace Dynamics group is another for-profit company that surveys employees in a diverse range of fields (Workplace Dynamics, n.d.). Their group uses a 25-item survey to assess a wide range of workplace issues. These questions include items related to satisfaction with administration or supervisors (e.g., My manager cares about my concerns) and items related to the employee's perception of the job environment (e.g., My job makes me feel like I am part of something meaningful).

These corporate workplace surveys expanded the research group's understanding of the different factors that are emphasized in a variety of different workplaces, particularly in what factors contribute to a successful working environment. However, it was also clear that many of the factors and items from these surveys do not apply to the early childhood field. As in the original job satisfaction workplace measure that was examined and revised, the corporate surveys focus significantly on hierarchical and management issues, which are not present in the child care field. These surveys also ignore a number of relevant factors in the child care occupation, including relationships with parents and children.

For this reason, the research team also examined occupational research from more closely related fields. For example, there has been some research on the occupational climate of elementary schools. The Teacher Stress Survey (Russell, Altmaier, & VanVelzen, 1987) focuses on a range of issues that can occur throughout the school year. There are 47 items on this measure, and participants indicate whether they have had a particular experience within the past year. The format is similar to life stress questionnaires such as the Life Stressors Form (The

Measurement Group, 1997). Some of the items focus on the school administration (e.g., "The school administrator increases the number of students in your classroom" and "The school administrator pushes to get standardized test scores higher") or the school principal (e.g., "The principal is not open to your suggestions" and "The principal does not support you with regard to difficulties with a parent"). Parent issues are also reflected in some of the items. These include the questions, "A parent does not admit to a student's wrongdoing," "A parent threatens to sue," and "You are confronted by parents."

The Organizational Climate Description Questionnaire for Elementary Schools (OCDQ-RE) is a 42-item measure that focuses on teachers' perceptions of their school environment, including support from the principal and administration, pride in their work, and relationships with the other faculty members (Hoy, Smith, & Sweetland, 2002). This survey focuses particularly on the openness of the principal and other staff members.

These teacher measures further expanded the research group's knowledge on some of the stressful aspects of the work environment. These measures were useful in showing how work stress questions can be framed in educational environments rather than in more corporate settings. However, many of the items still do not fully apply given the many structural and organizational differences between public school education and early childhood facilities. The teacher stress measures also focus on different issues due to the developmental range of the children in the setting. In contrast to elementary schools, child care workers have to deal with issues such as diaper changes, feeding, and other issues found in infants, toddlers, and preschool children.

The primary researcher and her research team members also explored the work environment literature in the early childhood field. In general, there has been little focus on the

work environment from the caregivers' perspective in child care centers. The environment of child care facilities is typically examined through observational measures such as the Observational Record of the Caregiving Environment (ORCE; NICHD ECCRN, 1996), the Early Care Environment Rating Scale (ECERS; Harms & Clifford, 1980), or the Infant/Toddler Environment Rating Scale (ITERS; Harms, Cryer, & Clifford, 1990). The results of these measures are often used to establish the quality of the center (e.g., Howes & Smith, 1995; Clarke-Stewart, Gruber, & Fitzgerald, 1994) rather than to determine how the child care workers actually experience the environment. Measures that have been used with child care workers to explore their work experiences and/or perceptions of the workplace include the Maslach Burnout Inventory (Maslach & Jackson, 1986) and the Child Care Worker Job Stress Inventory (Curbow et al., 2000). However, as described below, these measures were deemed inadequate for the current study's purposes.

At this point in the development of the CCCWES, the research team carefully assessed the goal of the measure. It was determined that the primary goal would be to explore different workplace factors that contribute to the presence of mental health symptoms in child care workers. The goal of the measure is to explore the *frequency* of different events and experiences rather than obtain an overall rating of stress or satisfaction of the workers. For this reason, the existing measures of occupational stress, organizational climate, and job satisfaction did not seem to address these concerns, including the measures that have been developed for use with or have been widely used with child care workers. The Maslach Burnout Inventory assesses individuals' emotional exhaustion, feelings of depersonalization, and sense of accomplishment in their work rather than specific aspects of the daily routine and center environment. The Child Care Worker Job Stress Inventory focuses on commonly used definitions of stress in the

workplace, including the factors of job demands, job control, and job resources. However, the current study focuses on a wider view of the child care environment than is addressed in either of these measures because of the focus on specific areas that may contribute to a high rate of mental health symptoms such as disrespect from parents, lack of support from supervisors, and conflict with colleagues.

Generation of Items Related to Child Care Work

In the next phase of the project, the primary investigator and her research group explored the child care research literature for ideas for additional items. There was a specific focus on negative aspects of child care work that could contribute to higher rates of psychopathology. There also was a focus on the identification of positive aspects of the work environment that could serve as protective factors for reducing child care workers' feelings of stress, anxiety, and depression.

Much of the information has been obtained using surveys, many of which have unfortunately included small sample sizes. These surveys provide some insight into the factors that often prove frustrating for child care workers. In a survey by Chambliss (1997), respondents reported problems with parents, problems with children, and conflict with coworkers. Participants in a survey conducted by Kontos and Stremmel (1995) also reported problems with children as a prevalent problem. Respondents in surveys conducted by Shpancer et al. (2008) and Albanese (2007) indicated that they often felt under-valued and under-appreciated in their work. Surveys have also explored child care workers' experiences of physical demands such as lifting and using child-sized seating (Gratz & Claffey, 1996) and the increased frequency of infection among child care employees (Slack-Smith et al., 2006).

Other research in this area has used open-ended questions and other qualitative research methods. Kelly and Berthelsen (1995) recorded journal entries from a sample of early childhood teachers in Australia. Some of their respondents raised specific concerns about parents, such as when parents bring sick children to centers. Baumgartner et al. (2009) conducted a focus group study with a sample of 10 child care workers. These workers discussed a wide range of issues, including the increased stress of the early morning routine, parent disagreements, the noise level of their classrooms, and problems with coworkers.

Valuable information about the child care environment is also found in studies using quantitative research methods. For example, in a study by Mill and Romano-White (1999), the center employee's relationship with her supervisor was one of the strongest predictor of anger displayed toward children. Individuals with positive relationships with their supervisors displayed lower levels of anger. This illustrates the importance of the relationship with a supervisor as a potential protective factor.

Other information about the child care work environment came from formal and informal discussions with child care workers. The primary investigator of the current project gave a presentation on stress and mental health among child care center employees at the Michigan Association for the Education of Young Children (MiAEYC) 2010 Early Childhood Conference (Lietzow, 2010). This presentation was given at two sessions during the conference. The investigator also gave a similar presentation to a regional chapter of the MiAEYC in February 2011 (Lietzow, 2011). As part of the presentation, the attendees were asked what they consider stressful aspects of their jobs. Both center employees and directors were in attendance.

One of the most predominant topics in these talks was problems with parents. Many child care workers reported that they worked with parents who forgot to bring important items to the

center. One center employee discussed a family who always brought their toddler to the center in his pajamas, and he was still wearing the soiled diaper from the night before. Another employee complained that parents often said to her as they were leaving, "I wish I could just stay here and play with you all day, but I have to go to work." The other child care professionals agreed that this was a frequent sentiment from parents. These types of statements made many of the workers feel unappreciated because they view themselves as educators rather than babysitters or friends of the children. It also made them feel that parents thought that their jobs were easy and fun. Another participant objected to the term "day care." She stated, "We care for children, not days." The participants also presented issues related to the administration and supervision of their centers. Many of the center directors in attendance reported that they encouraged discussions of policies among their employees and strived for collaboration between administrator and staff at their facilities. However, many of the center employees did not feel supported in their jobs. They felt that they had no say in day-to-day issues, such as dealing with parent or children issues, or in the overall policies of the center.

The research literature and anecdotal information from child care workers was very useful in generating additional items for the CCCWES. This also helped in identifying the proposed factors for the measure. An additional 22 items were generated based on these discussions. Items from the original pool of 91 items were also removed from consideration because it was determined they did not apply to the child care field or were too confusing. This left a total of 81 possible items, which was a combination of revised items from the original workplace measure and the newly generated items based on the research literature and recommended by child care workers.

Final Version of the CCCWES

In the last stages of the measure development, the items were examined by faculty members with backgrounds in child development, clinical psychology, infant mental health, child care, and education, as well as by graduate and undergraduate students. These individuals proposed a number of changes. One of the primary recommendations from the group was to reduce the number of items. Many of the items were also noted to be too long and confusing. Other items were perceived as not relevant to child care workers or to the current study's goal. Based on these recommendations, 31 items were eliminated. In addition, some minor changes in wording were suggested, either to make items more readable or to change the direction of the item's wording. These many revisions and deletions led to the current version's 50 items. As is evident by reviewing the current version, there is a higher proportion of negative items as compared to positive items (33 and 17, respectively). Many of the items are worded negatively because many of the proposed scales were designed to assess for work problems.

Prior to administering the measure, the primary investigator also divided the items into seven proposed scales (see Appendix F, p. 186). These included four scales that emphasize negative aspects of child care work: Problems with Children, Problems with Parents, Task Overload, and Conflict with Colleagues. High scores on these four problem scales were predicted to indicate higher levels of negative feelings about these areas. Some items were designed to be reversed scored, as is indicated in Appendix F. Three of the designed scales focus on positive factors: Supervisor Support, Commitment to the Profession, and Job Control. Higher scores were expected to show that a worker feels positively about these areas, while low scores were expected to indicate more negative perceptions of the factors.

The proposed division of scales was developed by reviewing available literature on child care center environments, as well as through this past research group's formal and informal observations from previous studies and interactions with child care workers and early childhood teachers. A group of three undergraduate students with backgrounds in psychology, health, and child development were asked to divide the items into the different scales. The project investigator also engaged in this process and made the final determination of the assignment of each item. This process is similar to the expert consensus method used to determine different scales in a study of child care worker professionalism (Martin, Meyer, Jones, Nelson, & Ting, 2010).

It was planned prior to completing the project that factor analysis would be used in order to explore the factor structure. Based on these analyses, it was assumed that some of the scales would need to be combined or eliminated, and the composition of the scales was likely to be altered. Information on the internal consistency (as assessed by Cronbach's alpha; Cronbach, 1951) and the factor structure of the measure and scales are discussed below, based on these analyses run with the current study's sample.

Factor Structure of the CCCWES in the Present Study

In order to analyze the structure of the measure, a principal component analysis was completed, with factors with eigenvalues above 1.0 retained. The varimax rotation procedure was selected in order to maximize the distinctiveness of the factors. Using all 50 items of the CCCWES, 14 factors were initially extracted. After examining the scree plot and the composition of each component, it was determined that only four factors were interpretable. The remaining factors accounted for little of the variance, and the content of many of the factors was not interpretable; many of the factors had three or fewer items that loaded above 0.3.

A close examination of the items' content, factor loadings, and correlations with other items was then completed. Many items did not load highly with other questions. An example is the item, "Child care work is an important field in our society," which rotated onto its own factor in the original 14-component solution. The distribution of this item was also significantly skewed, with almost all participants endorsing this item in the positive direction. Including this question, 11 items were eliminated due to their low factor loadings, weak correlations with other items, skewed distributions, or inconsistent loadings with other items.

Other questions were highly redundant with each other. For example, the item "I have too much to do at one time" is quite similar to the items "I have too much to do at one time in my classroom," "There is more work to do in a single day than I could ever get done," and "While at work, I feel as if I am being pulled in several directions at once." These items also correlated quite highly (above 0.5) with each other. Due to redundancies, four questions were eliminated.

After the deletion of poorly correlated and redundant questions, there were 35 items remaining on the measure. A principal components analysis with a varimax rotation was then completed with these 35 items, and a maximum of four factors was set to be extracted. Appendix G (p. 188) shows the composition of the four resulting components, along with their item number and factor loading in the four-component solution. The 15 eliminated items are also listed.

The four factors accounted for 48.1% of the total variance, with each factor accounting for at least 5% of the variance. The internal consistencies of the four scales are as follows: Center Culture (alpha = 0.87), Work Strain (alpha = 0.84), Pride and Professionalism (alpha = 0.78), and Burnout (alpha = 0.74). These levels of internal consistency are quite high and were deemed sufficient for use in all of the relevant analyses.

APPENDIX F

PROPOSED DIVISION OF CHILD CARE CENTER WORKER SCALE

Problems with Children Scale:

3. The children in my class fight with each other.
9. The children at the child care center do not respect me.
13. The children in my classroom do not follow my directions.
16. Working with children is the best part of my job. (reverse scored)
24. Children in my classroom often break items, such as toys.

Problems with Parents Scale:

4. Parents do not seem to understand how much work I do.
8. Parents like to tell me how to do my job.
12. Parents tend to forget to bring in important things, such as a change of clothes or diapers.
15. Parents often compliment me on my work. (reverse scored)
22. I am annoyed when parents are late picking up their children at the end of the day.
30. Parents have made comments to me such as, "I wish I could stay here and play with you all day."
33. Dealing with parents is the most frustrating part of my job.
40. Parents have brought children to the center who are clearly too sick to be here.
46. Parents often complain about how I take care of their children.

Task Overload Scale:

5. There is more work to do in a single day than I could ever get done.
7. I do more than is required in my job description.
14. I feel more stressed than usual since I have taken this job.
21. I have too much to do at one time in my classroom.
25. I have to work harder because others do not do enough of the work.
29. While at work, I feel as if I am being pulled in several directions at once.
31. I am asked to do more work than my co-workers.
32. I cannot possibly watch all of the children who are assigned to me at one time.
47. Once I have finished soothing one child, I have to immediately deal with another child.
50. I have too much to do at one time.

Conflict with Colleagues Scale:

6. I can count on my co-workers to help me out. (reverse scored)
20. I cannot trust the other people who I work with.
26. Many of the teachers at the center like to gossip.
34. The morale among the staff at my center is low.
41. The other teachers are easy to get along with. (reverse scored)
49. I have seen other children at the center treat children in ways that I do not approve of.

Supervisor Support Scale:

2. My supervisor encourages me to do my job well.
11. All staff at my center are treated fairly.
19. My supervisor values the work that I do.
28. My center director encourages me to do my job well.
35. I know what my supervisor expects of me.
39. My supervisor listens to any concerns I have about my job.
48. The center director is concerned with the welfare of the teachers and staff.

Commitment to Profession/Enjoyment of Work Scale:

1. Child care work is an important field in our society.
10. I do not intend to stay at my current job for very long. (reverse scored)
17. I am proud to be a child care professional.
23. This is the hardest job that I have ever had. (reverse scored)
27. I can really make a difference in children's lives through my work.
36. I intend to continue working in child care for my career.
42. I wish I would have chosen a different career path/line of work.
44. My work is highly rewarding.

Job Control Scale:

18. If I were in charge at this child care center, I would do things differently. (reverse scored)
37. I disagree with certain policies at this center. (reverse scored)
38. I have a great deal of freedom in deciding how to order my day.
43. Too many rules and regulations interfere with my ability to take care of children. (reverse scored)
45. I have no say in the policies at this center. (reverse scored)

APPENDIX G

FINAL DIVISION OF CHILD CARE CENTER WORK ENVIRONMENT SCALE

These subscales are based on a principal component analysis conducted with the varimax rotation procedure with 35 items of the CCCWES. Four components were extracted.

Factor 1: Center Culture

Item Number and Wording	Factor Loading
41. The other teachers are easy to get along with. (reverse)	-.686
26. Many of the teachers at the center like to gossip.	.681
20. I cannot trust the other people who I work with.	.684
11. All staff at my center are treated fairly. (reverse)	-.659
37. I disagree with certain policies at this center.	.641
34. The morale among the staff at my center is low.	.619
18. If I were in charge at this center, I would do things differently.	.611
31. I am asked to do more work than my co-workers.	.569
48. The center director is concerned with the welfare of the teachers and staff. (reverse)	-.552
6. I can count on my co-workers to help me out. (reverse)	-.484
39. My supervisor listens to any concerns I have about my job. (reverse)	-.446

Factor 2: Work Strain

Item Number and Wording	Factor Loading
32. I cannot possibly watch all of the children who are assigned to me at one time.	.679
29. While at work, I feel as if I am being pulled in several directions at once.	.659
22. I am annoyed when parents are late picking up their children at the end of the day.	.649
21. I have too much to do at one time in my classroom.	.645
13. The children in my classroom do not follow my directions.	.604
3. The children in my class fight with each other.	.583
4. Parents do not seem to understand how much work I do.	.574
5. There is more work to do in a single day than I could ever get done.	.550
40. Parents have brought children to the center who are clearly too sick to be there.	.440
24. Children in my classroom often break items, such as toys.	.429
49. I have seen other teachers at the center treat children in ways that I do not approve of.	.327

Factor 3: Pride and Professionalism

Item Number and Wording	Factor Loading
44. My work is highly rewarding.	.621
17. I am proud to be a child care professional.	.616
19. My supervisor values the work that I do.	.612
15. Parents often compliment me on my work.	.597
16. Working with children is the best part of my job.	.593
2. My supervisor encourages me to do my job well.	.526
27. I can really make a difference in children's lives through my work.	.487
38. I have a great deal of freedom in deciding how to order my day.	.467

Factor 4: Burnout

Item Number and Wording	Factor Loading
23. This is the hardest job that I have ever had.	.717
14. I feel more stressed than usual since I have taken this job.	.655
10. I do not intend to stay at my current job for very long.	.606
36. I intend to continue working in child care for my career. (reverse)	-.471
7. I do more than is required in my job description.	.445

15 Omitted Items

Item Number and Wording
*1. Child care work is an important field in our society.
*8. Parents like to tell me how to do my job.
*9. The children at the child care center do not respect me.
*12. Parents tend to forget to bring in essential items, such as a change of clothes or diapers.
**25. I have to work harder because others do not do enough of the work.
**28. My center director encourages me to do my job well.
30. Parents have made comments to me such as, "I wish I could stay here and play with you all day."
*33. Dealing with parents is the most frustrating part of my job.
*35. I know what my supervisor expects of me.
**42. I wish I would have chosen a different career path/line of work.
*43. Too many rules and regulations interfere with my ability to take care of children.
*45. I have no say in the policies at this center.
*46. Parents often complain about how I take care of their children.
*47. Once I have finished soothing one child, I have to immediately deal with another child.
**50. I have too much to do at one time.

Note: *Indicates that an item was removed because it did not load onto any of the first 4 factors, had few correlations with other items, was significantly skewed, or loaded weakly or inconsistently; ** indicates item was removed due to redundancy.

APPENDIX H

HUMAN INVESTIGATIONS COMMITTEE APPROVAL

WAYNE STATE UNIVERSITY

IRB Administration Office
87 East Canfield, Second Floor
Detroit, Michigan 48201
Phone: (313) 577-1628
FAX: (313) 993-7122
http://irb.wayne.edu

NOTICE OF EXPEDITED APPROVAL

To: Sarah Lietzow
Psychology
5057 Woodward Avenue

From: Dr. Scott Millis
Chairperson, Behavioral Institutional Review Board (B3)

Date: November 28, 2012

RE: IRB #: 115312B3E
Protocol Title: Work-Related Stress and Mental Health of Child Care Center Workers
Funding Source: Unit: Psychology
Protocol #: 1211011470

Expiration Date: November 27, 2013

Risk Level / Category: Research not involving greater than minimal risk

The above-referenced protocol and items listed below (if applicable) were **APPROVED** following *Expedited Review* Category (#7)* by the Chairperson/designee *for* the Wayne State University Institutional Review Board (B3) for the period of 11/28/2012 through 11/27/2013. This approval does not replace any departmental or other approvals that may be required.

- Revised Protocol Summary Form (received in the IRB Office 11/28/12)
- Protocol (received in the IRB Office 11/16/12)
- Recruitment Letter
- Behavioral Research Informed Consent: Director/Administrator (dated 10/31/12)
- Behavioral Research Informed Consent: Employee (dated 10/31/12)
- Mental Health Resources Pamphlet
- Data collection tools: Participant Information Questionnaire, Child Care Worker Stress, Child Care Center Work Environment Scale (CCCWES), Life Stressors Form (Abbreviated), Center for Epidemiological Studies Depression Scale (CES-D), Brief Symptom Inventory (BSI), Social Provisions Scale (SPS), and Center Information Questionnaire

- Federal regulations require that all research be reviewed at least annually. You *may* receive a *"Continuation Renewal Reminder"* approximately two months prior to the expiration date; however, it is the Principal Investigator's responsibility to obtain review and continued approval ***before*** the expiration date. Data collected during a period of lapsed approval is unapproved research and can never be reported or published as research data.
- All changes or amendments to the above-referenced protocol require review and approval by the IRB **BEFORE** implementation.
- Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the IRB Administration Office Policy (http://www.irb.wayne.edu//policies-human-research.php).

NOTE:

1. Upon notification of an impending regulatory site visit, hold notification, and/or external audit the IRB Administration Office must be contacted immediately.
2. Forms should be downloaded from the IRB website at **each** use.

*Based on the Expedited Review List, revised November 1998

APPENDIX I

RECRUITMENT LETTER FOR CENTERS

Wayne State University
Department of Psychology
5057 Woodward Ave., 7th Floor
Detroit, MI 48201

January 1, 2013

Dear Director:

We need your help with an important research study. We are studying the nature of child care work with a particular focus on how this experience may lead to stress among child care professionals. Child care is very important to the children and families in our communities. However, there has been a limited focus on the needs of the hardworking individuals who actually care for our youngest children on a daily basis. We know a great deal about the needs of parents, but we know less about other people such as yourself and your employees who have made a career out of taking care of children. We are completing a survey of child care center employees and directors in the metropolitan Detroit area in order to learn more about the experience of working in child care.

We are inviting you to be a part of our survey. We are a team of researchers at Wayne State University, headed by Dr. Rita Casey, a child psychologist. If you would like to have your center included in our survey, one or two of us will come to your facility and administer questionnaires to a small number of your employees. It is expected that these questionnaires will take 45 minutes or less to complete. We can plan to come during naptime or lunchtime if this is feasible. We also will ask you to complete a very brief questionnaire about your organization, such as the number of employees and the type of training you conduct. Participation in this survey is voluntary for both you and your employees. Each employee will be asked individually at the time of our visit whether they want to participate, and they will be able to stop their participation at any time. Employees cannot be required to participate, nor can there be any negative consequences to them for their decision whether to participate.

All of our team members have been screened for TB, received their annual influenza vaccination, and have underwent background checks through Michigan's Child Abuse Registry, just as child care workers must be. All information given to us will be kept private, and the information will not have the names of employees or centers on it. We will not share your responses or the responses of individual employees with anyone, including anyone at your facility. When we tell other people about the results of our survey, such as if we give a talk or publish the study in a journal, we will only talk about groups of child care professionals, not about any particular person or center.

We will give you a follow-up call within the next 10 days. If you are interested in participating in our survey, we will schedule an appointment at your convenience. You also can call us at (313)

577-4667 to ask for more information or to schedule an appointment. You also can email the lead graduate student investigator at s.lietzow@wayne.edu. As a thank you for helping us with this important study, everyone who participates will receive a $10 gift card to Target or Wal-Mart.

Taking care of children is a big challenge, but we know it is not always easy! We hope you will help us with this important study so we can improve the lives of people who take care of children.

Sincerely,

Child Care Team Members:
Sarah Lietzow- Senior Team Member
Frederick Upton- Senior Team Member
Hasti Ashtiani- Senior Team Member

Dr. Rita Casey, Ph.D., Director,
WSU Child Care Study Team and Associate Professor of Psychology

APPENDIX J

CONSENT FORMS

CHILD CARE CENTER EMPLOYEE CONSENT FORM

Behavioral Research Informed Consent

Title of Study: Work-Related Stress and Mental Health of Child Care Center Workers

Principal Investigator (PI): Sarah J. Lietzow
Psychology Department
Phone: (313) 577-4667

Purpose

You are being asked to be in a research study of factors that lead to stress, anxiety, and depression in child care workers because you currently are employed in a child care center at least 20 hours per week. This study is being conducted at your child care center or at the Emotion Development Lab at Wayne State University. The estimated number of study participants to be enrolled in the study at child care centers throughout the Detroit Metropolitan area is 100. **Please read this form and ask any questions you may have before agreeing to be in the study.**

In this research study, some participants will be asked to respond to questionnaires that ask about their experiences working in child care. They also will be asked to respond to questionnaires about their mood, personal stress, and current mental health. In addition, child care center directors or administrators will be asked to provide additional information about the child care facility, such as the number of employees who work at the center and how many employees on average leave their jobs annually. The purpose of the study is to determine what factors present in a child care facility may lead to increased risk of disorders such as depression and anxiety. Furthermore, we are interested in what positive factors may reduce the risk of the development of these disorders.

Study Procedures

If you agree to take part in this research study, you will be asked to complete several questionnaires related to your own mood and mental health, as well as your experience as a child care center employee. One of the questionnaires will be a demographic questionnaire that will ask you about your age, educational background, work history, and current and past mental health, including the participation in therapy and the use of psychotropic medications. Another questionnaire will ask about your experience in child care, such as problems with parents, your relationship with your supervisor and colleagues, and issues related to the physical environment of the center. You also will be given two questionnaires that will ask about your mood and other symptoms you may be currently experiencing. You will complete two stress questionnaires, including one with open-ended questions about stress at work and one about stresses in your personal life. A final questionnaire will ask about your social network. It is expected that it will take between a half hour and 45 minutes to complete these questionnaires. In a separate portion of the study, center directors and/or administrators of your child care facility will complete a

brief questionnaire that will ask them about aspects of your child care center, such as how many individuals are employed and how many classrooms are in your center. It is expected that it will take center directors approximately 10 minutes to complete this questionnaire. Center directors will respond to their questionnaire independently from child care center employees and will have no access to center employees' responses. No names or other identifying information will be present on any of the completed forms. This consent form will not be in any way connected to your responses. Center employees and center directors' responses will be connected through participant numbers only.

You may choose not to answer any question at any point during this study. You may also choose to end your participation in the study at any time.

Benefits
As a participant in this research study, there may be no direct benefit for you; however, information from this study may benefit other people now or in the future.

The possible benefits to you for taking part in this research study include the satisfaction of knowing that you may add important information to an area of research that has not yet been studied, which can lead to recommendations for education and training of other child care center employees.

Risks
By taking part in this study, you may experience the following risks:

- Psychological risks: During this study, you will be responding to questions about your current feelings and your participation in mental health services. This may be difficult for some individuals, particularly if they are currently experiencing a low mood or have sought mental health treatment in the past. However, many people find that expressing their feelings and negative experiences can help them feel better. If at any point during the study, you feel distressed or upset by any of the items on the questionnaires, please alert the interviewer, and he or she will discuss this with you. We also will give you materials at the end of the study that include information on mental health services in your community that you can contact if you feel you are in need of these services.
- Social risks: During this study, you will be asked questions about your relationships with your family members, co-workers, and supervisors. These questions may be upsetting for some individuals. In addition, if coworkers, supervisors, or other individuals at your place of employment were aware of your responses, there could be negative effects on your work relationships. However, your responses will not be shared with anyone other than the researchers. Your coworkers and supervisors will not have any access to your answers. In addition, your name and place of employment will be in no way connected to your responses.
- Economic risks: You will be asked about your opinions of child care work in general as well as your feelings toward your current job. If negative responses regarding your place of work were shared with your supervisor(s) or administrator(s), there could be a negative impact on your job standing or performance ratings. All of your responses will be kept confidential and will not be shared with your employer. At the completion of the study, all of your responses

will be put into a folder; none of your forms will remain at the center, where they could be inadvertently looked at by another employee or supervisor.

- The following information must be reported to the appropriate authorities:
  - If at any time during the study, there is concern that child abuse or elder abuse has possibly occurred.
- There may also be risks involved from taking part in this study that are not known to researchers at this time.

Alternatives
You may choose at any point in time to stop your participation in this study.

Study Costs
Participation in this study will be of no cost to you, unless you choose to complete the measures at the Emotional Development Lab at Wayne State University, at which time you would incur the costs of transportation and parking.

Compensation
For taking part in this research study, you will be compensated for your time and inconvenience. You will receive a $10 gift card to a retail store of your choosing (Target or Wal-Mart) at the completion of the study.

Confidentiality
All information collected about you during the course of this study will be kept confidential to the extent permitted by law. You will be identified in the research records by a randomly assigned number only. Information that identifies you personally will not be released without your written permission. However, the study sponsor, the Institutional Review Board (IRB) at Wayne State University, or federal agencies with appropriate regulatory oversight [e.g., Food and Drug Administration (FDA), Office for Human Research Protections (OHRP), Office of Civil Rights (OCR), etc.] may review your records. When the results of this research are published or discussed in conferences, no information will be included that would reveal your identity.

Voluntary Participation/Withdrawal
Taking part in this study is voluntary. You have the right to choose not to take part in this study. If you decide to take part in the study, you can later change your mind and withdraw from the study. You are free to only answer questions that you want to answer. You are free to withdraw from participation in this study at any time. Your decisions will not change any present or future relationship with Wayne State University or its affiliates, or other services you are entitled to receive.

The PI may stop your participation in this study without your consent. The PI will make the decision and let you know if it is not possible for you to continue. The decision that is made is to protect your health and safety, or because you did not follow the instructions to take part in the study

Questions

If you have any questions about this study now or in the future, you may contact Sarah Lietzow or one of her research team members at the following phone number, (313) 577-4667. If you have questions or concerns about your rights as a research participant, the Chair of the Institutional Review Board can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Consent to Participate in a Research Study

To voluntarily agree to take part in this study, you must sign on the line below. If you choose to take part in this study, you may withdraw at any time. You are not giving up any of your legal rights by signing this form. Your signature below indicates that you have read, or had read to you, this entire consent form, including the risks and benefits, and have had all of your questions answered. You will be given a copy of this consent form.

_____	_____
Signature of participant	Date
_____	_____
Printed name of participant	Time
_____	_____
Signature of person obtaining consent	Date
_____	_____
Printed name of person obtaining consent	Time

CENTER DIRECTOR CONSENT FORM

Behavioral Research Informed Consent

Title of Study: Work-Related Stress and Mental Health of Child Care Center Workers

Principal Investigator (PI): Sarah J. Lietzow
Psychology Department
Phone: (313) 577-4667

Purpose

You are being asked to be in a research study of factors that lead to stress, anxiety, and depression in child care workers because you currently serve as a center director or head administrator of a child care center. This study is being conducted at your child care center. The estimated number of study participants to be enrolled in the study at child care centers throughout the Detroit Metropolitan area is 100. **Please read this form and ask any questions you may have before agreeing to be in the study.**

In this research study, some participants will be asked to respond to questionnaires that ask about their experiences working in child care. They also will be asked to respond to questionnaires about their mood and current mental health. In addition, child care center directors or administrators will be asked to provide additional information about the child care facility, such as the number of employees who work at the center and how many employees on average leave their jobs annually. The purpose of the study is to determine what factors present in a child care facility may lead to increased risk of disorders such as depression and anxiety. Furthermore, we are interested in what positive factors may reduce the risk of the development of these disorders.

Study Procedures

If you agree to take part in this research study, you will be asked to complete a brief questionnaire that will ask about aspects of your child care center, such as how many individuals are employed and how many classrooms are in your center. It is expected that it will take you approximately 10 minutes to complete this questionnaire. In a separate portion of the study, employees from your center will be asked to complete several questionnaires that concern their personal experiences of working in child care. Center directors will respond to their questionnaire independently from child care center employees and will have no access to center employees' responses. Center employees will also not have any knowledge of center director responses. No names or other identifying information will be present on any of the completed forms. The consent form that you are signing will not be in any way connected to your responses. Center employees and center directors' responses will be connected only through participant numbers only.

You may choose not to answer any question at any point during this study. You may also choose to end your participation in the study at any time.

Benefits

As a participant in this research study, there may be no direct benefit for you; however, information from this study may benefit other people now or in the future.

The possible benefits to you for taking part in this research study include the satisfaction of knowing that you may add important information to an area of research that has not yet been studied, which can lead to recommendations for education and training of other child care center employees.

Risks
By taking part in this study, you may experience the following risks:

- Economic risks: Information about your child care center/place of employment is being collected in your study, including information about negative outcomes such as employee turnover. If this information were to be released to the public about your center, there could be a negative impact on your business and recruitment/retention of children. However, your center name and location will not be recorded for the study; all information will be identified solely be randomly assigned numbers. In addition, only aggregate information will be presented in research findings; no individual center will be referred to in any way.
- The following information must be reported to the appropriate authorities:
    - If at any time during the study, there is concern that child abuse or elder abuse has possibly occurred.
- There may also be risks involved from taking part in this study that are not known to researchers at this time.

Alternatives
You may choose at any point in time to stop your participation in this study.

Study Costs
Participation in this study will be of no cost to you.

Compensation
For taking part in this research study, you will be compensated for your time and inconvenience. You will receive a $10 gift card to a retail store of your choosing (Target or Wal-Mart) at the completion of the study.

Confidentiality
All information collected about you during the course of this study will be kept confidential to the extent permitted by law. You will be identified in the research records by a code name or number. Information that identifies you personally will not be released without your written permission. However, the study sponsor, the Institutional Review Board (IRB) at Wayne State University, or federal agencies with appropriate regulatory oversight [e.g., Food and Drug Administration (FDA), Office for Human Research Protections (OHRP), Office of Civil Rights (OCR), etc.] may review your records. When the results of this research are published or discussed in conferences, no information will be included that would reveal your identity.

Voluntary Participation/Withdrawal
Taking part in this study is voluntary. You have the right to choose not to take part in this study. If you decide to take part in the study, you can later change your mind and withdraw from the study. You are free to only answer questions that you want to answer. You are free to withdraw

from participation in this study at any time. Your decisions will not change any present or future relationship with Wayne State University or its affiliates, or other services you are entitled to receive.

The PI may stop your participation in this study without your consent. The PI will make the decision and let you know if it is not possible for you to continue. The decision that is made is to protect your health and safety, or because you did not follow the instructions to take part in the study

Questions

If you have any questions about this study now or in the future, you may contact Sarah Lietzow or one of her research team members at the following phone number, (313) 577-4667. If you have questions or concerns about your rights as a research participant, the Chair of the Institutional Review Board can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Consent to Participate in a Research Study

To voluntarily agree to take part in this study, you must sign on the line below. If you choose to take part in this study, you may withdraw at any time. You are not giving up any of your legal rights by signing this form. Your signature below indicates that you have read, or had read to you, this entire consent form, including the risks and benefits, and have had all of your questions answered. You will be given a copy of this consent form.

_____	_____
Signature of participant	Date
_____	_____
Printed name of participant	Time
_____	_____
Signature of person obtaining consent	Date
_____	_____
Printed name of person obtaining consent	Time

APPENDIX K

HANDOUT ON MENTAL HEALTH SERVICES

Resources:

If you would like to seek services for yourself or someone you know who may be affected by depression, anxiety, or other disorders, here are some resources in the community that you may use:

Crisis Lines (for emergency mental health services)

Livingston County Crisis Line:	1-800-615-1245 (24-hour emergency)
Macomb County Crisis Center Hotline:	586-307-9100
Monroe County Crisis Line	800-886-7340
Oakland County Crisis Line	800-231-1127
Washtenaw Psychiatry Emergency Services (PES) [University of Michigan and Washtenaw Community Health Organization (WCHO)]	734-936-5900
Wayne County Mental Health Crisis Line	800-241-4949
St. Joseph Mercy Psychiatric Access	734-712-2762
University of Michigan Emergency Medicine Clinic	734-996-4747

Useful websites and phone numbers

Name	Description	Phone #	Website
Michigan Mental Health Networker	Database of therapists and agencies throughout Michigan	734-761-8813	http://www.mhweb.org
Therapeutic Resources	Database of therapeutic support groups in Michigan	N/A	http://www.therapeuticresources.com/supportmichigan.html
National Institute of Mental Health:	Useful for finding information on depression and other disorders	N/A	www.nimh.nih.gov
National Alliance on Mental Illness	Useful for finding reliable information on depression and	N/A	http://www.nami.org

	other disorders		

Outpatient Services

Name and Location	Description	Phone #	Website
ACCESS (Arab Community Center for Economic and Social Services) Dearborn and Sterling Heights locations	Provides social services and counseling to individuals in the community; specializes in work with Arab Americans	313-216-2200	www.accesscommunity.org
Developme nt Centers, Inc (more than one location)	Child and Family Services, Adult Behavioral Health Services, Early Childhood Services, Jobs Education and Training, School Based Services	313-531-2500	http://www.mhweb.org/wayne/development.htm
Eastern Michigan University Psychology Clinic 611 W Cross St Ypsilanti, MI 48197	Provide therapy and assessment to adults from community (low fixed rate cost)	734-487-4987	http://www.emich.edu/psychology/dept-psychologyclinic.html
Gateway Community Health (several locations)	Service referrals to several agencies	1-800-973-4282 or 313-262-5050	http://www.gchi.org/
Guidance Center	Service referrals to several agencies	734-785-7700	http://www.guidance-center.org
Life Stress Center Detroit Receiving Hospital	Provides therapy services to victims of crime	313-745-4811	http://www.drhuhc.org/information/stress
University of Detroit Mercy Psychology Clinic University of Detroit	Provides therapy and assessment services to children and adults in the community (sliding fee scale)	313-578-0570	http://liberalarts.udmercy.edu/programs/depts/psychology/clinic/index.htm

Mercy Reno Hall - McNichols Campus			
University of Michigan: Adult Psychiatry	Psychiatry services for adults	734-764-0231 for information; 1.800.525.5188 to make appt.	http://www.psych.med.umich.edu/care/adult
University of Michigan Depression Center	Offers groups and other services for individuals with depression	734-936-4400 or 1-800-475-MICH (6424)	http://www.depressioncenter.org/Workshops_and_Groups/default.asp
University of Michigan Psychology Clinic	Provide therapy and assessment to adults from community (accept some insurance and have sliding fee scale)	734-764-3471	Website: http://www.psychclinic.org/ Email for information: clinicinfo@umich.edu
UPC Jefferson 2751 E. Jefferson Detroit, MI 48207	Provides therapy and psychiatric services to adults	313-993-3434	http://www.med.wayne.edu/psychiatry/UPG%20Website/about/index.html
Wayne State Psychology Clinic 60 Farnsworth Detroit, MI 48202	Provides therapy and assessment services to children and adults in the community (sliding fee scale)	313-577-2840	http://www.clas.wayne.edu/psychclinic/

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ABSTRACT

WORK-RELATED STRESS AND MENTAL HEALTH OF CHILD CARE CENTER WORKERS

by

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Advisor: Dr. Rita J. Casey

Major: Psychology (Clinical)

Degree: Doctor of Philosophy

The purpose of this study was to investigate what factors are associated with symptoms of depression, anxiety, somatization, and general psychological distress in a sample of child care center workers. A sample of 101 employees from 14 different child care centers in the southeastern Michigan area were administered questionnaires that asked about work and home life, social support, and mental health. Data was also collected from center directors regarding the type and size of the child care program and the annual turnover rate of each facility.

One of the key findings of the study was that a significant number of the child care workers scored above the clinical cutoffs on one or more symptom scale. One-fourth of the total sample had an elevation on at least one of the scales. Over 18% scored highly on the CES-D, a measure of depression symptoms. Even more surprising was that 15 individuals (14.9%) reported significant levels of anxiety, which has not been previously documented in a sample of child care workers. Symptoms of depression, as measured by the CES-D, and somatic complaints were strongly related to the recent experience of many stressful life events. In contrast, symptoms of anxiety and general psychological distress were associated with a combination of stressful life events and work-related problems. Age was also an important factor; older participants generally

reported fewer symptoms on any of the scales and reported being more committed to the child care profession.

At the center level, reported turnover rates were related to the participants' feelings of burnout. Large centers had more employees leave annually; large facilities also paid their employees less on average than smaller child care programs. Based on this study's results, recommendations were made for center directors who are interested in reducing their employees' stress in the center environment.

AUTOBIOGRAPHICAL STATEMENT

Sarah Lietzow Witherell was born and raised in northern Michigan. She received her B.S. in Psychology from Central Michigan University in 2003. She received her M.A. in Clinical Psychology from Wayne State University in 2009. While at Wayne State, she completed several practicum positions, including at the Wayne State University Psychology Clinic, the Oakland County Court Family Division Psychological Clinic, and The Children's Center of Wayne County. Sarah completed her pre-doctoral internship at the Hawthorn Center in Northville, Michigan. Following her graduation, Sarah plans to work in the outpatient community in the evaluation and treatment of children and adolescents with emotional and behavioral disorders. She and her husband currently reside in Canton, Michigan.