

**Exploring Multiple Pathways from Low-Wage Work to Worker Health: A Mixed-
Methods Study**

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Scant research has examined the extent to which both economic and non-economic dimensions of low-wage work determine differential exposures to stress, and the extent to which these stressful experiences pose a threat to worker health. The goal of this dissertation study is to explore multiple mechanisms from working conditions of low-wage work to worker mental health. Informed by a theoretical framework derived from social stress theory, this study utilized concurrent mixed methods to gain a fuller and nuanced understanding of vulnerable low-wage workers.

This dissertation study used both quantitative and qualitative data from the Pittsburgh Wage Study. Health care workers in Pittsburgh, Pennsylvania completed online surveys and/or participated in in-depth interviews. Path analysis and thematic content analysis were used to analyze quantitative and qualitative data, respectively. Quantitative examination demonstrated the significant role of certain working conditions in worker mental health and confirmed the mediating role of stress in the relationships between life stressors and mental health. Qualitative examination revealed four groups of workers, grouped according to the level and source of work-family conflict. These groups suggest that work-family conflict needs to be understood in light of not only work schedules but also other factors that promote or hinder workers' ability to balance work and life. The qualitative findings provide a fuller and more nuanced understanding of the lack of relationship between work schedules and work-family conflict as revealed by the quantitative

analyses, thus illustrating the advantage of employing a mixed-methods approach.

It is essential to see the working conditions of low-wage workers as impacting not only the well-being of low-wage workers, but also the network surrounding these workers. Findings from this study will help inform policymakers and institutions of the need for differential strategies to improve working conditions in support of worker mental health. Implications of these findings are discussed with regard to providing a living wage, alleviating material hardship, improving workplace policies, and helping workers balance work and family responsibilities.

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Preface

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1.0 Introduction

“Genetics loads the gun, but the environment pulls the trigger” (Olden & White, 2005). This oft-cited quote exemplifies the relationship between health and environment. Not only genetic disposition, but also the environment in which people are born, grow, live, work, and age can contribute to health (World Health Organization, 2019). Notably, working conditions that shape low-paying occupations make workers particularly vulnerable to poor health. Low-wage workers are often employed in jobs with disadvantageous working conditions. As the term of ‘low-wage’ work indicates, low-wage workers earn low pay, which forces many of these workers to hold multiple jobs and make it difficult for them to cover simple living expenses (Gringeri, 2001). Additionally, low-wage workers are generally offered few or less generous fringe benefits by their employers, including health insurance, paid family and sick leave (Claxton, Rae, Long, Damico, & Whitmore, 2018; Jones, 2017; Long & Marquis, 2001; Smith & Halpin, 2014). Further, these employees frequently work on nonstandard and unpredictable schedules, and they are expected to be on-call and available without advance notice (McMenamin, 2007), at the same time that they usually have little or no input into their own schedules due to low levels of job autonomy (Vidal, 2013; Waldron, 2007).

These working conditions pose a threat to the well-being of low-wage workers, as these workers are exposed to stress, and they tend to have poor health outcomes. Economic dimensions of low-wage work shape access to medical care, nutritious food, housing conditions, and services (Nord & Parker, 2010; Warren, 2018; Yabroff, Zhao, Han, & Zheng, 2019). Although studies have centered most on these economic aspects, non-economic facets of low-wage work are equally important to consider when studying the relationship between working conditions and worker

well-being. Non-economic dimensions of low-wage work may make it challenging for workers to meet their work and personal responsibilities (Golden, 2015; Henly & Lambert, 2014; Schneider & Harknett, 2019; Smith & Halpin, 2014; Swanberg, 2005; Voydanoff, 1988). These stressful experiences can, in turn, damage workers' physical and psychological health, which exacts a heavy toll on workers, families, employers, and society as a whole.

In comparison with other advanced countries, the United States has the largest share of low-wage work (McKnight et al., 2016). In the U.S., workers of color, women (nearly half of this group are raising children), and those with lower levels of education such as a high school diploma are over-represented among low-wage workers (Goldman, Gupta, & Hernandez, 2018; Ross & Bateman, 2019). As low-wage jobs have continued to grow and working conditions inherent in low-wage work have not improved over time and have continued to deteriorate (Kalleberg, 2011; Tarpey, 2018), the plight of low-wage workers who work under unfavorable conditions will likely persist. While working conditions continue to decay because of the lack of social and union protections, policies benefiting the wealthy have increased, leading to growing income inequality (Tomaskovic-Devey et al., 2020). Income inequality will likely remain very high and low-wage employment will continue to be an important and inevitable feature of the labor market.

The health of low-wage workers requires serious attention because these workers have few or limited resources to promote their health, which in turn may compound their health problems. Even if they have health insurance, high premium contributions, deductibles, and co-pay may be beyond their financial ability (Long & Marquis, 2001; Pentecost, 2007; Sherman, Gibson, Lynch, & Addy, 2017; Vistnes & Monheit, 2011), and their health issues may not be addressed in a proper, prompt manner. It is crucial to examine the working conditions inherent in low-paying occupations as a focal point that impacts not only the well-being of low-wage workers themselves, but also the

network surrounding these workers. Improving working conditions can potentially benefit all, including employees, their families, employers, and recipients of the services that these employees provide (Alli, 2008; Dollard & Nesar, 2013; Villavicencio-Ayub, Jurado-Cárdenas, & Valencia-Cruz, 2014); improved working conditions enable workers to face less material hardship, maintain a healthy work-life balance, experience less stress, and produce better work outcomes.

The role of social work is of paramount importance to improving working conditions and promoting the health of low-wage workers. The primary goal of social work practice is to assist individuals in need and address social problems (National Association of Social Workers [NASW], 2017). One important way that social work practitioners can address the problems plaguing low-wage workers is to advocate for policy change at the macro level. This would be a steppingstone to addressing the oppression and discrimination woven into America's labor market institutions. Policy change at the macro level will promote and assist organizations, communities, and other social institutions to respond to issues relevant to low-wage workers at the mezzo and micro level. Additionally, social workers are bound by the core value of pursuing social justice. One injustice low-wage workers face is their lack of power over their own working conditions, which does not equip them to advocate individually on their own behalf. By contrast, employers have significant power and control to set the terms of employment (Van Buren & Greenwood, 2011). Given the severe decline of unions and the power imbalance between employees and employers, social workers can play a crucial role in fighting against social injustice to ensure that low-wage workers have more access to the resources and opportunities required to meet basic and complex needs and enhance their well-being (NASW, 2017).

Disadvantageous working conditions that make low-wage workers particularly vulnerable to poor health and stress have drawn the attention of researchers, advocates, and policymakers.

However, there is still a limited understanding of the multiple mechanisms through which both economic and non-economic dimensions of low-wage work relate to the mental health of low-wage workers. This dissertation study draws on a sample of low-wage workers in the relatively unexplored health care sector, examines both economic and non-economic dimensions of low-wage work, and uses mixed methods research to yield a fuller and more nuanced understanding of these workers' experiences. With information from this investigation, social workers will help inform policymakers and institutions of the need for differential strategies to improve working conditions in support of the well-being of low-wage workers.

The purpose of the dissertation research is to examine multiple mechanisms through which both economic and non-economic dimensions of low-wage work relate to the mental health of low-wage workers. The identification of working conditions that make low-wage workers particularly vulnerable to stress and poor mental health can guide organizations where low-wage workers are employed and policymakers in forming strategies that will improve working conditions inherent in low-wage work, thereby resulting in alleviated stress and enhanced health outcomes.

The overarching quantitative study research question addressed by this dissertation is: What are multiple pathways to worker mental health from both economic and non-economic working conditions of low-wage work? Its sub questions addressed through analyses of quantitative data are as follows:

- 1) To what extent are working conditions related to life stressors such as material hardships and work-family conflict?
- 2) To what degree are working conditions associated with perceived stress levels reported by low-wage workers?

- 3) To what extent are life stressors such as material hardships and work-family conflict related to stress and mental health outcomes?
- 4) Does perceived stress mediate the relationships between life stressors and mental health outcomes?

The qualitative portion of the study, which was designed to provide support to the quantitative study, aimed to answer the questions left unanswered by the quantitative study. After conducting analyses of quantitative data, I decided to focus my qualitative analyses on the connections between work schedules and work-family conflict, which were statistically insignificant in the quantitative study, despite previous empirical findings which suggested that these would be related. The overarching qualitative study research question thus addresses the role of work schedules in the low-wage workers' experiences of work-family conflict. Specifically, I sought to understand the complex relationships between work schedules and work-family conflict, which quantitative data were not able to elucidate, by exploring other factors that promoted or hampered work-family conflict.

After completing both quantitative and qualitative studies, I integrated main findings from survey data with data from in-depth interviews. Overall, I am able to demonstrate how qualitative interviews with low-wage health care workers serve to contribute to a more comprehensive and nuanced understanding of the relationships between work schedules and WFC, via mixed methods analysis.

2.0 Theory, Background, and Literature Review

2.1 Social Stress Theory

Known as the social determinants of health, conditions in which people are born, grow, live, work, and age are primarily responsible for health inequities (World Health Organization, 2019). People in poor living or working conditions face relentless stressful events, which in turn can adversely influence health through stress and inaccessibility of timely and proper care and interventions (Tilden, Cox, Moore, & Naylor, 2018). These conditions are so tightly connected to health that the magnitude of health disparities represent the impact of social and economic inequalities on people's lives (Marmot & Allen, 2014). Efforts to reduce health disparities, therefore, require action to reduce inequalities in those socioeconomic conditions (Marmot & Allen, 2014). Social stress theory thus accords with current understandings of the social determinants of health, as it illuminates how people experience stressful events and persisting stressors and strains over the course of their lives (Frost & LeBlanc, 2014).

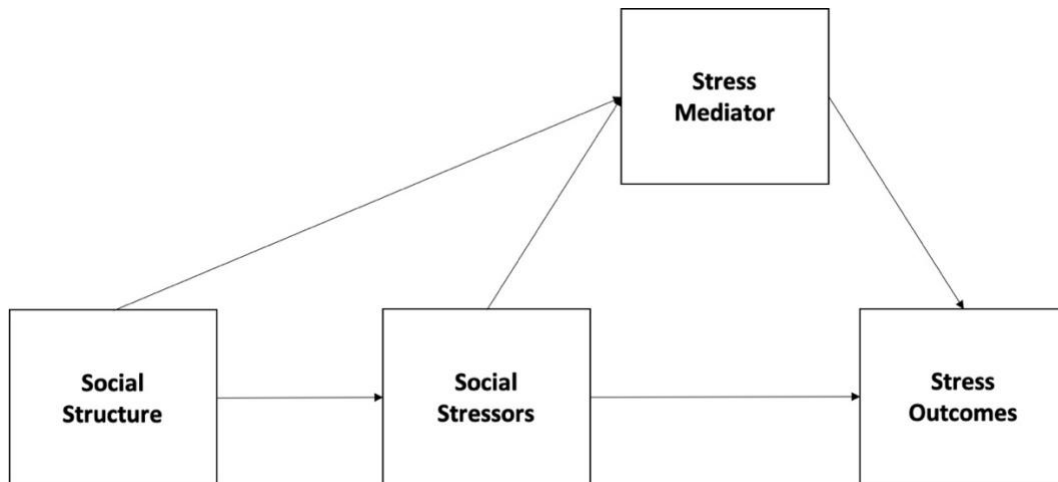
Social stress theory postulates that the structural contexts of people's lives are central to stressors that they encounter in their daily lives, and these social stressors can be harmful to their health (Pearlin, 1989). This theory further proposes that people's coping resources impacted by their different social and economic characteristics may serve as a buffer against stress. This theory focuses primarily on "various structural arrangements in which individuals are embedded" and their impact on each step of the stress process (Pearlin, 1989, p.241). In other words, social structures and individuals' standing within them can determine the extent to which they are exposed to stressors and can mobilize resources to cope with stress as well as the extent to which

stress outcomes are manifested.

According to social stress theory, the stress process involves the following four components: 1) social structure; 2) social stressors; 3) stress mediators; and 4) stress outcomes (Pearlin, 1989). Structural contexts include not only people's statuses in stratified systems (e.g., social and economic class, race/ethnicity, gender, and age), but also social institutions and their arrangements of statuses and roles (e.g., occupational and family statuses and roles). Social stressors entail life events (e.g., involuntary job loss, divorce, and death of spouse) and chronic strains (e.g., economic hardship, interpersonal conflict, and social isolation). Chronic strains involve the relatively persisting problems and conflicts occurring within institutionalized social roles. Inter-role conflict, as an example of a chronic stressor, results from competing demands between familial and work responsibilities (Greenhaus & Beutell, 1985). Additionally, coping mechanisms, either positive (e.g., social support) or negative (e.g., substance use), perform a mediating function in the stress process, which could shed more light on indirect effects of these mediators on stress reduction. Finally, stress outcomes entail symptoms of physical and mental health, substance abuse, and health histories. Notably, people with different social and economic characteristics and roles may manifest stress in different ways.

Considering people's links to structural contexts is essential to promote an accurate and complete understanding of the stress process. Structural contexts in which people are embedded can shape and affect how people experience stressful events, mobilize coping resources, and manifest their stress. Social stress theory further demonstrates the following four steps of the stress process (Figure 1): 1) social structure influences one's stress mediators and exposure to stress; 2) stress, in turn, causes disease; 3) social structure determines one's coping resources; and 4) stress mediators mediate the relationship between social stressors and stress outcomes.

Figure 1 Social Stress Theory – The Stress Process



Social stress theory provides a useful theoretical framework to explain health disparities because it views social conditions inherent in disadvantaged groups as a potential cause of stress of members of these groups, and this stress, in turn, can lead to illness. Stressful events are not viewed as something that springs out of a vacuum or a random condition that could influence anyone independently of their social conditions, but rather are seen as patterned by social structure (Meyer, Schwartz, & Frost, 2008). The stress process of social stress theory demonstrates that adverse health outcomes among certain groups of individuals can be attributed to their enduring exposure to social stressors or limited access to psychosocial resources that could help them cope with stress. In short, social stress theory suggests that social structure patterns stress exposure, and this stress, in turn, causes disease. Despite its centrality to social stress theory, the social patterning of stress exposure has been less explored, while studies of health disparities have generally focused on the health outcome. These studies suggest that disease prevalence varies by social structures, individuals' locations within them, and their exposure to social stressors (Meyer et al., 2008); still, how stress exposure and vulnerability is socially patterned needs to be further investigated.

Social stress theory states that those of lower social standing or disadvantaged social status are exposed to more stressful conditions and have fewer resources to cope with these conditions than those of higher social standing (Pearlin, 1989; Schwartz & Meyer, 2010). Guided by this theory, this dissertation study aims to examine how low-wage workers in lower social standing in the United States are exposed to more stressful conditions (such as deteriorating working conditions), and how these working conditions shape stressors common to low-wage workers, and how these stressors in turn lead to stress and mental health outcomes. The dissertation study focuses primarily on the examination of the potential pathways from work and life stressors to stress outcomes in more depth. Social structure, in other words structural factors that place low-wage workers in lower social standing in the United States, is beyond the scope of both quantitative and qualitative analyses in this study. Instead, the following background subsection promotes an understanding of the social structure, specifically what places low-wage workers in lower social standing in the United States. This subsection lists and explains a range of political, social, and economic factors that have undermined collective bargaining, reduced wages, degraded job qualities, and generated working conditions that eroded hard-fought social and union protections, thereby resulting in the growth of inequality.

2.2 Background

Low-wage work is pervasive, and the low-wage workforce is part of every regional economy in the United States (Ross & Bateman, 2019). The United States had the highest level of low-wage employment in the 1970s, and this level has remained consistently high since then (Kalleberg, 2011). In comparison with other advanced countries, the United States has the largest

share of low-wage work (McKnight et al., 2016). To define low-wage work, various researchers use different definitions.

2.2.1 Definition of Low-Wage Work

There is no single definition of low-wage work. One of the most common definitions references the federal poverty line. A low-wage job is defined as one in which a full-time (40 hours), full-year (52 weeks) worker earns less than the poverty line for a family of two adults and two children (\$25,926 in 2019, or \$12.46 an hour) (Loprest, Acs, Ratcliffe, & Vinopal, 2009; United States Census Bureau, 2020). Other researchers use median hourly earnings and define a low-wage job as one that pays less than two-thirds of the median wage (Bond & Galinsky, 2011; Bosch, 2009; Boushey & Fremstad, 2008). In 2019, the median hourly wage was \$19.14 (United States Department of Labor, 2020); thus, those who had jobs paying \$12.76 or less per hour were defined as low-wage workers. Other analysts define low-wage workers as those who earn less than 150% of the federal minimum wage (Acs & Nichols, 2007). The federal minimum wage has remained at \$7.25 per hour since 2009; therefore, any worker earning less than \$10.88 an hour is considered a low-wage worker. According to these definitions, low-wage workers are defined as making between \$11 and \$13 an hour.

Despite the disagreement on the definition of low-wage work, its definition has been expanded to reflect a living wage and/or the value of low-wage jobs. For example, the Fight for \$15 movement has been pushing for a \$15 minimum wage, which reflects the need for a living wage and a vision of economic justice as well as the social and economic value of low-wage work (Pietrykowski, 2017). Organizations such as the Economic Policy Institute have devised a family budget calculator that considers the income necessary to meet the needs of different family

configurations in different geographic areas. For example, a family of two adults and two children in Pittsburgh, PA, would need \$78,769 (over three times the federal poverty line for a family of four) to make ends meet. Some researchers have moved beyond wage rates and have focused on material hardship, which refers to difficulties in meeting basic daily needs, such as food, housing, medical treatment, utilities, or transportation (Rector et al., 1999). As is evident, there is no settled definition of low-wage work.

Regardless of which definition is used to identify low-wage work, one thing is certain: Low-wage workers are common in every part of the U.S. Studies have elucidated how a confluence of political, social, and economic factors have contributed to the prevalence of low-wage jobs with deteriorating working conditions and the overrepresentation of women of color in these jobs, thereby resulting in growing inequality. These studies cite a variety of structural causes, including globalization, neoliberal market economy, winner-take-all politics, decline in union strength, widening inequality, and occupational segregation based on gender and race.

2.2.2 Globalization and Technological Change

Globalization and technological change make low-wage workers, who are generally not highly skilled or educated, particularly vulnerable. A globalizing economy and technological innovations have forced U.S. businesses to increasingly compete with low-wage countries; thus, these businesses rely more on low-wage immigrants and turn to outsourcing. As a result of businesses' strategies to adapt to globalization and advances in technology, working conditions continue to worsen, involving informal employment and non-standard work arrangements at the expense of employment security (Kalleberg, 2011; Robertson, 2009). For example, the retail industry increasingly merges technology-enhanced high performance with deteriorating wages and

working conditions (Gautié & Schmitt, 2010). Technology advancement has reinforced and contributed to the growing gaps between high- and low-skilled workers (Kalleberg, 2011). Accordingly, globalization and technology innovations have led to real-income declines for the large majority of Americans, while boosting the real and relative earnings of high-income earners who tend to be highly educated and highly skilled (Haskel, Lawrence, Learner, & Slaughter, 2012).

Additionally, globalization and technology have strengthened the position of employers relative to workers, as governments may be motivated to ease labor protections if they affect comparative advantage in global markets (Kalleberg, 2011; Robertson, 2009). Increased competition with low-wage countries and pressures to drive down costs have led employers to take advantage of loopholes to escape the institutions and social norms that govern the employment relationship (Appelbaum & Schmitt, 2009). In the U.S., unfortunately, labor market institutions (e.g., organized labor, labor protections, and minimum wage) have been unable to protect workers' interests and prevent employers from seeking loopholes. As a consequence of inadequate labor market institutions in the U.S., the capacity of collective bargaining and vocational training to maintain job quality is undermined, the quality of jobs is degraded, wages are reduced, and low-wage work is ever increasing (Appelbaum & Schmitt, 2009).

2.2.3 Neoliberal Market Economy

Liberal market economies rely mainly on markets and prices to coordinate economic activity instead of placing greater emphasis on negotiation, persuasion, and consensus building between employers and organized labor (Appelbaum & Schmitt, 2009). A remarkable shift in economic policy paradigm in the United States dates back to 1980 when Ronald Reagan was elected president. Following his election, the Reagan administration replaced the post-World War

II Keynesian policy paradigm with a neo-liberal growth paradigm (Jacobs & Myers, 2014). According to a neo-liberalist view, attempts to regulate labor markets and assist labor are viewed as inequitable assaults against owner property rights and as ill-advised interferences that weaken the efficient ways in which competitive labor markets operate. Neo-liberalists also posit that the price of labor is determined by supply and demand (Harvey, 2007; Jacobs & Myers, 2014).

To ensure that governments avoided interfering in labor markets, Reagan opposed collective bargaining and political attempts to protect less prosperous families from destructive labor market fluctuations (Harvey, 2005). Then as now, the core supporters of the Republican Party include the prosperous, who often profit from cheap labor and wish to avoid paying higher taxes. Thus, tax and macroeconomic policies that favor and benefit the affluent are more likely enacted after Republican presidents take office (Allen & Campbell, 1994; Bartels, 2008). As expected, even after Reagan's presidency, neoliberal policies continued with the goals of maximizing corporate profits and of promoting financial institutions' well-being rather than their consumers'. Deregulating financial institutions (e.g., raising credit card interest, expanding mortgage-backed security) and anti-trust laws increased profits for corporations while undermining protections against risky financial practices (Yoon, 2014). Such policies introduced both an enormous power differential as well as increased economic distance between the affluent and the less affluent; thus, low-wage workers, who lost bargaining power as well as protection, became more and more socially and economically vulnerable.

In the U.S., the level of government intervention in the economy decreases or increases depending on the central tenet of the government's macroeconomic policy. According to one of the greatest critiques of capitalism, *The Great Transformation* (Polanyi, 2001), history is in the grip of the *double movement*: *laisse faire* movement and protective counter movement. *Laisse faire*

movement or marketization, where markets are not self-regulating but destructive to society, sparks societal backlash, which leads to counter movements to protect society (Polanyi, 2001). The core notion of the Great Transformation is that the story of economic history constantly repeats these movements, as evidenced not only in the U.S. economy but the global economy today, where we see the current ferment against the inequities of the economy. In the midst of or after long-standing economic and social inequities in American society, as Polanyi predicted with prophetic accuracy, more protections for workers (e.g., higher minimum wage, labor union, and expanded paid leave) and other vulnerable populations are likely or even inevitable.

2.2.4 Winner-Take-All Politics

Neo-liberal ideologies endorsed by Reagan in early 1980s have influenced the U.S. macroeconomic policies by building legal protections for corporations and the wealthy and interfering with a free market in ways that advantage them rather than workers, thereby intensifying the power imbalance between unions and management. For decades, unions have been in decline in the United States for decades despite their significant role in promoting the rights of workers (Bureau of Labor Statistics, 2019). Such reductions in the union strength signal the absence of workers' power and voice in general, while employers have significant power and control to set the terms of employment (Van Buren & Greenwood, 2011). Low-wage workers lack power to vote for changes in corporate control or other means of imposing their will on their relationships with employers (Van Buren, 2001). In environments in which unions do not exist or are suppressed, low-wage workers are more dependent for their wages on their employers than their employers are on them for their labor (Van Buren & Greenwood, 2011).

The increased power imbalance between employers and employees has resulted in major changes in American public policies shaping the distribution of income: 1) tax policies with significant tax cuts for the rich and the superrich; 2) antiunion laws as well as neglected attempts to update policy to reflect the increasing relative strength of employers; 3) policies allowing for less check on corporations and rather more protection (e.g., executive compensation, curtailed private litigation); and 4) financial policies that allow the rich to gain from deregulated financial institutions (Hacker & Pierson, 2010). Such changes in the U.S. public policies and the role of government in creating and not creating these policies have in turn contributed to the increasing imbalance between employers and employees, thereby growing inequality between the prosperous and the less prosperous (Frank, 2007; Jacobs & Myers, 2014).

Since around 1980, U.S. income inequality worsened and widened substantially and persistently (Hacker & Pierson, 2010). Income inequality is higher in the U.S. than in any other advanced economies based on the Gini coefficient, which measures the extent to which the distribution of income within a country deviates from a perfectly equal distribution. A coefficient of 0 indicates perfect equality where everyone has the same income, while a coefficient of 1 implies perfect inequality where only one person has all the income (United Nations Development Program, 2016). According to World Bank estimates (n.d.), the Gini coefficient in the U.S. in 2017 stood at 0.412, which was higher than Italy (0.359), the UK (0.351), or Canada (0.333).

The U.S. has distinct features of the income gap between the rich and everyone else: 1) income has become hyper-concentrated at the very top of the distribution, while wages for the rest of the population have been stagnant over the past quarter century; 2) the increase in income hyper-concentration has been sustained; and 3) the benefits of this hyper-concentration have not tricked down to the rest of the population (Hacker & Pierson, 2010; Kalleberg, 2011). Politics and public

policies have played a fundamental role in fostering inequality. Government shapes the distribution of income in both direct and indirect way, not only by enacting inequality-inducing laws and policies, but also by failing to update policies that reflect the reality due to pressure from economic and political actors (Hacker & Pierson, 2010). Given the role of government, public policies, and labor organizations representing workers, income inequality will likely remain very high and low-wage employment will continue to be an important and inevitable feature of the labor market.

2.2.5 Occupational Segregation by Gender and Race

Known as the Steel City, Pittsburgh once led the nation in the production of steel for more than a century. Its economy has shifted from manufacturing to service, and now service jobs in Pittsburgh make up nearly 90% of employment (Pennsylvania Department of Labor and Industry, 2021). In particular, the healthcare industry has replaced manufacturing, while downgrading the quality of American middle-class life and furthering income inequality. Women and people of color are often systematically funneled into low-paying healthcare jobs (Himmelstein & Venkataramani, 2019). Women are overrepresented among the lowest-paid workers (Goldman et al., 2018). This is a national trend, but more pronounced in Pittsburgh.

The trend of women outnumbering men in low-paying occupations can be explained by gender-based discrimination, which includes implicit discrimination (i.e., gender discrimination becomes less overt and unconscious as it is less socially acceptable) (Bertrand, Chugh, & Mullainathan, 2005) and statistical discrimination (i.e., employers may discriminate against groups based on their perceived differences in group characteristics that are statistically correlated with worker productivity or job performance) (Aigner & Cain, 1977). Gender discrimination explains why men and women are segregated by occupation and why the work that women do has been

devalued and thus lower paid.

As evidenced in the case of Pittsburgh, women continue to be employed disproportionately in certain occupations (e.g., services associated with nurturing and care), characterized by low wages, less opportunity for advancement, and part-time work (García-Mainar, Montuenga, & García-Martín, 2018). Occupational segregation remains concentrated in jobs that do not require higher levels of education or training, and this has been found to be a source of gender differences in wages (Blau, Brummund, & Yung-Hsu Liu, 2013). Even though occupational segregation decreased among college graduates as more highly educated women acquire professional and managerial jobs, little change in segregation was seen among those without a high school diploma (Blau et al., 2013). Still, many low-wage jobs remain women's jobs. Further, migration of workers, especially female workers who are from lower wage countries and lack higher education, may also increase the number of workers willing to accept low-paid jobs (Appelbaum & Schmitt, 2009).

Also, the devaluation of the work that women do, such as care-oriented roles that are frequently assumed by women, significantly contributes to the persistent gender gap in pay (England et al., 2001; Kilbourne et al., 1994). Women do voluntarily choose lower paying jobs sometimes if their job aligns with their core values or their job does not interfere with their family obligations. However, an extensive body of research documents that, in fact, it is the gender of the workers, rather than the job itself, that tends to lead to the jobs that women do receiving less pay. When women enter fields in great numbers, employers in these fields start paying less even after controlling for factors of education, experiences, and skills (Levanon, England, & Allison, 2009). Moreover, even when men and women do the same work, they are paid differently – women are paid less than men (Goldin, 2014). Gender bias stemming from social norms pertaining to gender comes into play, and the gendered valuation of occupations perpetuates the persistent gender pay

gap. Women tend to have not just lower hourly earnings but shorter and more discontinuous work lives and short-hour jobs (e.g., part-time, temporary jobs) (Appelbaum & Schmitt, 2009; Becker, 1985; Blau & Kahn, 2017).

However, gender discrimination alone does not appear to fully explain why women of color are concentrated in low-wage job. Women of color often have to contest difficult and persistent challenges of racial discrimination in addition to gender discrimination. Intersectional approaches offer a useful tool for better understanding how women of color are positioned in the labor market and how inequality occurs along racial and gender lines. Intersectionality approaches propose that all people have a social location that is defined by their gender, race, and class, and that social locations occupied by women from different class and ethnic/racial backgrounds matter because some people have more power and privilege than others based on their social location (Browne & Misra, 2003). Intersectionality approaches also assume that race and gender fuse to create distinctive opportunities for all groups. Because of racism, women of color (e.g., Black women, Latinas, and some groups of Asian women) tend to earn the lowest wages, have the least authority in the workplace, and are most concentrated in bad jobs, which are defined as those with low wages and lack of fringe benefits (e.g., health insurance, retirement benefits). These women remain at the bottom of the labor market, falling below their White counterparts and men of their same race/ethnicity, who also experience racism and disadvantage in the workplace (Browne & Misra, 2003).

Again, the prevalence of low-wage jobs with degraded job quality and the overrepresentation of women of color in these jobs have been shaped by not just one force, but the interplay of the following wide array of forces: racism, sexism, globalization, technological advancement, public policies that shape and reshape markets, economic actors' impact on how

political authority is exercised, and severely declining union power. As long as such macrostructural changes continue to drive the prevalence of low-paying jobs in markets and generate profits for those who do not support the rights and interests of low-wage workers, this may leave little room for improving working conditions inherent in these jobs. The literature reveals how disadvantageous working conditions that are common in low-wage jobs determine a variety of stressors to which workers are exposed, and how these stressors, in turn, influence the health of these workers. This is the focus of the following section.

2.3 Literature Review

This section explores economic and non-economic dimensions of low-wage work, the connections between working conditions and life stressors (i.e., material hardships and work-family conflict), and the impact of stressors on health outcomes.

2.3.1 Working Conditions Inherent in Low-Wage Jobs

Low-wage jobs are not just characterized by low pay. Low-wage jobs are characterized by other economic dimensions including fewer and lower-quality fringe benefits such as time off and health insurance, as well as non-economic dimensions, including nonstandard and unpredictable schedules and low job autonomy.

2.3.1.1 Economic Dimensions of Low-Wage Work

In low-wage work, the actual wage is not just a number, rather, it reflects workers' perceptions of the degree to which their employer appreciates, values, and respects them and their work. How much workers earn plays a crucial role in whether they feel appreciated (Leslie, 2016). In general, those who earn more are more likely to feel appreciated by their employer, while their counterparts earning less are likely to feel unappreciated. The level of pay influences employee self-esteem as it communicates a sense of how much the organization values an employee (Gardner, Dyne, & Pierce, 2004). Low-wage workers are offered less generous fringe benefits by their employers, including health insurance and sick pay. Employees in low-wage occupations have significantly worse access to insurance offered through their employer than their counterparts (Long & Marquis, 2001). Even if these workers secure access to employment-based insurance, they may have to bear the burden of high worker contributions (Claxton et al., 2018). Besides employer-sponsored health insurance, paid family leave and paid sick leave may not be available to low-wage workers (Jones, 2017).

2.3.1.2 Non-Economic Dimensions of Low-Wage Work

Standard work is defined as working fixed day schedules Monday through Friday during the week, while nonstandard work is described as working irregular hours, irregular days, rotating hours or days, weekend days, and regular evening or night hours (Presser & Cox, 1998). Nonstandard work is common in the American workforce; yet, it is more common among low-wage workers (Enchautegui, 2013; McMenamain, 2007), for whom regular full-time schedules have become rare (Dresser, Rogers, Ubert, & Walther, 2018). Additionally, employees are expected to be on-call and available without advance notice, making it difficult for individuals to balance work and non-work areas of their lives (Smith & Halpin, 2014).

Unpredictability around work schedules is another major concern. In a recent survey of 84,000 people in 80 of the largest food-service companies and retail chains, about 80% of respondents reported working nonstandard shifts. Additionally, most workers did not receive proper notice of their weekly work schedule. About two-thirds of workers were given less than two weeks' notice of their schedule, while others received even shorter notice (i.e., less than one week or less than 72 hours) (Schneider & Harknett, 2019).

Autonomy, or the ability to have an influence over one's work, allows workers to cope better with demands arising from their working environment (Lyly-Yrjanainen, 2008). All of the low-wage occupations in the U.S., including sales, food service, building maintenance and grounds cleaning, personal care and service, and healthcare support, are occupations with low autonomy (Vidal, 2013). Employees in low-wage occupations have significantly less autonomy in determining how they get their jobs done than employees in higher wage groups (Bond & Galinsky, 2012; Dill, Morgan, Marshall, & Pruchno, 2013). As a result, unlike higher-wage workers, low-wage workers are given fewer opportunities to adjust to work demands, are less likely to have input into their schedules, and/or are required to work nonstandard hours (Lyly-Yrjanainen, 2008; Waldron, 2007).

2.3.2 Working Conditions and Life Stressors

Exposure to stressful experiences is important to note not only because differential exposure to social stressors reflects inequalities in structural conditions, but also because stressors proliferate in multiple ways that impact both those under stress and their relationships with others in the long term. Stressors bring more problems within the same life domain, they spill over to another life domain, or they multiply over the life course or across generations (Thoits, 2010). A

variety of working conditions commonly found in low-paying jobs place workers holding these jobs at particular risk of having other stressors, including material hardships and negative work-family interaction or work-family conflict.

2.3.2.1 Material Hardships

Material hardship is a broad, multidimensional concept that refers to difficulties in meeting basic daily needs, such as food, housing, medical treatment, utilities, or transportation (Boushey & Bethney, 2001; Heflin & Iceland, 2009; Rector, Johnson, & Youssef, 1999). Even though there is no one settled definition of material hardship (Beverly, 2001), multiple forms of material hardship, including food insecurity, housing, financial, and medical and health insurance hardships, and difficulty affording utility bills, are often included in measures of material hardship (Beverly, 2001; Danziger, Corcoran, Danziger, & Heflin, 2000; Heflin & Iceland, 2009; Neckerman, Garfinkel, Teitler, Waldfogel, & Wimer, 2016; Ouellette, Burstein, Long, & Becroft, 2004).

Financial hardship has been generally defined as difficulty in meeting monthly financial obligations (Tucker-Seeley, Harley, Stoddard, & Sorensen, 2013), and medical hardship is defined as having unmet medical and dental needs (Bauman, 1998; Bauman, 1998; Heflin, 2016; Neckerman et al., 2016). Further, food insecurity is defined as a household-level economic and social condition of limited or uncertain access to adequate food (United States Department of Agriculture [USDA], n.d.). Food insecurity occurs when one has limited or uncertain ability to obtain enough nutritionally adequate, safe, and acceptable food in socially acceptable ways (Beverly, 2001). Additionally, housing hardship is variably defined as being evicted, moving in with others, living in a shelter, inability to meet housing expenses (e.g., rent, mortgage, or utilities), or being homeless (Bauman, 1998; Danziger et al., 2000; Geller & Curtis, 2018; Kushel, Gupta,

Gee, & Haas, 2006; Neckerman et al., 2016; Rector et al., 1999).

Low earnings for low-wage workers and the income insecurity this often engenders may be particularly consequential for the experience of material hardship. Households with lower incomes are consistently found to be more likely to be food insecure than households with other characteristics (Nord & Parker, 2010). Lower-wage workers also report housing instability. For instance, low-income people tend to move frequently, through rental housing, homeless shelters, and living with family and friends, which causes high levels of housing insecurity (Skobba, Bruin, & Yust, 2013). As housing costs rise, renting a home can be a more viable option than owning one for low-wage workers. Rising costs of renting also leave these workers rent burdened and being rent burdened increases the odds of experiencing material hardship (Warren, 2018).

Wage increases help alleviate material hardship such as food insecurity, unmet medical care, and financial strain (Heflin, 2016; Loopstra, Reeves, McKee, & Stuckler, 2015; Newell, Williams, & Watt, 2014; Reeves, McKee, Mackenbach, Whitehead, & Stuckler, 2017; Woo et al., 2022a). Higher wages increase the total yearly incomes of families at the bottom of the income distribution. Workers in low-wage jobs and their families benefit the most from these wage increases, reducing poverty and income inequality (Congressional Budget Office, 2021; Dube, 2019; Rinz & Voorheis 2018).

Additionally, wage increases lead to improved worker well-being by enhancing life satisfaction, self-reported health, and mental health (Flavin & Shufeldt, 2017; Lenhart, 2017; Reeves et al., 2017). Importantly, the effects of wage increases are not only limited to low-wage workers but also include effects on children in their households. A growing body of literature has found that a higher minimum wage leads to declines in low birthweight of infants (Komro, Livingston, Markowitz, & Wagenaar, 2016); potential prevention of 2800 to 5500 premature

deaths which took place between 2008 and 2012 in New York City (Tsao et al., 2016); decreases in adolescent birth rates (Bullinger, 2017); and fewer child-neglect reports (Raissian & Bullinger, 2017). Children are beneficiaries of wage increases because they are affected indirectly by changes in parents' work conditions, family income, and the quality of non-parental childcare (Hill & Romich, 2018).

In addition to low wages, unavailable or low-quality health insurance can lead to medical hardship among low-wage workers. Employer-sponsored health insurance may be unavailable or provide less coverage to low-wage workers, due to strict eligibility criteria and high premium contributions, deductibles, and co-pays. In general, social supports like health insurance are distributed through the workplace and not through the social welfare system (Kalleberg, 2011). As the Family and Medical Leave Act of 1993 (FMLA) provides only unpaid leave, for instance, its benefits are of limited use to low-wage workers who cannot afford to jeopardize their economic security and take leave without pay. Thus, low-wage workers with limited or no employer-sponsored health insurance, may not be able to access timely and proper health care when they need to take time off to recuperate from their own serious health condition. Medical hardship is not uncommon in the United States; yet, this is particularly true for those without health insurance coverage, as they are more likely to have problems and worry about paying medical bills, and delay and/or forgo care (Yabroff et al., 2019).

2.3.2.2 Work-Family Conflict

Negative work-family interaction, often called work-family conflict (WFC), is predicated on the assumption that work and personal life do not exist in isolation from each other and require an integrated approach to fully understand the employee experience (Greenhaus & Kopelman, 1981). WFC indicates the inter-role conflict experienced as a result of competing demands

between familial and work responsibilities (Greenhaus & Beutell, 1985). There are two commonly measured forms of WFC: time-based and strain-based WFC. Time-based conflict occurs when the amount of time devoted to one role makes it difficult to fulfill the requirements of another role. Strain-based conflict occurs when stress from work affects one's performance in another role with the consequent strain symptoms (e.g., anxiety, fatigue, depression, and irritability) (Greenhaus & Beutell, 1985).

Work-family conflict can be a more serious issue for lower-income working families than for higher-income families. With fewer financial resources, lower-wage workers who barely make ends meet are less likely to purchase childcare services or secure affordable childcare, and these workers are also less likely to have partners to share childcare responsibilities with them (Jones, 2017). Moreover, low-wage workers, who have precarious work schedules and thus little control over their schedules, are more likely to experience difficulty in arranging their children's care (Harknett & Schneider, 2020).

The negative effect of precarious work with nonstandard and unpredictable schedules on work-family conflict has been well-documented. Nonstandard and uncertain schedules can impact workers' lives off the job as these schedules interfere with household tasks and allow less time with their family and they can also result in significant fluctuations in household income (Henly & Lambert, 2014; Swanberg, 2005; Walther, 2019). Therefore, precarious work schedules and little control over schedules result in greater work-family conflict for low-wage workers who struggle to negotiate work and family demands (Golden, 2015; Henly & Lambert, 2014; Schneider & Harknett, 2019; Smith & Halpin, 2014; Swanberg, 2005).

Certain working conditions (e.g., amount and scheduling of work time) and family structure (e.g., number and ages of children) contribute to work-family conflict (Voydanoff, 1988).

For instance, working multiple jobs is a common practice among low-wage workers, yet this strategy exacts some heavy costs on the family, such as childcare, lack of time for children, and housework (Gringeri, 2001). Such work conditions create not only time conflicts for low-wage workers who find insufficient time to fulfill their non-work responsibilities due to their schedules, but also strain conflicts as the stress caused by schedule-related conditions can spill over to non-work areas of life.

2.3.3 Stressors and Health Outcomes

The social distribution of stressors helps illuminate inequalities in physical and mental health problems between advantaged and disadvantaged groups of people. Research on stress and health is not entirely new. Rather, its focus shifted from the health outcomes of acute changes in life events to chronic strains or persisting problems and conflicts that people face in their daily lives (Pearlin, 1989; Thoits, 2010). A large body of literature has reported the adverse effects of these enduring problems and conflicts on physical and mental health outcomes.

2.3.3.1 Material Hardships and Health

Experiencing material hardships can impact one's health and well-being. The bulk of the literature has documented detrimental effects of material hardships on mental and physical health. People experiencing financial hardships were more likely to develop mental health problems and report lower self-rated health than those who did not experience financial hardships (Kiely, Leach, Olesen, & Butterworth, 2015; McDaid et al., 2013; Tucker-Seeley et al., 2013). Reporting medical hardship in particular (e.g., taking less medication due to cost) was shown to be most strongly associated with poor self-rated health (Marshall & Tucker-Seeley, 2018). Also, experiencing

material hardships is associated with negative mental health outcomes, such as depression and anxiety (Heflin & Iceland, 2009; Katz, Crean, Cerulli, & Poleshuck, 2018; Kim, Shim, & Lee, 2016).

Food insecurity is associated with a wide array of adverse health outcomes. For children in food insecure households, negative health outcomes include stomachaches, frequent headaches, colds, asthma, iron deficiency anemia, lower physical function, more anxiety and depression, and higher counts of chronic health conditions (Cook & Frank, 2008; Gundersen & Ziliak, 2015; Thomas, Miller, & Morrissey, 2019). Among adults, adverse health problems include increased rates of mental health problems and depression, diabetes, hypertension, worse outcomes on health exams, being in poor or fair health, and poor sleep outcomes (Gundersen & Ziliak, 2015; Kim, Park, & Kim, 2019; Neckerman et al., 2016). Overall, these studies have shown the strong association between material hardships and health; specifically, these studies report that exposure to material hardships, such as little food intake, hunger, and poor nutrition, inadequate housing, or limited access to health care, have negative consequences for the health of individuals who are unable to meet basic needs.

2.3.3.2 Work-Family Conflict and Health

Negative work-family interaction or work-family conflict is common among U.S. workers, with over 70 percent of workers reporting some interference between work and non-work life (Kelly, Moen, & Tranby, 2011; Schieman, Glavin, & Milkie, 2009). Balancing competing demands between work and non-work domains is one of the keys to a healthy life, but it is challenging because managing work and family responsibilities can strain even the most resourceful employee. Low-wage workers who tend to lack proper benefits, standard and predictable schedules, and autonomy are at particular risk for greater work-family conflict and thus

poorer health outcomes.

A growing body of literature has linked work-family conflict to diverse indicators of health outcomes. In terms of psychological health, work-family conflict has been found to be significantly related to depressive symptoms, emotional exhaustion, lower life satisfaction, and greater fatigue. As for physical health, work-family conflict is associated with psychosomatic complaints, musculoskeletal pain, gastrointestinal problems, and overall physical health (Borgmann, Rattay, & Lampert, 2019; Davis, Gere, & Sliwinski, 2017; Leineweber et al., 2013). Further, work-family conflict has also been found to predict problem behaviors, such as greater alcohol use and smoking (Leineweber et al., 2013; Nelson, Li, Sorensen, & Berkman, 2012; Wolff, Rospenda, & Richman, 2014). Additionally, work-family conflict has been shown to relate to self-rated health and other outcomes, such as sleep disturbances, health-related behavior, and health services utilization (Borgmann, Kroll, Mütters, Rattay, & Lampert, 2019; Borgmann, Rattay, & Lampert, 2019; Davis et al., 2017).

Notably, the impacts of work-family conflict can cross over to employees' children. Studies investigating these cross-over effects describe parental conflicts between work and family domains as "powerful social determinants of mental health which have an intergenerational reach" (Dinh et al., 2017). According to these studies, work-family conflict can potentially be transferred to employees' offspring, as increasing parents' work-family conflict leads to poorer mental health in children; this relationship suggests that efforts to reduce parents' work-family conflict is essential to promote the well-being of children (Dinh et al., 2017; Ohu et al., 2018; Vahedi, Krug, & Westrupp, 2019).

2.3.3.3 Stress as a Potential Mediator of the Stressor-Stress Outcomes Relationship

Empirical studies often overlook the fact that there could be potential mechanisms through which stressors such as material hardships may indirectly disrupt one's health. Extensive research has shown direct consequences of experiencing material hardships (e.g., little food intake, hunger, and poor nutrition, or inadequate housing) for the health and well-being of individuals who struggle to make ends meet (Gundersen & Ziliak, 2015; Heflin & Iceland, 2009; Katz et al., 2018; Kiely et al., 2015; Marshall & Tucker-Seeley, 2018; McDaid et al., 2013; Neckerman et al., 2016; Tucker-Seeley et al., 2013); however, there seems to be a lack of understanding of another hypothesized mechanism that those who experience material hardships are subject to stress and worry about the inability to meet daily basic needs (Butterworth, Rodgers, & Windsor, 2009; Gershoff, Aber, Raver, & Lennon, 2007; Gundersen & Ziliak, 2015; Tucker-Seeley et al., 2013). Exposure to stress may in turn contribute to poor health outcomes (Muramatsu, Sokas, Lukyanova, & Zanoni, 2019).

To date, only few studies have shown perceived stress to partially mediate the relationship between material hardships and health. One study used a sample of service, clerical, and technical health care workers in Pittsburgh, Pennsylvania and found that material hardships were directly associated with physical health, while other forms of hardship like financial hardships and food insecurity were indirectly related to mental health via stress (Woo et al., 2022b). Another study that analyzed data from the national longitudinal study of adolescent health showed that perceived stress accounted for a sizeable portion of the relationship between material hardships and multiple aspects of health, such as self-rated health, depression, sleep problems, and suicidal thoughts (Huang, Heflin, & Validova, 2020).

In the same vein, work-family literature has documented the direct effects of negative work-family conflict on worker well-being (Borgmann et al., 2019; Borgmann, Rattay, & Lampert, 2019; Davis et al., 2017; Leineweber et al., 2013), while the underlying mechanism has not been sufficiently elucidated. Only limited research has explored how the relationship between WFC and health can be mediated by variables such as perceived stress. One study suggested that work-family conflict negatively influenced self-reported mental health among full-time female employees, through mediators including perceived stress (Zhou, Da, Guo, & Zhang, 2018). Known as common stressors for low-wage workers, material hardships and negative work-family conflict may directly and also indirectly predict worker health via perceived stress, which pinpoints the need for further exploration.

2.4 Summary of Theory and Literature

Overall, prior studies have shown consistent relationships between working conditions and stressors such as material hardships and work-family conflict (Golden, 2015; Henly & Lambert, 2014; Nord & Parker, 2010; Skobba et al., 2013; Smith & Halpin, 2014; Swanberg, 2005; Voydanoff, 1988; Walther, 2019; Yabroff et al., 2019). However, these studies have focused primarily on the economic dimension of low-wage work (Schneider & K Harknett, 2019). These studies have also centered on whether workers have access to these benefits (Stoddard-Dare, DeRigne, Collins, Quinn, & Fuller, 2018; Ward & Martinez, 2015), not on the extent to which workers are able to utilize these benefits. Moreover, there is a dearth of research on non-economic dimensions, despite its significant consequences for worker stress and health. Considering both dimensions of low-wage work could provide a fuller picture of these workers' experiences.

Additionally, a wealth of studies has documented strong relationships between stressors and health outcomes. These studies tend not to consider stress as a potential mediator for these relationships, although social stress theory states that a variety of stressors are likely to cause stress. Empirical studies focus primarily on direct effects of stressors on health outcomes (Borgmann et al., 2019; Borgmann, Rattay, & Lampert, 2019; Davis et al., 2017; Gundersen & Ziliak, 2015; Heflin & Iceland, 2009; Katz et al., 2018; Kiely et al., 2015; Leineweber et al., 2013; Marshall & Tucker-Seeley, 2018; McDaid et al., 2013; Neckerman et al., 2016; Tucker-Seeley et al., 2013), while overlooking or taking for granted potential indirect effects of stressors on health through stress. These studies do not fully explain perceived stress as a potential intervening mechanism through which material hardships and work-family conflict may lead to poor mental health outcomes. By including perceived stress as a mediator variable, this dissertation study may help shed further light on pathways from stressors to health outcomes, thereby adding evidence to the literature as well as making a theoretical contribution. Stress is not the same for everybody, nor does everyone experience stress in the same way. What is stressful for one person may or may not be stressful for another. This study, therefore, aims not only to investigate the relationships between stressors, stress, and mental health among those earning low wages in the healthcare industry, but also to examine perceived stress as a potential mediating variable accounting for the effect of stressors common to low-wage workers on their mental health.

Moreover, there are important methodological issues in research pertaining to the relationship between working conditions of low-wage work, stress, and health. The literature examining the effect of disadvantageous working conditions on employee well-being has not focused primarily on low-wage workers (Swanberg, 2005). Instead, those studies tend to draw on professional or managerial workforce or general labor force, which may be able to portray a

general picture of workers, but not a detailed picture of low-wage workers specifically. Additionally, research on precarious working conditions of low-wage work, erratic and unpredictable schedules in particular, is often limited to retail and food service sectors (Henly & Lambert, 2014; Schneider & K Harknett, 2019; Swanberg, 2005), even though low-wage workers are found in a wide range of occupations (Vidal, 2013). Unstable and uncertain schedules are not unique to retail or foodservice industries. In other industrial sectors, there are still low-wage workers dealing with unpredictable schedules who may not be protected by the employer or legislation.

Further, existing literature has revealed other methodological issues, including non-probability sampling, response bias, selection bias, omitted variable bias, and possibility of reverse causality. Few studies use probability sampling. Some groups of people are more likely than other groups to participate in the study, thereby causing response bias. Selection bias occurs as a sample selection does not accurately reflect the target population, and this bias distorts a true association or a true lack of association. Further, there are other factors such as supervisor or organizational support that could influence the relationship between working conditions and worker well-being, but they may have been omitted in some studies. Additionally, there is the possibility of reverse causality between some variables. For instance, working conditions, such as unpredictable schedules and inability to secure childcare, make it hard to determine causality because they are situated in a vicious cycle and they may feed on each other.

Finally, studies of low-wage workers' stress and health rarely use longitudinal data which help elucidate temporal relationships. Considering the costs and length of conducting longitudinal studies, it is understandable that there are more cross-sectional studies. In addition, qualitative studies are also rare, which may contribute to an understanding of the context within which

workers are exposed to stress and promote their health. Likewise, mixed-methods studies that investigate low-wage workers' stressful experiences and health problem are scarce.

By answering the overarching question related to multiple mechanisms through which both economic and non-economic aspects of low-wage work relate to the mental health of low-wage workers, this dissertation study addresses gaps in research in both substance and methodology. First, this study addresses an identified void in existing knowledge about vulnerable low-wage workers by considering both economic and non-economic aspects of low-wage work and further clarifying mechanisms through which stressors are related to mental health outcomes. Second, the methodological issues found in the existing studies have significant implications for this dissertation study. Information from further investigations, which draw on a sample of low-wage workers in the healthcare sector and uses a mixed-methods design, will not only add more detailed evidence to the current body of literature, but also offer a more nuanced and fuller understanding of low-wage workers' experiences.

2.5 Research Plan, Research Questions/Hypotheses Model

This dissertation examines multiple pathways through which both economic and non-economic dimensions of low-wage work relate to the mental health of low-wage workers. The conceptual framework for this dissertation study (Figure 2) draws from social stress theory and the reviewed literature. To explore multiple pathways from low-wage work to worker mental health, I use both quantitative and qualitative methods.

The quantitative study addresses the following four aims pertaining to the relationships among low-wage work, stressors, stress, and mental health outcomes after reviewing the existing

literature. The four aims of the study are as follows:

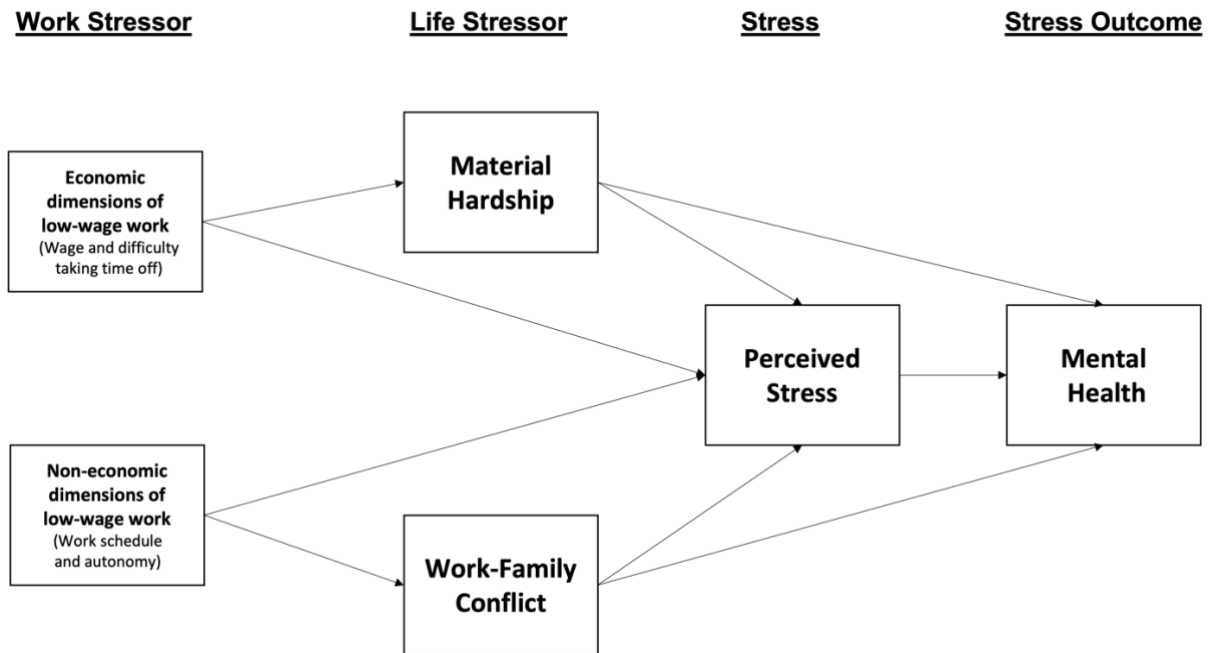
1. to explore the extent to which different working conditions relate to stressors such as material hardships and work-family conflict;
2. to examine the associations between multiple working conditions and perceived stress levels reported by low-wage workers;
3. to investigate the degree to which life stressors such as material hardships and work-family conflict relate to stress and mental health outcomes;
4. to understand the role of perceived stress in mediating the relationships between life stressors and mental health outcomes.

Building on social stress theory and the reviewed literature, to achieve the aims above, I formulated the following hypotheses:

1. Economic dimensions of working conditions (i.e., wages, difficulty taking time off) will be associated with material hardships with higher scores indicating more hardships (Hypothesis 1).
2. Non-economic dimensions of working conditions (i.e., non-standard work schedule, lower autonomy) will be positively associated with work-family conflict with higher scores indicating greater negative work-family conflict (Hypothesis 2).
3. Poor working conditions will predict higher levels of perceived stress (Hypothesis 3).
4. Perceived stress will positively relate to both material hardships and work-family conflict, while perceived stress will negatively relate to mental health outcomes (Hypothesis 4).
5. Both material hardships and work-family conflict will be indirectly linked to mental health outcomes via perceived stress (Hypothesis 5).

The qualitative study, which is designed to provide supportive and clarifying information to the quantitative study, aims to answer the questions that remain unanswered by the quantitative study. Specifically, the qualitative study investigates the quantitative findings that were found statistically insignificant in more depth despite the empirical findings. Finally, a mixed-methods analysis aims to integrate main findings from online survey data with qualitative data from in-depth interviews. The mixed-methods research addresses to what extent and in what ways qualitative interviews with low-wage hospital service workers served to contribute to a more comprehensive and nuanced understanding of the predicting relationships between low-wage work, stressors, stress, and health.

Figure 2 Conceptual Framework for the Stress Process



Conceptual framework for the stress process through which economic and non-economic dimensions of low-wage work shape unique stressors in workers' lives, and these stressors in turn predict stress and mental health outcomes among low-wage workers.

3.0 Methods

3.1 Research Design

This dissertation study investigated the relationships between working conditions inherent in low-paying jobs, life stressors, and mental health among low-wage health care workers in Pittsburgh, Pennsylvania. To this end, I used a cross-sectional concurrent embedded mixed methods design. Mixed methods research is an approach to inquiry that integrates both qualitative and quantitative forms, and the overall strength of a mixed methods study can be greater than either qualitative or quantitative research (Creswell & Plano Clark, 2007). In the concurrent embedded mixed methods design, methods are combined in a parallel fashion and carried out at roughly the same time, but primary and secondary methods are not placed on equal footing (Hesse-Biber & Leavy, 2011).

In this dissertation study, the quantitative study is a primary method, while the qualitative study, as a secondary method, supports the other method: QUANT(qual). Quantitative and qualitative data were both collected at approximately the same time. The qualitative study provides clarification or elaboration of research results from quantitative findings. The qualitative study supplements quantitative data and thus assists in understanding quantitative findings that do not appear to fit certain hypotheses. This study design is useful when either the quantitative or qualitative approach alone is inadequate to best understand a research problem or combining quantitative and qualitative approaches can provide a fuller understanding of the research problem (Creswell, 2009; Greene, Benjamin, & Goodyear, 2001; Greene & Caracelli, 1997).

I used both quantitative and qualitative data collected by the Pittsburgh Wage Study, which is a mixed-methods study investigating the effect of union-negotiated wage increases on the lives of low-wage workers and their families. As a team that consists of faculty in primarily social work and other disciplines as well as social work students at different program levels, we have collected three waves of pre-pandemic (cohort) data on unionized service, clerical, and technical workers (SCTWs) since 2017, and cross-sectional pandemic data on unionized nurses and SCTWs during the early phases of the COVID-19 pandemic. In February 2022, the Pittsburgh Hospital Worker Survey was launched to both unionized and non-unionized health care workers.

For quantitative data, a structured online survey was administered through Qualtrics, online survey software, over a six-month period from October 2019 to March 2020. A survey design provides “a quantitative or numeric description of trends, attitudes, and opinions of a population, or tests for associations among variables of a population, by studying a sample of that population” (Creswell & Creswell, 2018). For qualitative data, in-depth interviews with hospital workers were conducted by the trained members of the Pittsburgh Wage Study over a nine-month period from July 2018 to April 2019. Defined as “a particular kind of conversation between the researcher and the interviewee that requires active asking and listening (Hesse-Biber & Leavy, 2011, p94.)” in-depth interviews allow the researcher to have control over the line of questioning and gain rich qualitative data from interview participants on a focused topic (Creswell & Creswell, 2018; Hesse-Biber & Leavy, 2011).

There are several caveats for the data used in this dissertation study. First, it is important to note that the Pittsburgh Wage Study quantitative data are not panel, but cohort data. For qualitative data, our study team tried to retain as many interview participants as possible over the several waves of data collection. Also, I did not use the same wave of quantitative and qualitative

data, thereby leading to a 6-month time gap between the end of the second wave of qualitative data and the beginning of the third wave of quantitative data, which will be further discussed in the limitations section.

3.2 Sample

The target population for this dissertation study is unionized hospital service, clerical, and technical workers employed at Allegheny General Hospital (AGH) in Pittsburgh, Pennsylvania. If they worked at AGH, they were eligible to participate in the survey and/or the in-depth interview. To reach the target population, the Pittsburgh Wage Study collected quantitative and qualitative study samples using purposive and snowball sampling methods, respectively. The samples were collected from online surveys and in-depth interviews, and they were similar in gender, race/ethnicity, educational attainment, number of children, and hourly wage.

3.2.1 Quantitative Study Sample

A purposive sample was collected from online survey participants. Potential participants (about 1,000) – Service Employees International Union (SEIU) members employed at AGH – received batched text messages through an app called Hustle and email messages from the Pittsburgh Wage Study team encouraging their participation in the survey. Three-hundred fifteen workers started the survey; however, 75 participants opted not to participate in the survey, stopped at the first question, or skipped a majority of questions. Additionally, 34 duplicates were identified based on the three linking IDs (i.e., first two letters of mother's first name; two digits of the date

of birth; and first two letters of the name of the first elementary school attended) and demographic information (e.g., race/ethnicity, age, educational attainment, household income, hourly wage rate, and job title). The deletion of these duplicates resulted in a total of 206 participants. The sample initially included 206 participants who had completed the online survey. Of these, 39 had missing responses on material hardship, mental health, and yearly household income, which yielded an analytic sample of 167 participants.

Participants included in the analytic sample and those excluded because of missing and incomplete responses were similar in difficulty taking time off, work schedule, autonomy, material hardship, work-family conflict, perceived stress, mental health, and demographic characteristics; however, there was a statistically significant difference in age (p -value=0.01). Age in the excluded sample was compared to the analytic sample: In the excluded sample, there were more respondents who were 55 years old and over while there were fewer participants whose age was in the 25 to 34 age category. This difference was unlikely to influence the study's results because no other statistically significant differences were noted between the analytic sample and the sample with missing responses (see Appendix C).

3.2.2 Qualitative Study Sample

In-depth interview participants were recruited using a mix of purposive and snowball sampling (i.e., word of mouth in an expanding network of SEIU members at AGH). In the first wave, the study team recruited study participants by using several strategies: for example, attending union meetings where workers could sign up and sending Hustle messages and emails. Following an interview, the study team provided the participant with three contact cards and asked them to invite three fellow SEIU members they knew to participate in the study by handing them

the contact card and/or telling them about their interviewing experience. The participant was encouraged to have people call or email the study team for more information that could help them decide if they wanted to participate. The study team also used a purposive sampling method to recruit participants with a wide range of wage levels and job titles and thereby obtain a more representative sample. Forty-nine workers participated in the initial wave of interviews.

The study team started a Wave 2 recruitment process by sending a letter to unionized hospital service, clerical, and technical workers who had already participated in our Wave 1 interviews. Almost half (23 workers) of the W1 interview participants left their jobs at AGH or could not be reached, so about 40 percent (26 workers) of the Wave 2 interview participants were interviewed before in Wave 1. The study team attempted to maintain participants who had participated in our previous interview. As this was not likely, however, using a mix of snowball and purposive sampling methods (e.g., word of mouth, Hustle messages, emails), we recruited new participants and made sure that our qualitative sample would still reflect demographic compositions (e.g., race/ethnicity, wage levels, and job titles) comparable to previous interview participants. A total of 44 workers participated in the second wave of interviews.

3.3 Measures

The structured online survey included questions on mental health, various working conditions, hardships, work-family conflict, perceived stress, and demographic information. Three of these questions (i.e., mental health, work-family conflict, and perceived stress) derived from the validated scales, which have demonstrated validity and reliability: different types of validity (e.g., criterion and construct validity) have been established and the internal consistency reliability of

the three scales has been reported as acceptable to high (0.66–0.82) reliability (Taber, 2018). The interview guide included questions regarding their jobs (e.g., hours, shifts, overtime, and what they like and dislike about their jobs) as well as their lives outside of work (e.g., leisure time, household tasks, and their caregiving responsibilities).

3.3.1 Quantitative Measures

Quantitative measures are grouped in the following five domains: 1) mental health; 2) economic and non-economic dimensions of low-wage work (i.e., hourly wage, difficulty taking time off, work schedules, and autonomy); 3) life stressors (i.e., material hardships and work-family conflict); 4) perceived stress; and 5) demographic information (i.e., gender, race, age, and educational attainment). The summary of study variables is displayed in Table 1.

Table 1 Summary of Study Variables

Variable type	Variable		Data type
Dependent variables	Mental health		Continuous (Theoretical range 0-15)
Dependent variables/ Independent variables	Life stressors	Material hardship	Continuous (Theoretical range 1-17)
		Work-family conflict	Continuous (Theoretical range 1-4)
Independent variables	Economic dimensions of low-wage work	Hourly wage	Continuous
		Difficulty taking time off	0=Not difficult 1=Difficult
	Non-economic dimensions of low-wage work	Work schedules	0=Standard 1=Non-standard
		Autonomy	Continuous (Theoretical range 1-4)
Mediating variable	Perceived stress		Continuous (Theoretical range 0-16)
Covariates	Gender		0=male; 1=female
	Race/ethnicity		0=white; 1=people of color
	Age		1=18-24; 2=25-34; 3=35-44; 4=45-54; 5=55 and higher
	Education		1=High school or less, 2=Some college but no degree, 3=Trade or technical school, =Associate degree, 5=Bachelor's degree and higher
	Household size		Continuous
	Household income		Continuous

3.3.1.1 Mental Health

Mental health was assessed with three items of the Mental Health Inventory (MHI) of the 20-Item Short Form Health Survey (SF-20). Developed for use in the general population, the MHI is a brief self-administered questionnaire which includes scales to screen for anxiety and depression (Holmes, 1998; Thorsen, Rugulies, Hjarsbech, & Bjorner, 2013; Veit & Ware, 1983). This inventory consists of three items, such as “I have been a very nervous person,” “I have felt calm and peaceful,” and “I have felt downhearted and blue.” Respondents rated how much of the time during the past month they had experienced each characteristic using a 6-point Likert scale ranging from “0=All of the time” to “5=None of the time.” Item two was reverse coded so that higher score represent better mental health. The range of the summative score was 0 to 15. Total scores were derived by summing across the three items. The MHI scale has demonstrated criterion (e.g., prediction of long-term sickness absence) and construct validity (e.g., screening for mood disorders) as well as robust internal consistency reliability (Rumpf, Meyer, Hapke, & John, 2001; Thorsen et al., 2013). The coefficient alpha has been reported as 0.74-0.89 across studies (McCabe, Thomas, Brazier, & Coleman, 1996; McHorney & Ware, 1995; Rumpf et al., 2001); the coefficient alpha for the present sample was 0.82 (robust internal consistency).

3.3.1.2 Economic and Non-Economic Dimensions of Low-Wage Work

Economic dimensions of low-wage work include hourly wage rate and difficulty taking time off. Wages were measured by asking participants what their current hourly pay rate was. Difficulty taking time off was assessed by asking respondents how much they agreed or disagreed with the following statement: It is easy for me to take time off during work to take care of personal or family matters. Responses were rated on a 4-point Likert scale ranging from “1=Strongly disagree” to “4=Strongly agree.” These four categories were reverse coded and combined to create

a dichotomous variable (i.e., 0=not difficult to take time off; 1= difficult to take time off).

Respondents were further asked about non-economic dimensions of work, including work schedules and autonomy. The work schedule variable was dichotomously coded (0=non-standard work schedule; 1=standard work schedule). Although survey participants selected their usual work schedule from seven choices (1=day shift; 2=evening shift; 3=night shift; 4=rotating shift; 5=split shift; 6=irregular schedule; 7=other), only day shift was coded as standard work schedule and anything else but day shift was coded as 0 (non-standard work schedule).

Autonomy was measured using a set of three questions, such as “I am given a lot of freedom to decide how to do my own work,” “It is basically my own responsibility to decide how my job gets done,” and “I get to do a number of different things on my job.” Responses were rated using a 4-point Likert scale from “1=Strongly disagree” to “4=Strongly agree,” and the mean score of the responses was used. The potential range of autonomy is 1 to 4.

3.3.1.3 Material Hardship

Material hardship was measured with a set of 17 questions. Respondents were asked whether they had experienced any of 17 material hardships falling into six domains : 1) housing hardships (3 items; e.g., Stayed in a homeless shelter or slept on the street because you couldn't pay rent or mortgage); 2) medical hardships (3 items; e.g., could not afford medical treatment for you household, such as seeing a doctor or dentist); 3) utility hardships (3 items; e.g., could not pay utility bills on time); 4) essential expense hardships (3 items; e.g., could not afford car repairs, gas, or insurance); 5) food insecurity (2 items; e.g., how often did you worry about whether your food would run out before you got money to buy more); and 6) financial insecurity (3 items; e.g., An emergency would financially ruin you). Each item of material hardship is dichotomous (i.e., 0=Absence of hardship; 1=Presence of hardship). The material hardship variable is the total

number of hardships experienced, calculated by summing the affirmative responses across the 17 individual hardship items (for more information regarding material hardship items, see Appendix A).

There is currently no standardized measure of material hardship and, therefore, there is a lack of evidence about the reliability and validity of the hardship measure used in this dissertation study. However, the survey questions employed to measure material hardship in this study are also found in national and state surveys, such as the New York City Longitudinal Survey of Wellbeing, the Household, Income, and Labor Dynamics in Australia (HILDA) Survey (Melbourne Institute, 2016), and U.S. Household Food Security Survey Module (United States Department of Agriculture [USDA], 2012).

3.3.1.4 Work-Family Conflict

Work-family conflict was measured using a subscale of the work-family conflict scale (Gutek, Searle, & Klepa, 1991). The work interference with family subscale consists of the following four items: 1) After work, I come home too tired to do some of the things I'd like to do; 2) On the job I have so much work to do that it takes away from my personal interests; 3) My family/friends dislike how often I am preoccupied with my work while I am at home; and 4) My work takes up time that I'd like to spend with family/friends. Responses were rated using a 4-point Likert scale (1=Strongly disagree; 2=Disagree; 3=Agree; 4=Strongly agree). The mean score of the responses to this scale was used. Higher scores on this scale represent higher levels of work-family conflict. The coefficient alpha has been reported as .81-.83 across studies (Gutek et al., 1991; Judge, Boudreau, & Bretz, 1994); the coefficient alpha for the present sample was 0.66 (acceptable internal consistency).

3.3.1.5 Perceived Stress

Perceived stress was measured using the 4-item Perceived Stress Scale (PSS-4), which includes the following four items: 1) In the last month, how often have you felt that you were unable to control the important things in your life?; 2) In the last month, how often have you felt confident about your ability to handle your personal problems; 3) In the last month, how often have you felt that things were going your way?; and 4) In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? (Cohen, Kamarck, & Mermelstein, 1983). Respondents rated how often they had felt or thought about each characteristic over the past week using a 5-point Likert scale ranging from “0=Never” to “4=Very often.” The second and third items were reverse coded so that higher scores on this scale indicate higher levels of perceived stress. According to the scoring instructions, total scores of perceived stress were derived by summing across the four items (Cohen et al., 1983). The PSS-4 scale has shown criterion, factorial, concurrent, and known-groups validity as well as good internal consistent reliability (Cohen et al., 1983; Cohen & Williamson, 1988; Vallejo et al., 2018). The coefficient alpha for this scale has been reported as .60-.82 across studies (Cohen et al., 1983; Cohen & Williamson, 1988); the coefficient alpha for the present sample was 0.75 (good internal consistency).

3.3.1.6 Demographic Variables

Demographic and socioeconomic characteristics include gender (man or woman), race/ethnicity (white and people of color), and age categories (1=18-24, 2=25-34, 3=35-44, 4=45-54, 5=55 and higher), education categories (1=High school or less, 2=Some college but no degree, 3=Trade or technical school, 4=Associate degree, 5=Bachelor’s degree and higher), household size (the number of adults and children in the household including the respondent), and household

income. Race/ethnicity was collected with a range of options (i.e., Black, Latino, White, Asian, Native American/American Indian, and other) and an opportunity to self-describe. Because 7% of respondents reported non-white or non-black category, race/ethnicity was collapsed and recoded as 0=white and 1=people of color.

3.3.2 Qualitative Measures

Semi-structured interviews were conducted with hospital service, clerical, and technical workers to obtain qualitative data on their perspectives and experiences pertaining to wage increases, work, and lives outside of their work. The interview guide was developed by the Pittsburgh Wage Study team in June 2018. The interview guide began with questions regarding their jobs, such as hours, shifts, overtime, what they liked and disliked about their jobs, and employer benefits, and then addressed their lives outside of work and caregiving responsibilities. Interview participants were asked additional questions pertaining to their income, whether their income was sufficient to make ends meet and whether it affected their lives outside of work. Sample questions and sub-questions include (See Appendix B for the full interview guide):

- Can you tell me about a typical day at work?
- What hours/shifts do you work?
- Do you ever work overtime?
- What hours/shifts do you work?
- What do you like best about your new job?
- What do you find most challenging about your new job?
- What kinds of changes have there been in your unit/department during the past year?

- We've been told that employees can participate in several benefit programs, including health insurance, pension, 401(K), life insurance, disability insurance, and education. Are these the benefits available? Are there any other benefits that you know of?
- What do you (sometimes) have to forgo because you can't afford it?
- All of us sometimes have trouble making ends meet at the end of a month. How do you do it (i.e., make ends meet)? (Find out how often this happens, strategies used, respondent's reactions/feelings about using those strategies)
- With whom are you currently living?
- Are you responsible for any family members not living with you?
- Who do you rely on for help and support – for money, childcare, friendship, encouragement, cheering up?
- Who relies on for help and support – for money, childcare, friendship, encouragement, cheering up?
- How does your job affect the kinds of things you do outside of work?
- How did the raise you received last July influence the changes in your life (inside/outside of work) you've reported?

3.4 Data Collection

This dissertation study was approved by the University of Pittsburgh Institutional Review Board as a low-risk exempt protocol, ID #20080193. This study used the Wave 3 quantitative and Wave 2 qualitative data from the Pittsburgh Wage Study, which were approved as exempt from

the University of Pittsburgh Institutional Review Board in 2018 and 2019, respectively. The site for the Pittsburgh Wage Study is a hospital in Pittsburgh, Pennsylvania where workers organized a union and negotiated a contract. Quantitative data were collected from a structured online survey and qualitative data were obtained from in-depth interviews.

3.4.1 Quantitative Data Collection

A structured online survey was administered through Qualtrics, online survey software, over a six-month period from October 2019 to March 2020. The online survey was sent to all service workers who were part of the bargaining unit through an email or Hustle which includes a link to the online survey. Although web surveys generally get a lower response rate compared to other survey designs (Engel & Schutt, 2017), a variety of methods, such as email, bulk text messaging, and in-person event, were used to encourage participation from hospital workers to enhance response rate. After three months of the survey administration, the Pittsburgh Wage study team followed up with additional emails and Hustle messages. At the end of the six months, the study team attended meetings organized by the union and distributed surveys at the meetings. Study participants used the tablet PCs brought by the study team or their own smartphones to complete the survey.

The online survey was anonymous. Survey respondents proceeded to a survey page once they clicked the online survey link on their email or Hustle messages. The consent process occurred when they faced the first page outlining the purpose of the survey and its anonymous and voluntary nature. Participants were able to choose to participate in the survey by clicking "I want to participate." Once they clicked this response, informed consent was considered to be given by these respondents. At the end of the survey, respondents were directed to a separate questionnaire

requesting information so that payment could be made. The survey took 30 to 40 minutes to complete. Participants completing the survey received a \$20 gift card for their time. A power analysis was undertaken to determine what size sample was needed to detect effects.

3.4.2 Qualitative Data Collection

In-depth interviews with hospital workers were conducted to collect qualitative data over a nine-month period from July 2018 to April 2019. In-depth interviews were conducted at a time and place convenient and comfortable for participants, such as their workplace cafeteria and a coffee shop. When one-to-one interviews were not available, phone interviews were conducted instead at a time convenient for participants. Before the interview began, the interviewer from the study team reviewed with the participant the consent language on the first page of the interview guide and asked them if they had any questions about the information in the consent form. The interviewer provided the participant with a copy of the stipulations of the consent process and the contact information for the study. Each interview lasted about an hour. Interviews were audio-recorded with consent and transcribed through a professional transcription service. The interviewer also wrote up an electronic field note after each interview. The Institutional Review Boards of the University of Pittsburgh approved all protocols.

The Pittsburgh Wage Study team first contacted workers who participated in wave 1 qualitative interview. When interview participants were no longer able to participate in our wave 2 interview, the research team recruited new participants by attending union meetings and other events and asking workers to give study information to their colleagues and ask them to contact us. When selecting new participants, screening questions were asked in order to ensure that our participants had demographic characteristics analogous to previous interview participants in terms

of race/ethnicity, hourly wage, and job titles. Interviews were semi-structured, including a set of questions and probes asking workers about their jobs, lives inside and outside of work, family, hardships, and effects of wage increases. Interview participants received a \$40 gift card for their time.

3.5 Data Analysis

Data analysis was divided into three phases. In the first phase, path analysis was conducted to estimate path models from both economic and non-economic working conditions to worker mental health. In the second phase, thematic content analysis was conducted to explore in more depth quantitative findings that did not appear to fit certain hypotheses and thereby provide clarification or elaboration to those findings. In the last phase, a mixed methods analysis was performed to integrate quantitative and qualitative findings.

3.5.1 Quantitative Data Analysis

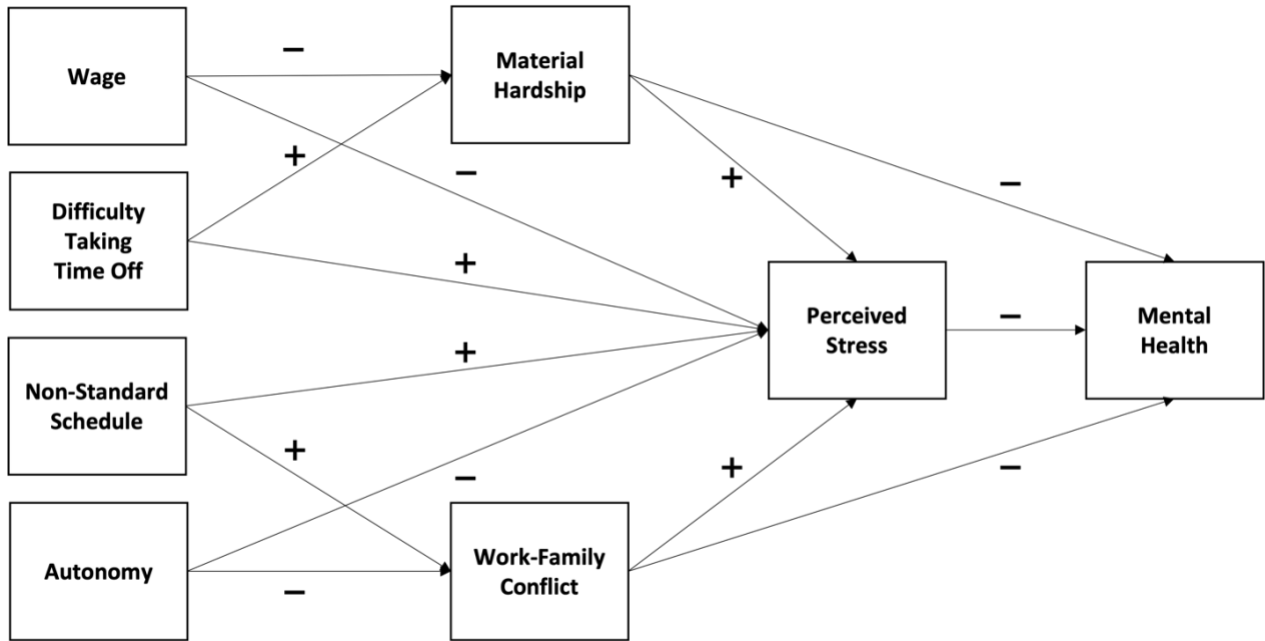
Data analysis was performed in R (version 3.5.2). Descriptive statistics were obtained to report frequencies, means, and standard deviations of all variables and assess missing data and deviations from normality. I handled missing data using listwise deletion in which cases are removed completely if they do not have data on all variables in the analysis. Further, bivariate analysis was conducted to examine the correlations between the variables analyzed for this study.

To test study hypotheses, path models were estimated using R studio (lavaan 0.6-3 package) to test for the paths among multiple variables including working conditions, life stressors,

perceived stress, and mental health. Path analysis is a form of structural equation modeling (SEM) where variables in the model are all manifest. SEM was chosen to test for the paths among multiple variables with various measures simultaneously and the existence of mediated effects (Hayes, 2018; Lei & Wu, 2007). One of the primary advantages of this method versus generalized linear modeling is that SEM can be used to study causal relations among multiple variables with various measures (Lei & Wu, 2007). This method was selected as the most appropriate statistical approach since the analysis involves studying causal paths among multiple variables. A robust diagonally weighted least squares (DWLS) estimation was used to address the non-normality of both ordinal and continuous variables. The DWLS method provides more accurate parameter estimates in situations where the assumption of multivariate normality is severely violated and/or data are ordinal (Bandalos, 2014; Finney & DiStefano, 2013; Kline, 2016).

In estimating the hypothesized path model (see Figure 3), sociodemographic variables (i.e., race, age, gender, educational attainment, and household income) were statistically controlled for in the path model. These control variables were selected because earlier work has shown that they are associated with material hardships, work-family conflict, and health (Katz et al., 2018; J. Kim et al., 2016; Marshall, Thorpe, & Szanton, 2017; Neckerman et al., 2016; Thoits, 2010; Voydanoff, 1988). The goodness of fit of the SEM models was evaluated based on a range of fit indices including the χ^2 statistics, the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardized root mean square residuals (SRMR). Values close to 0.95 or higher for CFI and TLI, levels of 0.06 or lower for RMSEA, and levels of 0.08 or lower for SRMR indicate models fit the data well (Hu & Bentler, 1999).

Figure 3 Hypothesized Model



Hypothesized model showing a relationship between economic/non-economic dimensions of low-wage work, stressors, perceived stress, and mental health.

3.5.2 Qualitative Data Analysis

Qualitative data analysis for this dissertation study followed a series of steps: 1) data preparation; 2) data exploration; 3) data reduction; and 4) data interpretation. These steps, however, were not clearly delineated because data collection and data analysis are iterative processes (DeWalt & DeWalt, 2011; Hesse-Biber & Leavy, 2011). NVivo 11 (QSRInternational, 2015), a qualitative data analysis computer software, was used for the qualitative data analysis involving these steps.

For data preparation, interviewers from the Pittsburgh Wage Study recorded information from interviews by audio recording with participant consent and electronic field notes labeled with the participant's identification number within a day after each interview was conducted. This field

note entails a general description of the interview, such as key points, general impressions, anything surprising or interesting that came up during the interview, and any critical, non-verbal information (i.e., laughter, pauses, and interruption). All in-depth interviews were conducted from July 2018 through April 2019. After the completion of Wave 2 in-depth interviews, all interview recordings were transcribed verbatim with limited non-verbal additions by an outside company that specializes in doing transcriptions, and all names were redacted. Electronic field notes written by the interviewer and all interview transcripts in the Microsoft Word file format were imported and stored into NVivo 11.

The data exploration phase entails reading through textual data and memoing about it. A codebook was developed as the first step of this phase. As documents that become part of the analytical record and the audit trail, codebooks involve the codes or labels that are assigned to the categories for which the text is coded, the descriptions of the codes, and specific examples of the codes (DeWalt & DeWalt, 2011). Creating a codebook is an integral part of qualitative data analysis particularly when working in a research team. The initial codebook was inductively developed by two members of the research team from initial coding of three wave 1 interviews. For wave 2 coding, this codebook was then modified to capture more details on several areas: 1) changes in the unit/department during the past year; 2) eligibility or application for public benefits; 3) budget worksheet for clarity and completeness; 4) cumulative effect of wage increases on workers' lives inside and outside of work.

In the exploration phase, two types of memos, including case summary memo (i.e., participant characteristics, strong perspectives and key values of the participant, and impressions about the respondent) and case processing memo (i.e., sections coders are not sure how to code and codebook problems) were written up in NVivo. After exploring data, coding or data reduction

began. Multiple members of the research team applied the wave 2 codebook to interview transcripts using descriptive thematic coding in NVivo. In order to enhance reliability of the study, the researchers from the Pittsburgh Wage Study assessed inter-coder reliability and created an audit trail which documented all aspects of the qualitative research (e.g., decisions of meetings and discussions). One interview was used to establish interrater reliability (IRR) ($k = .41$, IRR = 97.91 to $k = 1$, IRR = 100, which is considered almost perfect agreement) (Landis & Gary, 1977).

As the final process in qualitative data analysis, interpretation refers to “the development of ideas about how things are patterned, how they fit together, what they mean, and what causes them (description, interpretation, explanation)” (DeWalt & DeWalt, 2011, p.177). Data interpretation started by exporting from NVivo to Word the content coded at multiple nodes, which help offer clarification to the quantitative finding that did not seem to align with certain hypotheses. These data were inductively analyzed to identify new themes that emerge from the data. After the themes linked to the data were identified, patterned responses and differences in responses were discovered. Conclusions were derived from these identified patterns and uncovered conceptual relationships.

3.5.2 Establishing Trustworthiness

Trustworthiness is defined as the soundness and believability of an inquiry as well as of its findings that make it noteworthy to the researcher and her audiences (Lincoln & Guba, 1985). To establish trustworthiness in my qualitative study, I used the following four criteria set by Lincoln and Guba: credibility, transferability, dependability, and confirmability.

3.5.2.1 Credibility

Credibility is defined as ‘truth value (i.e., adequate representation of the reality being investigated)’ and is used as a qualitative equivalent of quantitative internal validity (Lincoln & Guba, 1985). To enhance credibility, I used several strategies, such as prolonged engagement, triangulation, and peer debriefing. During my PhD training, I have participated in the process of preparation, exploration, reduction, and interpretation of each wave of qualitative data for the Pittsburgh Wage Study. My prolonged engagement with participants allowed me to familiarize myself with their jargon (e.g., ‘12/7’, ‘casual’, ‘split shift’, ‘rotating’, and ‘401K’) and to better understand the context (e.g., work culture and environment) in which these participants were embedded. I also triangulated data via different methods (i.e., survey and in-depth interviews). Using multiple methods of data collection enabled me to compare observations from survey data with information that a participant shared with our team in an interview. The final technique that I used to augment credibility was peer debriefing, in which I was able to discuss with the Pittsburgh Wage Study team a wide range of issues throughout the qualitative data collection, analysis, and write-up process: for example, what was missing from the interview guide? What worked or did not work during the interview? What impact did our positionality have on our interviews and how we interpreted them? Did we all label and organize our qualitative data in a similar way? Overall, the techniques of prolonged engagement, triangulation of data collection methods, and peer debriefing helped increase the probability that my findings would be more credible.

3.5.2.2 Transferability

Transferability refers to the applicability of the findings of a particular inquiry to other contexts or with other participants and is identified as a qualitative substitute for external validity (Lincoln & Guba, 1985). Although what constitutes proper thick description is still unclear, one

thing that is clear is that the researcher is responsible for providing the widest possible range of information for inclusion in the thick description (Lincoln & Guba, 1985). The transferability of qualitative data can be achieved as the reader processes the thick descriptions and sees the lived reality of the participants (Geertz, 1973). Hence, I tried to provide the thick descriptions of how different sources impeded or promoted positive work-family interaction and how negative work-family interaction manifested itself among the participants; I anticipate that this will help readers to make more sense of the applicability of the findings to other contexts or with other participants. Further, our study team engaged in purposive sampling to ensure not only the representativeness of the sample across waves but also the diversity of the sample in terms of rich details. To this end, we recruited workers with a diversity of family composition (e.g., parent workers) and race/ethnicity (e.g., black workers). Presenting diverse voices contributed to deep, dense, and detailed descriptions of the case.

3.5.2.3 Dependability

As a qualitative equivalence of quantitative reliability, dependability indicates the degree to which the findings can be replicated with the same (or similar) participants in the same (or similar) context (Lincoln & Guba, 1985). In qualitative research, however, the phenomenon being studied and the information provided by the participants do not remain constant; therefore, replication is unlikely. The more central question to address is whether the findings are consistent with the data. To ensure the consistency between the data collected and the findings, I attempted to document a dense description of the research process and the research product. In the form of an audit trail and analytic memos, I detailed how data were collected, how categories were developed and refined, how decisions were made throughout the research process, and how I reached my interpretations of the case from the data.

3.5.2.4 Confirmability

Confirmability refers to the degree to which the findings are influenced by participants and research conditions, not by the biases, motivations, or perspectives of the researcher (Lincoln & Guba, 1985). Confirmability can be enhanced by the researcher being reflexive about positionality and attentive to interpretations and decision-making throughout the research process. Reflexivity is a process of reflecting on how the researcher's biases, values, and personal background shape their interpretations formed during a study (Creswell, 2009). Thus, I tried to practice and maintain self-reflexivity concerning my epistemological stance. Our study team documented in field notes the possibility that we may be inherently and unknowingly biased, and our positionality may have impacted the research process and outcome, and we also discussed this through peer-debriefing sessions. I described in analytic memos how my interpretations of the participants' experiences may have been shaped by my cultural background, beliefs, and experiences, which further helped improve the confirmability of this study.

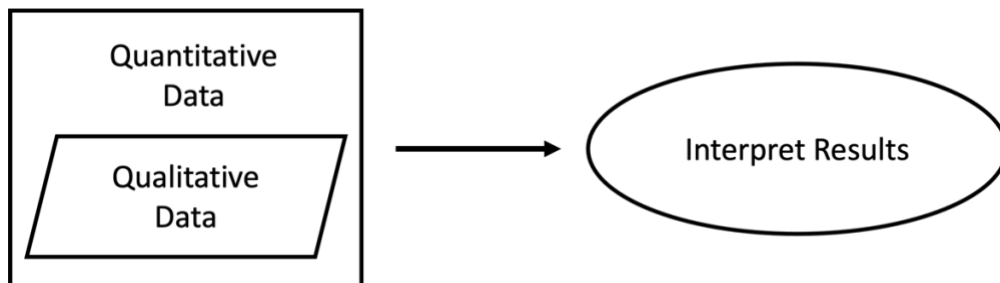
3.5.3 Mixed-Methods Integration

The concurrent-embedded mixed methods design integrated main findings from online survey data with those from in-depth interview data (see Figure 4). The mixed-methods research addresses to what extent and in what ways qualitative interviews with low-wage hospital service workers served to contribute to a more comprehensive and nuanced understanding of the predictive relationships between low-wage work, life stressors, stress, and mental health, via mixed methods analysis.

A major justification for using mixed methods in this study is the fact that work-family conflict (WFC) was not adequately captured by survey measures and responses. Studies have not

reported sufficient information about validity and cultural sensitivity of the WFC scale used in the quantitative study, so it is likely that the scale may not work best for low-wage hospital workers or workers of color, thereby failing to capture the complexity of these workers' struggles in both work and home domains. Therefore, the gap in the quantitative study provided a prime opportunity for further exploring how work schedules or other factors hindered or promoted positive work-family interaction among these workers in their own words through open-ended questions in the context of in-depth interviews.

Figure 4 Concurrent-Embedded Mixed Methods Integration



4.0 Quantitative Research Results

4.1 Descriptive Results

Table 2 displays the descriptive statistics of the quantitative sample. Workers in the sample were primarily women (83%). Most workers identified as either White (53%) or Black (42%). Workers were relatively young. Almost 50% were 18 to 34 years old. The majority of the participants received education beyond high school: 42% had an associate degree or higher; 38% attended college but did not earn a degree; and 21% had a high school diploma or less. Their average hourly wage was \$16.51 (Mdn=15.60, SD=3.74, Range=10.97-30) and average annual household income was \$41,946. More than half of the participants reported that it was easy to take time off during their work to take care of personal or family matters. Two-thirds of workers (67%) had a standard work schedule (i.e., day shift). Workers reported experiencing on average six different hardships (out of the 17 assessed).

Table 2 Quantitative Sample Characteristics (N=167)

Characteristics	n	%
Gender		
Women	138	83%
Men	29	17%
Race		
White	88	53%
Black	70	42%
Latino	2	1%
Asian	1	1%
Multiracial	2	1%
Other but not specified	4	2%
Age		
18-24 years	21	13%
25-34 years	55	33%
35-44 years	24	14%
45-54 years	33	20%
55 and over	34	20%
Education		
High school diploma or less	34	21%
Some college with no degree	63	38%
Associate degree or higher	67	40%
Other but not specified	3	2%
Number of children under 18		
0	115	69%
At least 1 child	50	30%
Hourly wage rate (M, Mdn, SD, Range)	(16.51, 15.60, 3.74, 10.97-30)	
Annual household income (M, SD, Range)	(41,946, 32,400, 10,000-150,000)	
Difficulty taking time off		
Not difficult	92	55%
Difficult	75	45%
Work schedules		
Standard	112	67%
Non-standard	55	33%
Autonomy (M, SD, Range)	(1.68, 0.64, 0-3)	
Hardships (M, SD, Range)	(6.03, 3.54, 0-15)	
Work-family conflict (M, SD, Range)	(1.81, 0.42, 0.75-3)	
Perceived stress (M, SD, Range)*	(6.90, 3.48, 0-15)	
Mental health (M, SD, Range)**	(9.23, 3.65, 1-15)	

Note. Higher scores indicate greater autonomy, work-family conflict, perceived stress, better mental health, and more material hardship. *Higher scores on the perceived stress scale represent higher levels of perceived stress. **Higher scores on the mental health scale represent better mental health.

4.2 Bivariate Analysis Results

The correlation matrix of study variables is shown in Table 3. First, better mental health was negatively associated with higher perceived stress ($r=-.74$, $p<.001$), more material hardships ($r=-.45$, $p<.001$), higher work-family conflict (WFC) ($r=-.37$, $p<.001$), and difficulty taking time off ($r=-.23$, $p<.01$), while positively associated with higher autonomy ($r=.29$, $p<.01$).

Further, higher levels of perceived stress were positively correlated with more material hardships ($r=.51$, $p<.001$), higher levels of WFC ($r=.36$, $p<.001$), and difficulty taking time off ($r=-.26$, $p<.001$), whereas negatively correlated with lower levels of hourly wage ($r=-.22$, $p<.01$) and lower autonomy ($r=-.26$, $p<.001$). More material hardships were positively related to higher WFC ($r=.32$, $p<.001$) difficulty taking time off ($r=.37$, $p<.001$), while negatively related to lower hourly wage ($r=-.32$, $p<.001$). Additionally, neither economic nor non-economic working conditions were significantly correlated with WFC.

Among covariates, race ($r=.21$, $p<.01$) and age ($r=.19$, $p<.05$) were positively related to mental health. Age ($r=-.20$, $p<.05$) and household income ($r=-.29$, $p<.001$) were negatively associated with perceived stress. Furthermore, education ($r=-.27$, $p<.001$) and household income ($r=-.38$, $p<.001$) were negatively correlated with material hardship. Household income ($r=-.17$, $p<.05$) also was negatively related to WFC.

4.3 Path Analysis Results

The hypothesized path model provided an excellent fit to the data ($N=167$, $(\chi^2(17)=18.431$, $p > .05$, CFI=0.987, TLI=0.995, RMSEA=0.023, 90% CI: 0.000, 0.076, SRMR=0.034; The fit

indices reported here are robust estimates). Figure 5 and Table 4 illustrate the results from path analysis modeling the relationships between working conditions, material hardship, WFC, perceived stress, and mental health among a sample of 167 low-wage health care workers. First, I predicted that the economic dimensions of working conditions would be positively associated with material hardships (Hypothesis 1). Wages and difficulty taking time off were both negatively related to material hardship (wages $\beta=-.15$, $p<.05$; difficulty taking time off $\beta=-.31$, $p<.001$). Therefore, workers who earned higher wages and found it not difficult to take time off were more likely to experience fewer hardships.

Additionally, I further proposed that the non-economic aspect of working conditions would be positively associated with WFC (Hypothesis 2). Neither work schedules nor autonomy levels were significantly associated with WFC. The findings that work schedules were not associated with WFC are inconsistent with earlier studies, which have shown a consistent relationship between work schedules and WFC. Therefore, these findings informed the research questions of the qualitative part of the dissertation study, thereby furthering the understanding of the relationship between work schedules and WFC.

Further, I hypothesized that working conditions would predict higher levels of perceived stress (Hypothesis 3). Only autonomy was negatively associated with perceived stress ($\beta=-.24$, $p<.001$) in the presence of the paths to and from material hardships and WFC. Hence, workers with higher levels of autonomy were likely to report lower levels of perceived stress. Other working conditions, however, were not significantly related to perceived stress while the paths to and from material hardship and WFC were present in the model.

Additionally, I predicted that perceived stress would be positively associated with both material hardship and work-family conflict, while negatively associated with mental health

outcomes (Hypothesis 4). Consistent with these hypotheses, perceived stress was positively related to material hardship ($\beta=.48$, $p<.001$) and WFC ($\beta=.22$, $p<.01$), whereas it was negatively related to mental health ($\beta=-.77$, $p<.001$). Workers who experienced material hardships or WFC were more likely than their counterparts to indicate higher levels of perceived stress and thereby poor mental health outcomes.

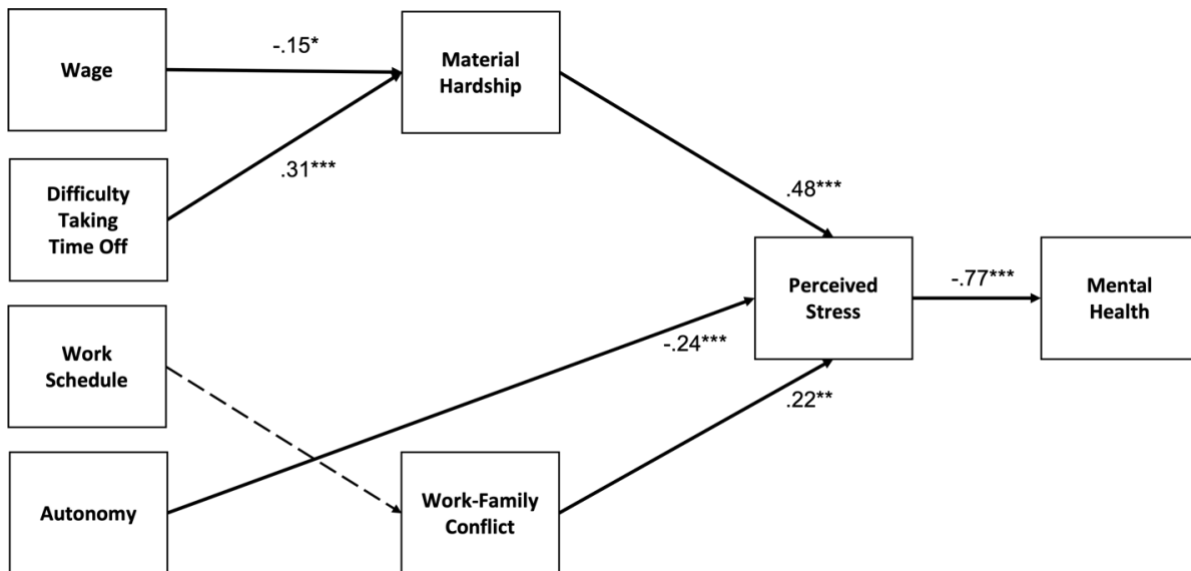
Table 3 Correlation Matrix of Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Mental health	(.82)													
2. Stress	-.74***	(.75)												
3. Hardship	-.45***	.51***	(.85)											
4. WFC	-.37***	.36***	.32***	(.66)										
5. Wage	.04	-.22**	-.32***	-.13	-									
6. Time off	-.23**	-.26***	-.37***	-.08	.07	-								
7. Work schedule	-.03	-.03	-.00	-.10	.18*	.14	-							
8. Autonomy	.29**	-.26***	-.13	.03	-.03	.36***	.08	(.76)						
9. Gender	-.13	.12	.11	.07	.14	-.01	.08	.03	-					
10. Race	.21**	.03	.11	.05	-.32***	-.05	-.03	.10	-.07	-				
11. Age	.19*	-.20*	-.01	-.11	.28***	.02	.21**	.15*	-.21**	-.03	-			
12. Education	.01	-.13	-.27***	-.12	.34***	.07	-.05	-.13	.04	.30***	-.12	-		
13. HH size	.05	-.02	.02	.04	-.03	-.09	-.08	-.04	.09	-.06	-.13	-.12	-	
14. HH income	.14	-.29***	-.38***	-.17*	.55***	.11	.04	-.05	.10	-.30***	.06	.31***	.10	-

Note. Reliability coefficients of items on each scale are reported in parentheses. Higher scores indicate greater autonomy, work-family conflict, perceived stress, better mental health, and more material hardship. Race is coded as 0=White, 1=People of color. Gender is coded as 0=Male, 1=Female. Age is coded as 1=18-24, 2=25-34, 3=35-44, 4=45-54, 5=55+. Education is coded as 0=High school or less, 1=Some college but no degree, 2=Trade or technical school, 3=Associate degree, 4=Bachelor's degree and higher. * p<0.05; ** p<0.01; * p<0.001.**

Finally, I proposed that both material hardships and work-family conflict would be indirectly linked to mental health via perceived stress (Hypothesis 5). Table 5 presents the results from mediation analyses to test for indirect effects of material hardship and WFC on mental health via perceived stress. Perceived stress was found to play a significant role in mediating the relationship between material hardships/WFC and mental health (material hardship indirect effect $\beta=-.77$, $p<.001$; WFC indirect effect $\beta=-.16$, $p<.01$). While neither material hardship nor WFC was directly related to mental health, both were indirectly related to mental health through stress. Therefore, workers experiencing hardships or WFC were more vulnerable to stress, which, in turn, compromised their mental health. This result highlights perceived stress as a potential mediating mechanism that links both material hardship and WFC to worker mental health.

Figure 5 The Paths from Multiple Working Conditions to Worker Mental Health



Note. Paths in bold were significant at $p<.05$; only significant paths were displayed ($N=167$, $\chi^2(17)=18.431$, $p > .05$, $CFI=0.987$, $TLI=0.995$, $RMSEA=0.023$, 90% CI: 0.000, 0.076, $SRMR=0.034$; The fit indices reported here are robust estimates) * $p<0.05$; ** $p<0.01$; *** $p<0.001$.

Table 4 Standardized Path Coefficients for Paths from Working Conditions to Mental Health Outcomes

	Material hardship	Work-family conflict	Perceived stress	Mental health
Wage	-.15 (.08)*	.03 (.06)	.08 (.08)	-
Time off	-.31 (.30)***	-.07 (.24)	-.01 (.34)	-
Work schedule	-	-.07 (.40)	.10 (.50)	-
Autonomy	-	.06 (.12)	-.24 (.10)***	-
Material hardships	-	-	.48 (.09)***	-.03 (.06)
Work-family conflict	-	-	.22 (.10)**	-.09 (.10)
Perceived stress	-	-	-	-.77 (.07)***

Note. Standardized estimates are presented. Standard errors are reported in parentheses. Higher scores indicate greater autonomy, work-family conflict, perceived stress, better mental health, and more material hardship. * p<0.05; ** p<0.01; * p<0.001.**

Table 5 Mediation of the Effects of Life Stressors on Mental Health Outcomes through Perceived Stress

	Mental health			
	β	SE	Z	p
Material hardship	-.37	.07	-4.88	.000
Work-family conflict	-.16	.09	-2.99	.003
Total indirect effects	-.53	.11	-5.49	.000
Total effects	-.66	.12	-7.02	.000

Note. Standardized estimates are presented. Higher scores indicate greater autonomy, work-family conflict, perceived stress, better mental health, and more material hardship.

5.0 Qualitative Research Results

5.1 Descriptive Results

Table 5 presents the descriptive statistics of the qualitative sample. Workers in the sample were primarily women (73%). Most workers identified as either White (53%) or Black (42%). Workers were relatively young as their average age was 46 years old. There were more single participants (57%) than married participants (43%). Over 60% had no children under 18. Seventy percent of the participants had some education beyond high school; 38% had an associate degree or higher while 32% attended college or technical school but did not earn a degree. Their average hourly wage was \$16.89 (Mdn=16.00, SD=4.74, Range=11.25-34.33), and their average length of employment was 7.23 years (Mdn=3.64, SD=9.50, Range=.25-35). Approximately 80% worked a standard work schedule (i.e., day shift).

Table 6 Qualitative Sample Characteristics (N=44)

Characteristics	n	%
Demographics		
Gender		
Women	32	73%
Men	12	27%
Race		
White	23	53%
Black	20	42%
Biracial	1	2%
Age (M, SD, Range)	(46.45, 11.24, 23-63)	
Marital status		
Married	19	43%
Single	25	57%
Number of dependent children		
0	27	61%
1	7	16%
2	4	9%
3 and more	6	14%
Socioeconomic characteristics		
Education		
High school diploma or GED	13	30%
Some college with no degree	14	32%
Associate degree or higher	17	38%
Years of employment (M, Mdn, SD, Range)	(7.23, 3.64, 9.50, .25-35)	
Hourly wage rate (M, Mdn, SD, Range)	(16.89, 16.00, 4.74, 11.25-34.33)	
Work schedules		
Standard	36	82%
Non-standard	8	18%

Note. Standard work schedules include day shift, while non-standard work schedules include flextime work schedules and evening, night, irregular, and rotating shifts.

5.2 Thematic Analysis Results

Thematic content analysis was conducted to explore in more depth the relationship between work schedules and work-family conflict, which was found to be insignificant in quantitative data despite empirical evidence from prior studies. This phase of analysis began with reading portions of interviews pre-coded as ‘Schedule and hours,’ ‘Family,’ ‘Household tasks and housework,’ and ‘Leisure time’ to answer the research questions pertaining to the link between work schedules and work-family conflict: If work schedules contribute to work-family conflict, “What are low-wage workers’ experiences of work-family conflict based on their work schedules?” However, if work schedules are not a contributing factor for work-family conflict, “What are other factors than work schedules that promote or hinder positive work-family interaction?”

As presented in Table 5, over 60% of the participants were single workers. While the nature of work-family conflict may differ from how it manifests with workers with partners and dependent children, single workers without partners and dependent children may still experience WFC. While often considered having “no family,” single workers in fact they have a variety of family, relationship, and personal demands, which often interfere with work and thereby result in inter-role conflict (Buss, Casper, Marquardt, & Roberto, 2016). Work-family conflict entails not only the familial demands of those who live with the worker or live outside the household, but also the personal demands of the worker, which occur outside of work hours and does not necessarily involve their family, friends, or relationships. Thus, all workers, regardless of their parenting status, marital status, or their type of relationship, may experience work-family conflict in a broad sense.

There is an important distinction between standard and non-standard work schedules. Traditional work schedules are typically 40 hours per week performed during daylight hours

(Presser & Cox, 1998), and the Fair Labor Standards Act stipulates that employees may not be employed for more than 40 hours in any work week unless they are compensated at one and one-half times their regular pay rates for the overtime hours (U.S. Department of Labor, 2008). However, this definition does not perfectly fit the unique work environment of hospitals because they are open and operating 24/7. There is a wider range of work schedules than other low-paying industries such as fast food or customer service. Therefore, in this study, standard work schedules were defined as those that are more than 36 hours per week performed during most of the daylight hours but not necessarily from 8 to 4 or from 9 to 5. Although even within the standard work schedules in the hospital, participants' work start time greatly varies from 5 a.m. to 12 p.m., their schedules were still defined as standard due to working during most of the daylight.

In contrast, non-standard or nontraditional work schedules are defined as those that occur outside the typical daytime hours and that change substantially from day to day or week to week (Johnson, Kalil, & Dunifon, 2012). The definition of non-standard work schedules in this study is not far from the typical definition: evening shift (at least half of the work hours occur between 4 p.m. and midnight; night shift (work hours occur during the night time), rotating shift (with hours changing regularly between day, evening, and night shifts; irregular schedules, and flex time (work schedules other than eight hours per day during a five-day week) are categorized as non-standard work schedules (Kunst et al., 2014). Working either 8-hour or 12-hour shift schedules was considered one of the sources for creating WFC, but it was not taken into account when categorizing either standard or non-standard work schedules.

Based on these definitions, I categorized workers' experiences into either low or high WFC. In the pre-coded interview transcripts, when I identified words connoting negative emotions and sentiments (e.g., 'tired,' 'exhausted,' and 'strain' in relationship) or when interview

participants directly referenced the effect of work schedules on their personal/family lives (e.g., ‘without getting proper rest,’ ‘can’t do anything with children,’ and ‘impatient’ with children’), I defined these experiences as demonstrating high levels of WFC. When I identified either the absence of such negative terms or the presence of positive terms (e.g., ‘work schedule is healthier for me,’ ‘enjoy myself,’ ‘can do a little more for myself’) or when interview participants made no direct reference to the effect of work schedules on their lives outside of work, I defined these experiences as having low levels of WFC.

After defining low and high levels of WFC, I then delved into what contributed to or prevented WFC. I found that the role of work schedules in the participants’ experiences of WFC is two-fold. First, standard work schedules serve as a protective factor against WFC by providing workers with enough time and energy for their families and personal lives after work. Second, non-standard work schedules interfere with family time and activities by depriving workers of time and energy or complicating planning for themselves and their families. However, WFC cannot be entirely explained by either standard or non-standard work schedules. An in-depth examination of WFC revealed that there are multiple sources of WFC, or lack thereof, besides work schedules. I categorized these into either work schedules or other factors (e.g., standard schedules that are not protective, family support, family issues, working longer than normal hours). Based on the levels and sources of WFC, I divided 44 interview participants into four groups:

1. Group 1: Low WFC and Standard Schedules
2. Group 2: High WFC and Non-Standard Schedules
3. Group 3: Low WFC and Other Factors
4. Group 4: High WFC and Other Factors

5.2.1 Group 1: Low WFC & Standard Schedules

Although over 80% of participants worked standard work schedules in the qualitative sample, only eight workers described the benefits of working standard work schedules. These workers were categorized as Group 1 [Low WFC & Standard Schedules]. All workers in this group were assigned standard work schedules and 8-hour shifts. They described having a healthy work-family balance or at least no conflict between their work life and family life because their standard work schedules afforded these workers with sufficient time and energy after work.

The advantages of standard schedules were commonly reported by working parents. For certain workers, their past experiences, either working a 12-hour shift or part-time, served as a point of comparison for determining the relative benefit of having standard schedules. For instance, a single mother working as a housekeeper from 7 a.m. to 3:30 p.m. 5 days a week recently shifted from part-time to full-time work. When she worked part-time, she overworked herself by working seven to eight days consecutively sometime. For her, working longer hours used to be more of a problem than work schedules. After switching to full-time employment, her work schedule no longer seemed to affect her energy levels required for things that she and her teenage son did together, such as bowling and watching plays.

Similarly, a single parent worker who had three minor children offers a prime example of how standard work schedules can be a protective factor for WFC. She further emphasized relative advantages of an 8-hour day shift over a 12-hour night shift. She described how she used to feel after working overnight at work and how her energy levels influenced her parenting:

I would come home and I was literally just dead to the world. I couldn't focus or even think about doing anything else but going to sleep ... Because when I was doing the 12 hours and whatever, I wasn't really there to discipline or make them [my children] do their

chores. I was at work all day long, and when I come home, it's just like "I don't want to deal with this, I'm tired," whatever.

This worker no longer felt *dead to the world* after changing her work schedules. Her current standard schedule (7:45 a.m. to 4:15 p.m. 5 days a week) with an 8-hour shift appeared to make a difference in her family life as far as time for children and energy and stress levels:

I would say it's [*my current schedule*] definitely a lot better, because, like I was just saying, I actually have the time to sit down and say, "Do you need help with this? I can help you." Or, if they're working on a project, I actually have time to help them. Before, it would be, "I'm so tired, I can't even focus." Or "I'm so stressed just from the day that I've had." It's kind of like, "Ok, I just want to go to my room and tune everything out." So, I would definitely say that has changed, for sure." "My son is in summer school right now. So just Monday, he came home, and he had some homework that he had to do, and I was actually able to sit down at the table with him, and it wasn't almost time to get up and go to work again. So, I actually had the time to sit down and spend with him on that.

Although her *better* schedule played a primary protective role in work-family interaction, she had other sources of support that may also have contributed to better work-family interaction. Her mother provided not only financial support but also childcare when she was not home. She even quit her stressful second job which allowed no time to spend with her children. Her case suggests an important reason why achieving a healthy balance between work and family lives can be challenging for many other low-wage workers. These workers may be unable to afford to secure quality childcare, receive family support, or quit their second job, which is commonly seen among low-wage workers (Azuma, DeBaryshe, Gauci, & Stern, 2020; Gringeri, 2001; Jones, 2017)

Parents are not the only beneficiary of standard schedules. Single workers also benefit from these schedules by having more personal time. For example, a chart abstractor working 5 a.m. to 2:30 p.m. Monday through Friday reported having a better schedule that fit and worked for him. Both his early morning schedule and changes in his family responsibilities (i.e., no longer taking of his parents) allowed him to ‘beat the traffic out’ and have more time in his personal life:

I think the—it’s both [*early morning schedule and changes in family responsibilities*]. Because I still did the things, when I worked as a monitor tech, that I like, but I didn’t get to do them as often. You know, because I was working two 12’s, and two 8’s. So by the time I get home, I was exhausted. You know? Now, I’m working 8-hour shifts, or a little longer on this day, so I can go, cut out early on this day, or whatever. So, yeah, I’m enjoying myself, I can do a little more for myself.

Overall, workers in Group 1 indicated better ability to align their work and family/personal demands while working standard schedules. Although these workers described scheduling benefits for their family lives, their work and family situations revealed the complexity of understanding their work-family interaction. Even with the apparent scheduling benefits, workers reported changes in family responsibilities or comparison of their past and current schedules. These factors may have intersected with their perceptions of scheduling benefits for their lives outside of work.

5.2.2 Group 2: High WFC & Non-Standard Schedules

As the opposite of Group 1 that reported scheduling benefits, Group 2 [High WFC & Non-Standard Schedules] includes six workers who reported experiencing high levels of WFC as a result of their non-standard schedules (i.e., rotating, evening, and night shift, and irregular schedules). Nonstandard and uncertain schedules can impact workers’ lives outside of work. These

schedules interfere with household tasks, allow less time with their families, and result in significant fluctuations in household income (Henly & Lambert, 2014; Swanberg, 2005; Walther, 2019). Workers in this group described how their nonstandard schedules affected their lives off the job in various ways.

A 49-year-old unit secretary moved through a cycle of working a day shift for one week and a night shift for the following week. She had several protective factors for WFC, such as family support and no need to work overtime (as emerged from the experiences of workers in Group 3). Specifically, her husband took her to work and picked her up after she worked overnight or had rough days. Her daughters or grandchildren contributed to household chores by taking turns cooking, cleaning up after themselves, doing their own laundry, and washing dishes. Her family also tried to plan things on her days off so that they could together spend family time. Despite her family's efforts, she still reported how her rotating shift sometimes resulted in strain-based WFC:

It's fine for the most part, except when I'm grumpy. Nobody wants to be around me. Sometimes that's a godsend. Sounds terrible, but I guess-- so the day/night shift is when I get grumpy." "Oh, they tell me. Now they tell me because before it was just they'd stay away from me. Now they're like, "Mom, you're kind of grumpy today anyway." I mean, [inaudible] aggravate me. And then we take a step back. But we're fine. I mean, one thing I've learned with my kids is we've learned to work things out.

Switching back and forth between day and night shifts seems to drain her energy, which could otherwise have been used with her family. Strain-based WFC also occurs for a night shift worker in this group. A single worker, who worked two 12-hour shifts (7 p.m. to 7:30am) and two 8-hour shifts (11 p.m. to 7:30 a.m.) as a cardiac monitor technician, preferred working overnight because he was able to miss all the traffic in the morning and park on the street instead of paying

to park in the garage. Even with his preference for night shifts, working overnight adversely affected his sleeping and eating patterns:

My sleep. My eating. Everything is backwards because of the schedule that I work.

Nightshifts—my days off, my medications get mixed up, when to take them, when I'm to eat, what I'm supposed to eat. My sleep is mixed up.

Shift work, especially night work, can disrupt the sleep and wake states, known as circadian rhythm, which leads to sleep disturbance as shown in this cardiac monitor technician's case (Jehan et al., 2017). Disturbed sleep may increase the risk of long-term health problems, including chronic fatigue, anxiety and/or depression and poor physical health (Costa, 2010; Jehan et al., 2017). For this worker, working a night shift is like a double-edged sword. On the one hand, it benefits him in terms of commuting and parking. On the other hand, it changes sleeping and eating patterns that are important personal lives, thereby posing long-term health risks.

Time-based WFC also appeared in the cases of other workers with nonstandard schedules such as evening shift and irregular schedules. A central service technician, who was married and had one teenage child, worked 3 p.m. to 11 p.m. typically Monday through Friday. He described the connection between his evening shift and lack of family time:

You know, leisure time with my family, it [*his job*] does interfere with that. ... Just sit down together. And watch a movie. Anything. ... We don't get to do it as much as we'd like to.

This worker normally worked Monday through Friday, but every third weekend he worked two days on the weekend and got a day off during the week. Working weekends plus an evening shift also impacted his time to visit his mother in Ohio. Further, he felt that inability to spend time together with his wife, such as taking her out to dinner, had produced a strain on his relationship

and it continued to do so.

Given that WFC is broadly defined as the one that includes not just the workers' familial demands but also their personal demands, another worker illustrated a similar or worse experience of time-based WFC. This single hospital telephone operator worked irregular schedules. In general, unionized hospital service, clerical, and technical workers are guaranteed consistent access to full-time hours and enough advance notice through collective bargaining. This type of nonstandard work schedule is very rare, but it still takes place. This worker explained the unpredictability of his work schedules:

Well, there's either a 6:30 in the morning start, or a 1:30 in the afternoon start. So, and it jumps in between, and everything's back-and-forth. Like there will be three days, like example, I just had three days off. I had Monday and Tuesday off. I have today as a holiday. A scheduled holiday time. And then I'll work for five days, for 7:00 in the morning, and then have one day off, and then switch to like 1:30 in the afternoon. It's really awful. Because I can, like if it was set, I could do other things with my time. Can't really do other things with my time when I'm scheduled like that, yeah.

His irregular schedules had not changed in spite of his and his coworkers' complaints. As a consequence, his *'all-over-the-place'* scheduling conflicted with his personal life:

"Well just the ability for me to consistently do anything else. You know? Like what if I wanted another part-time job? I can't jump around on a part-time job, you know? Like the part-time job would probably want me there from like 5:00 till 7:00, or 5:00 to 9:00—whatever that 5:00 to 9:00 may be, AM or PM, my main job... that... there's a question about if there's enough wage for my main job, like that's—that's a prime example of like this all-over-the-place scheduling for what I do now, I can't pick up anything else or do

anything else."

Even though this worker wanted to or had to work a second job, he could not do it due to different schedules from week to week. The impact of irregular scheduling on this single worker's personal life is still not mild, and it would be greater for those who are married and/or have children. As double-duty caregivers, married and/or parent workers may be stuck between the public and private domains of caregiving (Ward-Griffin et al., 2005). It would be far greater for those without a broad range of protective factors that can buffer the effect of nonstandard schedules on family and/or personal lives.

Unlike Group 1 reporting scheduling benefits, workers in Group 2 reported experiencing the opposite of these workers. Generally, Group 2 described being unable to balance work and family/personal demands because of nonstandard schedules. Atypical shift work or irregular scheduling deprives workers of their time with family and energy, interrupts sleep and eating, or complicates planning ahead. This group is perhaps the epitome of how nonstandard schedules interfere with their personal and family life.

5.2.3 Group 3: Low WFC & Other Factors

In Group 3 [Low WFC & Other Factors] were only a few workers who reported no or little conflict between their work life and family life because of other reasons than standard schedules. Other factors that promoted positive work-family interaction were identified as part-time, flextime, and family support with finance and childcare. This group, along with Group 4 [High WFC & Other Factors], adds to understandings of the relationship between work schedules and WFC, which was not illuminated by the quantitative data analysis.

Better scheduling, but not necessarily standard schedules, facilitates better work-family interaction for certain workers. For example, a part-time transport assistant who worked 20 hours a week (9:30 a.m. to 6:00 p.m. or 10:00 a.m. to 6:30 p.m. on Monday and Friday; 2 p.m. to 6 p.m. on Wednesday) described being able to spend time with his loved one. He saw his girlfriend almost every day, and they engaged in various activities together, such as going to the theater, symphony, and ballet. It comes as no surprise that his part-time schedule afforded him more time for leisure activities and his personal relationships. However, part-time employment was not the only source of low WFC. Substantial financial support came from his deceased father who was a lawyer and had set up a trust fund for him as well as his 81-year-old mother who helped pay his rent or utility bills. In other words, this 59-year-old transport assistant was ‘*well-protected*’ by his family. Hence, he could survive financially while working only part-time and he did not need to worry about money while other workers frequently lived paycheck to paycheck. The combination of financial security and part-time work resulted in a balance between work and personal life.

In a similar vein, a patient transporter with a flexible hours schedule reported her ability to spend a great deal of time with her grandchildren. This 60-year-old worker used to work from 8:00 a.m. to 4:30 p.m., but because of facial paralysis she switched to flextime (8:00 to 1:00 Monday through Saturday; Wednesday off). Flextime provided her with her enough time and energy to participate in her grandchildren’s school activities. Unlike most workers working at least full-time, this participant reported working far fewer hours. Although flextime scheduling provided a limited amount of income, this did not seem like a hurdle to overcome. Not only did she know how to save and budget effectively, but she also had a close-knit family (two grown children; 11 brothers and six sisters) who ‘*gets together and contributes if anything comes up awry that one person can’t handle.*’

Another worker in Group 3 did not work either part-time or flextime. Still, this single mother, who worked as a nursing aide from 6:00 a.m. to 2:30 p.m. Monday through Friday, reported low WFC. The primary contributor to this was family support with childcare. She had three children, ages three, five, and seven years, and her mother watched them. Additionally, her friends watched her children when she picked up an extra shift. While assistance with childcare from family and friends may not have entirely protected her from an imbalance between work and family life, it was still an important protective factor. In addition, her mother's help with childcare is likely to help her save money that otherwise would have gone toward preschool or day care.

In sum, childcare from family and/or friends, flexibility in work hours, and financial security contributed to better work-family interaction. Yet, few workers in the sample escribed low WFC for reasons other than standard schedules; the reality was the few of the workers had access to the supports the workers in this group reported. Compared to other workers who struggled to balance work and childcare or cover basic needs, workers in Group 3 were in a far better position to align work and family responsibilities.

5.2.4 Group 4: High WFC & Other Factors

Twenty-five workers (57%) were in Group 4 [High WFC & Other Factors]. These workers encountered high levels of WFC for a variety of reasons including long commutes and family issues. While all workers in Group 4 had standard work schedules, bt these schedules did not seem to play a protective role in preventing WFC. Multiple sources of WFC that emerged from the qualitative data are important because they provide clarifying and supporting evidence to the quantitative study finding that work schedules are not significantly associated with WFC. Four themes emerged from this group of workers: 1) standard schedules that are not protective; 2) family

issues; 3) more work; and 4) other (i.e., long commutes, nature of work, and supervisor discretion).

5.2.4.1 Standard Schedules That Are Not Protective

Eight out of 25 workers in this group revealed that their standard schedules did not shield them from occasionally encountering WFC. Even with family support and/or no need to work longer than regular hours, these workers did not see the full spectrum of scheduling benefits. There was still insufficient time after work to participate in children's activities at school and 12-hour shifts make it challenging to maintain energy after work. While most workers in this subgroup acknowledged some benefits of standard schedules, their family or personal lives did not appear to remain completely unaffected by these schedules. For example, a lab specimen processor working 10:30 a.m. to 7:00 p.m. described how his schedule interfered with his social life from time to time:

Basically, just time. So, I mean like, I mean, I do get off at 7:00, so, social life, sometimes can suffer but not nearly as much as the 3:00 to 11:00. So, I mean, there's people who want to do stuff before 7:00 at night, obviously sometimes, and that's basically it—that's when it really suffers. ... Yeah, I mean, it's not like a big hindrance but like, it still can hinder some things.

This single worker's experience of time-based WFC may not be as severe as that of another worker in this group, who is a mother of two children. This parent worker worked as a certified medical assistant 8:00 a.m. to 4:30 p.m. Monday through Friday. Her mother-in-law watched her kids, but even with this family support and no overtime work, lack of time was still a challenge for her to stay involved in her children's school activities after work:

It's...now that I'm working here it does [affect the kind of things I do outside of work], because I used to be able to pick my daughter up and take her to all her activities. Now I

get there when they're almost halfway over. Just cause of the hours that we're here and the traffic."

A single mother of three children, who worked as a resource center assistant on two different schedules (8:00 a.m. to 4:30 p.m. and 11:00 a.m. to 7:30 p.m.; shifting schedules every 7 weeks), also reported similar experiences. Even though her mother helped her with childcare and her teenage daughter contributed to household chores, her work schedules led to less time with her three kids:

Mostly those hours that I told you I work for a whole week, but for the most part, there are times where I may not be able to go to like a school concert because I can't take off work, so...but not that often. ... I don't like working weekends, or—I don't like the 11:00 to 7:30 shift, I don't mind the weekends because I like getting that day off during the week, but I do not like the 11:00 to 7:30 shift. Only because I have kids at home that come home from school, and they're waiting on me, so. ... [B]y the time I get home after getting off work, going to the parking garage, sitting in traffic, I'm not home till 6:00, and I get off at 4:30. Then I have to make dinner, and then help with homework, and then by the time that's over it's time for bed.

This single mother was not just experiencing time-based WFC. Exhaustion from work sometimes prevented her from helping her son with his homework. This strain-based WFC deriving from reduced energy and physical or mental exhaustion is commonly found even in workers with standard schedules. For single workers, fatigue from work affects their personal/social life by "*throwing off*" something already planned for them and their friends after work or causing them to put it off until the weekend.

For parent workers, strain-based WFC can be a more salient issue as being tired from work may negatively influence the interactions between their children and them. For example, a single mother who worked as a nuclear medicine technologist reported that even with no overtime work, standard schedules, and family support with childcare, her job seemed to drain her patience and energy that could otherwise be used for her two children after work:

I think I'm exhausted by the time I get home with them, and it's unfortunate, because I save, I use all my patience on my patients, and then when I get home with my kids, I'm like, "Ugh, what do you mean you don't know how to read?! This is ridiculous." ... I think probably I'm a little bit more impatient than I should be with them. But other than that, I try to be very strict with their—I don't let them get away with stuff, and I don't let them just watch TV because I'm too tired, I still will do all the things—I just have less energy to do it.

Attention to certain characteristics within standard schedules along with demographic characteristics points to a more complicated understanding of the interactions between work and family among workers who recognized limited scheduling benefits. A 60-year-old unit secretary who worked three 12-hour shifts from 7:00 a.m. to 7:30 p.m. described her 12-hour shifts as taxing:

How does it affect it? Sometimes it cuts us short. Sometimes. Because the 12 hours. ... When I was younger, yeah, it didn't bother me as much. But as I've gotten older, I notice the 12 hours are like... I can't wait to get home. I'd like to go to 8 hours. But the thing is, when you go 8 hours, it's 5 days a week. I don't want a 5 day—I like just working here three, and then doing my one day extra when I want to.

Considering her age, twelve-hour shift work may have put a larger stain on her. At the same time, however, it allowed her to take an extra day off and thereby spend more time with her

family and friends (e.g., going to a show and going on a trip with her friends). It was like a trade-off between a shorter work week but coming home tired and a five-day week but being less tired. Although she had a supportive husband who had been married to her for 41 years and helped her by packing her lunch every day and preparing food together, her 12-hour shift schedule was still straining to the point where it could create strain-based WFC.

Early morning shifts within standard schedules are also tied to either time-based or strain-based WFC because workers who start their work early in the morning have to go to bed early or lack energy after work even with ample time left after work. A single histology technician working 5:00 a.m. to 1:30 p.m. Monday through Friday reported getting up at 3:30 am and leaving home for work at 4:30 a.m. She “*(couldn't) do anything during the week*” and always had to remember to get up at 3:30 a.m., which interfered with her social activities in the evening and restricted her family visits. Another worker with an early morning shift showed that the stress at work spilled over to home:

My husband keeps telling me that, “You’re too stressed out, and, you know, (Costco?) look like a nice place to work, but I don’t wanna work in (Costco?), I like working in the hospital. I’ve been here almost 25 years. I really like what I do—I don’t like the way they handle things, or the way they do what they do, but I like what I do.”

Participants working early morning shifts do face a tradeoff. Parking in the hospital is easier and workers are able to do what they want or need to do after work. However, it can sometimes be a challenge even for a morning person to always get up very early in the morning while most others are asleep and to retain energy for activities with family and/or friends after work.

5.2.4.2 Family-Related Issues

Six workers in Group 4 described how their experience of WFC was influenced by a range of family issues, including misalignment with family schedules, childcare or elder care responsibilities, and complex family structure. For married or parent workers, the misalignment between work and family schedules restricts the amount of time that can be devoted to their roles in the family (Greenhaus, Allen, & Spector, 2006). For a married worker who was having a baby, her husband's 12-hour shift (7:00 a.m. to 7:00 p.m. or 7:30 p.m.) rather than her shift seemed to affect their relationship; they lacked time together and he was tired from his longer work schedule. She said:

It affects our relationship when he's tired all the time, but he's the one that can make money. Like I said, if he wasn't pulling overtime, we wouldn't be able to build a house, live where we're like living in our apartment because it's like higher rent, you know what I mean? So, if I was by myself, I wouldn't be living where I was living. And doing what I'm doing."

This pregnant worker anticipated that there would be some WFC after her baby is born. Her experience of WFC will presumably stay the same or even get worse if her schedules conflict with her daycare schedules as well as her husband's schedules:

[T]he hours may affect my daycare, but—because they don't let you flex hours to like, you know, come in at different times or anything like that. So, that would probably affect a little bit of daycare and I do have to work some weekends, so that would—because our daycare doesn't have weekends. So that would affect how me and my husband juggle what's going on with the kid at that time. But as of now, nothing. But I think upcoming scheduling might be a little bit of a difficulty.

For a single mother working as a transport monitor technician, her work hours (9:00 a.m. to 5:30 p.m.) conflict with her daughter's schedules, depriving them of time together as a family. She reported that sometimes she did not see her daughter as by the time she came home from work her daughter was already asleep. Even on weekends when she was off, her daughter had to go to work.

Childcare or care for an older family member in tandem with work stress can result in anxiety and depression, thereby diminishing the effectiveness of roles in the family (Greenhaus et al., 2006). For a single worker who described her standard schedule (i.e., 7:00 a.m./7:30 a.m. to 3:30 p.m./4:00 p.m. depending on the day) as perfect, her family's heavy reliance on her for support as well as care for an older adult appeared to drain her energy, thereby resulting in strain-based WFC. For parent workers, the increased burden attributed to childcare responsibilities, together with complex family situations, seem to create a particularly significant strain on them. A housekeeper, who was a single mother of five children, reported struggling to balance work and family because her day involved a considerable time of driving to pick up her little baby from the baby's father and seeing her other four children staying at her mother's home.

For other working parents manifest certain strain symptoms, such as anxiety and depression, deriving from their complicated family situations and high levels of strain-based WFC. An office coordinator who was married but had no children reported that her brother and his two children moved into her house. This change in household composition led her to assume the duties of providing some childcare for her niece and nephew. Things improved when the children's mother started caring for them. Even though this worker no longer needed to care for the children, she still lived with her brother's family including his wife. In the process of going through changes in her household, she became diagnosed with severe anxiety. She said:

It's just stressful when you're used to two people being in your house and going to five, especially two kids. But I mean, we've dealt with it, we're good. No really, I mean, the groceries went up, obviously, and the water bill, and the electric bill, but they—they're with their mom now a little bit too, so that should, you know, go back down a little bit to more normal, so, I don't think it's bad. ... So I did get diagnosed with severe anxiety not too long ago, but I think that's more or less cause I worry about other people and everything else that I really don't need to worry about, but I wouldn't say it's work that does it, it's more or less just my own.

A greater strain appeared to be placed on a parent worker who has four children, one of whom was ill and needed more care, and another child abused by this worker's brother resulted in court proceedings. This worker changed her schedules from rotating to casual. She had to take care of her ill child and attend court hearings regarding her other child. She was the only casual worker in the sample. This casual employment did not seem to offer her any scheduling benefits because having to perform her parental duties associated with family issues with illness and child abuse overwhelmed her to the point where she *suffer(ed) from depression*:

I think it overwhelms me, and then it makes me, like, kinda lash out. Or just makes me, like, fall back from them. And that's kind of where me and my husband's issue fell, because once we found out about what happened to my daughter, I completely blanked out from them. I cut myself off from them. Because I felt like I failed her. Because it happened under my roof. And it just—you know. It just. It's overwhelming, working and then trying to maintain a family. And then I'm young, and we married young. And that's an issue all in itself, because we both kinda feel like we're missing out on something. But we wanna have this—you can't have both worlds. Like, you just can't. So, it's a little rough. It's rough.

This worker added that her previous work schedules, rotating shifts, led to her experience of both time-based and strain-based WFC. She could have belonged to Group 3 [WFC & Non-standard schedules] if she had not switched to casual employment in which she was guaranteed work only when it was needed. However, even after she became a casual worker, the complexity of her family circumstances resulted in her becoming depressed and higher levels of WFC. Her rotating shifts used to play a role in her experience of WFC in earlier times, but currently her family situation seems like an apparent source of WFC.

5.2.4.3 More Work Hours

Working longer is a common occurrence and often unavoidable. More than half of the workers (25) reported working more than normal hours. Overtime hours vary, ranging from two hours to 93 hours per a bi-weekly pay period. Many workers who worked longer than regular hours described using overtime or extra shifts as a strategy to make extra money to support their and their families' needs. Even with a guaranteed raise protected by the union contract, many low-wage hospital workers are still struggling to make ends meet. As evidenced by the quantitative study, hardships are prevalent among these workers. To negotiate these hardships and increase their income, working longer is a strategy used by some workers.

On the one hand, more work hours bring extra income that enables some workers to do more things for and with their kids. On the other hand, it is one of the primary sources of WFC. Working longer often interferes with personal/family lives, particularly worse for those who are married and/or have children. Five out of 25 workers working overtime directly linked more work to WFC. Specifically, more work means less time to spend with family (i.e., spouse and/or children), and less time for housework, resting, leisure activities, and less energy.

A single worker who picked up overtime as often as possible did not have as much free time as he might like. For another participant, a parent worker working 30 to 40 hours of overtime every two weeks, her heavy reliance on overtime as a strategy to make ends meet put a strain on her, even describing her work as *killing* herself. Workers with a spouse and/or children appeared to have more intense experiences of WFC. A resource center assistant working longer than regular hours said that the accompanying exhaustion from extra work affected the amount and quality of her time with her husband:

I was in pain and he was trying to conversate, and I said, “Honey, I can’t, I’m in pain right now.” And I said—and then I—yeah, he got home I think in thirty minutes I was in bed, like I left him downstairs and I really felt bad, but I didn’t—I couldn’t help it. ... [H]e even said that at least—“you know, I don’t hardly see you!” You know? And I worked the three days in a row like—cause I work—“I hardly even see you when you come home, you know, I’m not—no, you get home,” I’ll get home a half hour before he gets there. And then when he gets home, so we don’t cook dinner, we don’t have—you know, it’s hard! It’s hard working part-time.

More work also negatively impacted the relationship with her grandchild:

[I]t takes away some time available, like, weekends that I’m off I try to get my one grandson, I used to get him every other weekend and now I don’t, like I just can’t, I don’t have the time or the energy. And his mom understands, you know, she just... Plus, I’m getting older, and like, okay, how long am I gonna be able to do all this?

Similarly, a single mother of two children (16-year-old daughter and 14-year-old son) reported working longer leads to WFC in ways that limited the attention her children needed. She said:

For years I always need a sitter. Now they're old enough to be home by their self. Most of the time I feel like I'm not home enough. It's really weird, because it's like, what do teenagers actually need you home for? They don't really need me to prepare too much foods. They don't need me to clean up after their selves, tie their shoe, run bath water, iron clothes. They do all that on their own. However, what I'm realizing is, teenagers like attention. And if it's just me sitting at home when they get there, they want that, sort of, kinda. My kids don't complain about it, but I know they lack it. It's a hard decision to make when it's coming down to employment, because there's no other way around it. If I don't work, I can't pay the bills. So I have to—they are being neglected to a certain extent.

Overtime may not necessarily lead to negative work-family interaction if participants work part-time or flex time, if they work very few overtime hours, and more significantly if participants have a supportive family who does most of the housework and childcare. In circumstances where their wages do not fully cover basic expenses, working longer than normal hours is a necessity, not a choice. Choosing to work longer deprives workers of their time outside of work and depletes their energy levels. In other words, their personal or family time and activities are sacrificed as a result of the choice of more work.

5.2.4.4 Other

There are other sources of WFC, such as long commutes, nature of work, and supervisor discretion, but workers in Group 4 reported these sources less frequently. Because of their union-negotiated contract, a majority of hospital workers in this sample appeared to have control over when they started and ended work and how long they worked. However, the uniqueness of hospital work environment (e.g., 24/7 operation, direct and indirect contact with patients) can restrict workers' control regarding the location where they work. Hence, a working-from-home option

may not be available to all workers, and it is not available all the time.

One's flexibility regarding where they work is important because it affects their commuting time and total time away from home. For example, a medical transcriptionist, who was married and had two minor children living with her and her husband, used to work from home for long periods of time. She described the benefits of working from home, in terms of childcare, and the drawbacks to commuting to work:

[W]hen I was at home I could be there, you know, to get them...help them with their homework, or do different things, now I barely see my daughter, because by the time I get home after 6 and if I have to stop at the store, you know, and she's in bed by 8:30, 9:00...so, you know. But I think that's the big difference, but I can't complain, everyone's life is like that.

Consistent with the literature that negative work-family interaction increases for full-time workers with longer commutes (Jansen, Kant, Nijhuis, Swaen, & Kristensen, 2004), this worker's long commutes was an obstacle for better work-family interaction as it took away time to spend with her children at home. She added:

Well, I mean, me working at home for so many years, I can't stand the commute and how long it takes me to get home. You know, it's just so, like...it just, coming to work, you know, it takes you an hour to get home, I mean, that's everybody, sitting in traffic. So I think that's the main thing. You know, just taking the shuttle to the parking garage takes 20 minutes. You know, so by the time you leave work, and you gotta get to the car and that's 20 minutes, and then an hour home—so, I just think, just working in general, but that's everybody's beef, you know, sitting in traffic.

Although this worker's situation revealed the evident link between longer commutes and WFC, it was still a rare occurrence in this sample. Another rare source of WFC reported by workers in Group 4 was the nature of work. Some positions in a hospital setting can be physically demanding. For example, a certified occupational therapy assistant reported how her job took a toll on her physical health. She said:

Well, physical health, yeah probably. My job is very physically demanding. For example, right now I work on the stroke unit, so I'm getting people out of bed that can't move themselves. So, it can be very physically demanding. I'm really careful about making sure that I'm not doing anything to hurt myself. So, but I go home sore, stiff, and I just feel overworked at times.

Her standard schedule (7:30 a.m. to 4:00 p.m.) allowed for an adequate amount of time with her three-and-a-half-year-old son (e.g., Thursday night museum, running in the parks, playing with his toys, gardening outside, going to the mall). However, her schedule did not fully buffer against strain-based WFC. As her job requires intensive labor and strength, it is so physically demanding that it influenced what she could do for herself and with her family after work.

Supervisor discretion is also tied to some workers' experience of WFC. Workers' personal or family lives may be affected by supervisor discretion or authority to allow time off. A patient access coordinator illustrated the difficulty in taking time off and felt that her supervisors had treated her unfairly:

So, my only issue with them specifically is how they treat people when it comes time to requested time off. You look completely...I don't know what would be a good word other than the only thing I can think of is...and it's probably not this bad, but the only thing I can think of is the Gestapo. I don't know why, but it looks so like you can't do as we do when

all of us were hired within this organization and [this system]. Just because you're a leader doesn't give you any more right outside of what your role is. We all are on equal playing field when it comes to how we were hired. So you can't run your position as if, you know, like you're the king. Just like you want off? I mean people expect time off. And that needs to be respected better than it is. Personally.

This worker managed to have a vacation as planned by going to an administrator who was higher in the authority structure than her supervisors. However, she was worrying again over whether her requested time off got approved in a timely manner. Supervisors' respect for workers' time-off requests and timely approval are critical as they may influence not only how workers feel treated at work, but also how they use time off for themselves and/or their families outside of work. She adds:

When you can't get time approved, yeah. Yeah. When you can't get time approved that's how it affects me. So, it can be a big—because right now—I mean, because I wrote a letter to the manager and the corporate director about how I didn't appreciate how what happened with my Labor Day vacation, which I ultimately got because I wrote the letter. So, I could see them denying my November request. But we'll see.

Overall, workers reported a range of reasons for their struggles to balance work and family demands. Unlike Group 1 [Low WFC & Standard Schedules], many workers with standard schedules in Group 4 did not recognize scheduling benefits. Instead, these workers described their standard schedules as still not protective against their experiences of WFC. In addition to standard schedules that are not protective, there are also other factors that contributed to WFC, including complicated family circumstances, working longer than normal hours, long commutes, nature of work, and supervisor discretion, many of which were not captured by the quantitative measures.

Such a variety of sources reveal that workers' experiences of WFC cannot be explained solely by (non)standard schedules and thereby help cast light on the lack of association between (non)standard schedules and WFC found in the quantitative study.

5.3 Mixed-Methods Study Findings

A mixed-methods analysis was employed that included both quantitative (structured survey) and qualitative (in-depth interviews) data to explore the extent and the ways in which qualitative interviews with health care workers serve to contribute to a more comprehensive and nuanced understanding of the relationship between work schedules and WFC. A qualitative examination was designed to provide a supporting and complementary role to a quantitative examination. Specifically, the qualitative examination addressed the overarching aim to answer the question that was still unanswered by the quantitative examination. The qualitative examination resulted in the formation of four groups based on workers' work schedules and experiences of WFC. While the stories told by the first two groups (Group 1: Low WFC & Standard Schedules and Group 2: High WFC & Non-Standard Schedules) are not consistent with the quantitative findings, they align with existing studies which have supported the significant association between work schedules and WFC.

Studies investigating the relationship between work schedules and WFC have shown that non-standard schedules deprive workers of time and energy that can be invested in themselves or their families, while standard schedules are considered protective factors against WFC. Contrary to these studies, the quantitative findings in this study revealed the lack of scheduling advantages or disadvantages. The other two groups (Group 3: Low WFC & Other Factors and Group 4: High

WFC & Other Factors), however, account for the unexpected insignificant relationship between work schedules and WFC, which was found in the quantitative examination. These groups of workers exhibited that sources other than work schedules had contributed to either better or worse work-family interaction.

The qualitative findings offer clarifying and supporting evidence to the quantitative findings. Particularly, Groups 3 and 4 that emerged from qualitative data help explain why work schedules are either protective or nonprotective against WFC and elucidate multiple sources that can contribute to WFC or lack thereof. The factors that promoted or hampered positive work-family interaction, including childcare support, flexible working hours, complex family situations, long commutes, and nature of work, were not highlighted or measured in the quantitative examination. Without the additional qualitative evidence, important questions about the role of work schedules in WFC would have remained unanswered. Overall, the mixed-methods analysis served to provide a fuller and more nuanced understanding of the relationship between work schedules and WFC among a sample of low-wage health care workers.

6.0 Discussion of Findings

This mixed-methods study sought to gain insight into multiple potential mechanisms from both economic and non-economic working conditions to worker health, using a sample of low-wage hospital workers. This study included a quantitative examination of the relationships amongst working conditions, life stressors, perceived stress, and mental health, and the mediating role of stress, using survey data ($N=167$). In order to further interpret the association between work schedules and work-family conflict (WFC), the study also involved a qualitative examination of how and why work schedules promote better work-family interaction, using in-depth interview data ($N=44$).

Findings from the quantitative examination suggest the significant role of certain work conditions in worker mental health. First, both hourly wage rates and difficulty in taking time off were found to be significant predictors of material hardship, which increased stress and thereby worsened mental health. Second, autonomy reduced worker stress, which in turn promoted their mental health. Third, both material hardship and WFC were associated with mental health, not directly, but indirectly through stress. Lastly, work schedules were not found to be a significant predictor of WFC.

I investigated the reasons behind this unexpected insignificant finding through the qualitative examination. These findings revealed four groups of low-wage workers depending on their work schedules and sources of WFC. Group 1 (Low WFC & Standard Schedules) reported the advantages of a standard work schedule, while Group 2 (High WFC & Non-Standard Schedules) was the opposite of Group 1: those in Group 2 indicated their inability to balance work and family due to lack of time and/or energy resulting from a non-standard work schedule. Group

3 (Low WFC & Other Factors) and Group 4 (High WFC & Other Factors) demonstrated that there were multiple sources of WFC other than work schedules or protective factors against WFC. Group 3 reported protective factors against WFC, such as childcare support, flexible working hours, and financial security. Meanwhile, Group 4 indicated a range of risk factors for WFC, including complicated family circumstances, working longer than normal hours, long commutes, nature of work, and supervisor discretion.

The mixed-methods analysis provided a fuller and more nuanced understanding of the relationship between work schedules and WFC. The quantitative finding that work schedules were not significantly related to WFC was unexpected and inconsistent with other studies. The qualitative findings shed light on this unexpected insignificant finding. Especially, Group 3 (Low WFC & Other Factors) and Group 4 (High WFC & Other Factors) from the qualitative data reveal the complexity of understanding WFC and explain why WFC cannot be viewed solely in light of work schedules. Furthermore, the sources of WFC presented in Groups 3 and 4 were not measured or displayed explicitly in the quantitative examination. Hence, the mixed-methods analysis contributed to offering a detailed description and nuanced understanding of WFC experienced by a sample of low-wage hospital workers.

6.1 Strengths and Limitation of the Study

The strengths of the study include an understudied sample, use of mixed-methods analysis, both economic and non-economic dimensions of low-wage work, and its theoretical contribution. First, this study draws on a sample of low-wage health care workers (i.e., health care support, direct care, and health care service workers), who have received little attention from the media,

the general public, or scholars. Scholarly publications examining the effect of disadvantageous working conditions on worker well-being tend to draw on professional or managerial workforce or general labor force (Swanberg, 2005). Moreover, research on work schedules in particular is often restricted to retail and food service sectors (Henly & Lambert, 2014; Schneider & K Harknett, 2019; Swanberg, 2005), even though low-wage workers are employed in a wide range of occupations, including health care workers (Vidal, 2013). Jobs in the healthcare industry, when compared to other typical low-wage jobs, are considered good jobs because of a higher wage than a minimum wage and other fringe benefits. Despite holding so-called good jobs, material hardship and work-family conflict are commonly experienced by low-wage health care workers. Such stressors leave them in a vulnerable position, when compared to other health care workers or professionals such as doctors and nurses. Overall, low-wage health care workers have continued to be a major blind spot for researchers and policymakers.

Second, this study helps fill a void in the current literature on low-wage health care workers by examining both economic and non-economic conditions of their work and further clarifying mechanisms from these work conditions to mental health outcomes. Although previous studies have demonstrated consistent relationships between working conditions and stressors such as material hardships and work-family conflict (Golden, 2015; Henly & Lambert, 2014; Nord & Parker, 2010; Skobba et al., 2013; Smith & Halpin, 2014; Swanberg, 2005; Voydanoff, 1988; Walther, 2019; Yabroff et al., 2019), these studies have centered mainly on the economic aspects of low-wage work (Schneider & Harknett, 2019). This results in a dearth of research on non-economic dimensions of low-wage work, despite its significant consequences for worker stress and health. Considering both dimensions of low-wage work in this study helps to provide a fuller picture of these workers' experiences.

Third, this study follows a mixed-method design, using online surveys to collect quantitative data and in-depth interviews to collect qualitative data, while studies on low-wage workers' stress and health rarely use mixed methods analysis. This mixed-methods approach to analysis allowed for identifying vital information that may have otherwise been missed if a single method had been used (Hesse-Biber & Leavy, 2011). In this study, qualitative methods were used to enhance quantitative methods by clarifying and conceptualizing quantitative findings that were unexpectedly statistically insignificant. Overall, the mixed-methods analysis led to a fuller and more nuanced understanding of the experiences of WFC resulting from work schedules and many other sources among a sample of low-wage health care workers.

Finally, this study adds to the theoretical base by examining the mediating role of stress in the theoretical framework of the stress process model. The stress process model postulates that stressors are likely to arouse stress and that stress in turn adversely influences health outcomes, whereas the direct effects of stressors (i.e., material hardship and WFC) on health outcomes have been more highlighted in previous studies (Borgmann et al., 2019; Borgmann, Rattay, & Lampert, 2019; Davis et al., 2017; Gundersen & Ziliak, 2015; Heflin & Iceland, 2009; Katz et al., 2018; Kiely et al., 2015; Leineweber et al., 2013; Marshall & Tucker-Seeley, 2018; McDaid et al., 2013; Neckerman et al., 2016; Tucker-Seeley et al., 2013). This study helps explain perceived stress as the potential linking mechanism through which material hardships and work-family conflict may lead to poor mental health outcomes among low-wage health care workers.

Although this study has many advantages, it is not without limitations. The data are cross-sectional and limited to unionized workers in a single hospital in Pittsburgh, Pennsylvania. Also, a low survey response rate resulted in a small sample. Therefore, this study prevents clarification of the temporal nature of the associations and is restricted in its generalizability. Another limitation

of the study is the potential for selection bias. Part of the survey recruitment process may have influenced who responded. Both survey respondents and interview participants were informed that they would receive a \$20 gift card for their time and participation after completing the survey and the interview, respectively. It is likely that this payment may have influenced their motivation to participate in the survey and/or interview. It is also possible that those who participated in the survey and/or interview are different than those who did not in terms of demographics and responses.

Moreover, this study does not utilize the same wave of quantitative and qualitative data, which results in a time gap between the second wave of qualitative data (July 2018 – April 2019) and the third wave of quantitative data (September 2019 – March 2020). This is because the third wave of in-depth interviews include the COVID-19 related questions, which makes it difficult to disentangle the questions unrelated and related to the COVID-19. For example, health care workers in the midst of the pandemic had to adapt to drastic changes in their working conditions and procedures. Although there was a time gap between the two data collection periods, health care workers' overall work and life experiences have not dramatically changed from the first to third wave pre-COVID.

Furthermore, this study utilized self-reported data. Although self-reported data can be valuable in obtaining the study participants' perspectives, views, and opinions, they can be unreliable and threatened by self-reporting bias (Althubaiti, 2016). In the process of obtaining self-reported data, social desirability bias and/or recall bias may have occurred in the process of obtaining self-reported data. Thus, dishonest or inaccurate responses may have been provided, which can limit the interpretation of the data. However, the survey instrument did not ask highly sensitive and intrusive questions. Moreover, based on the field notes that include the interviewers'

overall evaluation of the interview, a majority of the interviewees seem to have felt comfortable and forthcoming in their responses. Thus, there appears to be little or minimal threat to the data and its interpretation.

Additionally, it is also important to note the potential omitted variable bias. For example, those who have family support with childcare or better ability to overcome stress or adversity are less likely to succumb to the adverse impact of stress. The relevant variables, such as social support or resilience, which are known to be associated with stress and mental health but not included in this study, may have caused biases on the estimates (Prashanth et al., 2017; Shatté, Perlman, Smith, & Lynch, 2017). Although there are also many other variables that are associated with material hardship, WFC, stress, and mental health, the inclusion of as many variables as possible in the statistical model is impractical and increases the risk of multicollinearity and heteroskedasticity.

The final limitation lies in the measures of work conditions and material hardship used for the analyses. In terms of work conditions, the difficulty in taking time off is somewhat murky in its meaning. It is not clear if it is difficult to take time off due to lack of supervisory support or insufficient or inaccessible paid time off. Also, 8-hour and 12-hour shifts were not differentiated in the qualitative examination and shift length was not even asked in the quantitative examination. Besides standard or non-standard work schedules, additional information regarding 8-hour or 12-hour shifts is also essential given its impact on worker health. There are more dimensions of working conditions not asked about in the survey questionnaire, such as the amount of contribution to an employer-provided or other types of health insurance, the degree of financial burden associated with health insurance contributions, the adequacy and accessibility of paid time off, and intrinsic rewards. In terms of material hardship, there is no standardized measure (Marshall et al., 2017), which makes it difficult to establish the validity and reliability of the material hardship

measure used in this study. In addition, the measure of material hardship used in the study describes only the number of hardships experienced by workers, not their intensity or severity.

6.2 Implications of Findings for Future Research, Practice, Policy, and Planning

The study findings about the multiple pathways from low-wage work conditions to mental health have important implications for future research, social work education, practice, and policy: 1) provide a living wage; 2) alleviate material hardship; 3) improve working conditions; and 4) help workers balance work and life.

6.2.1 Provide a Living Wage

One of the key findings that lower-wage workers in this sample are more likely to experience material hardship highlights the importance of ensuring that these workers are paid a living wage. One way to address this issue is to raise the minimum wage. The 2022 Pennsylvania minimum wage, \$7.25 per hour, is among the lowest in the nation except for five states with no minimum wage rates. A recent study calculated a reasonable average for low wages as \$16.04/hour at the national level and \$15.14 at the Pittsburgh level by accounting for variation in the cost of living across the nation (Ross & Bateman, 2019), suggesting that the minimum wage has not kept up with the cost of basic necessities. The average hourly wage rate of workers in the sample is less than \$17 an hour (Quantitative sample=\$16.51/hour; Qualitative sample=\$16.89/hours), which is more than double the state and federal minimum wage and thus may seem high. Yet, it is not extremely high compared to a reasonable national average for low wages, and almost half of the

workers are still in the lower wage group who will benefit from an increase in the minimum wage.

It is also important to note that the sample used in my dissertation are unionized health care workers with wages above the current minimum wage and guaranteed annual raises protected through their union contracts. These workers with better working conditions still have difficulty in fulfilling basic needs even though they commonly work overtime to supplement their low wages. As research has shown that unionized workers are more likely than their non-unionized counterparts to be guaranteed higher wage and benefit standards than their counterparts (Hagedorn, Paras, Greenwich, & Hagopian, 2016), it is reasonably assumed that non-unionized workers may have a harder time making ends meet, other things being equal. Hence, workers who are not union members might benefit more from the minimum wage increase than those who are represented by a union. While raising the minimum wage is one way to help low-wage workers afford to fulfill basic needs, Pennsylvania has adopted preemption laws that prohibit cities and counties from adopting local minimum wages. As long as the U.S. Congress does not raise the minimum wage, the only thing that Pennsylvania workers rely on is their employer.

Thus, the role of social workers whose primary goal is to help people in need and to address social problems is even more crucial in helping support a living wage for vulnerable workers. First, social work education needs to be informed about wider social, political, and economic processes and thereby promote macro social work. Social workers should be informed about social justice advocacy and trends in movements for social and economic justice, such as living wage campaigns and Fight for \$15. Second, social work practice must encourage social workers to engage in policy advocacy through new policy provision and/or modification of existing policies. Social workers can endorse and join campaigns for living wages and a higher minimum wage and empower their clients to participate in these campaigns. Likewise, social workers should support enforcement of

the labor laws and worker organizations by joining unions and/or advocating for labor's commitment to reforms benefiting workers. Lastly, social workers must support not only policy reforms that can help workers to be paid a living wage or a higher minimum wage, but also other reforms such as fair scheduling laws, paid sick leave laws, and subsidized childcare, which will amplify the benefits of minimum wage increases (Romich, 2017).

6.2.2 Alleviate Material Hardship

Considering the study findings that the experience of material hardship elevates the levels of worker stress and thereby adversely affects mental health outcomes, strategies to mitigate material hardship experienced by low-wage workers are integral in order to keep the workforce of the healthcare system healthy and secure.

As previously discussed, interventions targeted upstream are of paramount importance. Further policy options to reduce poverty and income inequality must be taken into consideration as well. One of the key things to note about low-wage health care workers is that they are different from typical low-wage workers defined by referencing the federal minimum wage, median hourly wage, or the official poverty line. Although the workers in the sample appear to be better off in terms of wages than those defined by any of the official measures, this is not in fact the case: the number of families experiencing material hardship far exceeds those with incomes below the poverty line, while some households in income poverty do not experience material hardship (Rodems, 2019). In addition to their wages that are not livable, their ineligibility for key social safety net programs leaves them within the policy blind spot (Rodems, 2019).

Definitions of low-wage work must therefore be expanded to encompass what these workers need to support themselves and their families, rather than reflect a proportion of the

minimum wage, median wage, or poverty threshold. We should think about their needs and what level of income is necessary to meet their needs. Needs-based calculators can help to establish basic budgets for differing family sizes that are geographically specific (Engel et al., 2020). Redefining low-wage work could be the first step in restructuring the reach of a safety net, specifically recalculating public benefits eligibility criteria to include more working people. Since the COVID-19 pandemic, many states have taken actions to streamline enrollment processes and relax eligibility for such programs as Medicaid, Children's Health Insurance Program (CHIP), and Supplemental Nutrition Assistance Program (SNAP) (Blumberg & Mann, 2020; Centers for Medicare & Medicaid Services, 2020; Cooper & Worker, 2020). Discussions about how to better support workers through far-reaching safety net programs must continue beyond the coronavirus pandemic.

From the data used in this dissertation study, I cannot infer the workers' eligibility for public benefit programs, their difficulty in navigating through a labyrinth of public-benefits bureaucracy and paperwork, or their feelings of stigma associated with the use of public benefits. Depending on their underuse or non-use of public benefits, different interventions need to be targeted. The diverse roles of social workers can be observed in the following areas:

- 1) provide information about public benefits programs and advertise these benefits;
- 2) for those who are eligible for public benefits but have not applied for them, assist them with the application process;
- 3) for those who are ineligible for public benefits, offer information about community resources, such as food banks or food pantries;
- 4) advocate for the expanding and strengthening the social safety net that supports low-income working people and widely promulgate this work;

- 5) deliver public assistance while maintaining client self-respect and encouraging self-esteem to reduce potential stigma of public benefits use.

Given that my dissertation study uses the composite score of material hardship with a higher score representing more hardships, further research is urgently needed to better understand the intensity of material hardship experienced by workers and/or specific forms of material hardship. An examination of barriers to using public benefits among low-wage workers and the extent to which using public benefits alleviates material hardship represents another fruitful direction for future research.

6.2.3 Improve Working Conditions

From the quantitative examination of multiple pathways that lead from working conditions to mental health, I found that workers with difficulty taking time off were likely to experience more hardships. Although it is not clear why workers found it difficult to take time off of work, several reasons can be put forward to explain this. First, workers may have insufficient *paid* time off. Lower-wage and service sector workers are less likely than average to have paid leave benefits (i.e., paid sick leave, paid vacation, and paid holidays) (U.S. Bureau of Labor Statistics, 2020). Using *unpaid* time off might jeopardize their paycheck. Although workers were allowed to request up to an additional 10 weeks of paid family and medical leave under the Families First Coronavirus Response Act during the first year of the COVID-19 pandemic (U.S. Department of Labor, n.d.), expanding the FMLA beyond the pandemic should still be a government priority to make paid leave more accessible to low-wage workers.

Second, there may be an obstacle to accessing time off even though paid leave benefits are available to them. Time-off requests may not be handled in a timely manner, or it may be the case

that time off can only be used when it is requested far in advance. Future research needs to address paid/unpaid time off and its relationship with material hardship among health care workers in more depth. Workers without paid leave benefits are highly likely to face a substantial barrier to seeking medical care and thereby delay or forgo needed medical care (DeRigne, Stoddard-Dare, & Quinn, 2016; Peipins, Soman, Berkowitz, & White, 2012). Paid time off, whether it is insufficient or inaccessible, likely affects the experience of medical hardship in particular.

Additionally, I found that lower levels of autonomy predicted higher levels of stress, thereby resulting in poor mental health outcomes. Most workers want freedom in making job-related decisions, such as what they do at work and how they do it. However, almost all of the low-wage occupations in the U.S., including personal care and service and healthcare support, are occupations with low autonomy (Vidal, 2013). Lower-wage workers have lower autonomy in decision-making for how they complete their work than higher-wage workers (Bond & Galinsky, 2012; Dill, Morgan, Marshall, & Pruchno, 2013). As a result, low-wage workers with limited opportunities to adjust to work demands are placed into a more strenuous situation in their jobs (e.g., less input into their work schedules) (Lyly-Yrjanainen, 2008; Waldron, 2007). Workers with less job autonomy feel less valued and trusted and they are less able to deal with work stress than those with more job autonomy (Lambert, 2004; Schiff & Leip, 2019; Yaldiz, Truxillo, Bodner, & Hammer, 2018). Overall, job autonomy appears to be an important element in understanding the stress felt by low-wage health care workers.

These findings point to the significance of workplace policies that improve working conditions and promote mental health among health care workers. Workers should be entitled to paid sick leave so that they do not need to choose between missing a paycheck or going to work sick. To nurture less stress among employees, hospitals should try to improve their work

environment by involving workers in decision-making processes instead of using a top-down approach to management and thereby increasing their sense of autonomy in the workplace. In addition to addressing working conditions plaguing health care workers, wellness programs can be provided to help workers cope with stress and prevent their exhaustion because stress increases the risks of mental health problems. Mental health services are the type of services that are not commonly offered through employee assistance programs (EAP). If further investigation can explore specifically what mental health issues health care workers face, however, more targeted interventions to address those mental health problems could be integrated into the EAP.

6.2.4 Help Workers Balance Work and Life

The quantitative investigation of work schedules and WFC led to an unexpected, insignificant association between work schedules and WFC despite the strong evidence linking this non-economic work condition to WFC (Golden, 2015; Henly & Lambert, 2014; Schneider & K Harknett, 2019; Smith & Halpin, 2014; Swanberg, 2005; Walther, 2019). This may be explained by lack of variation in the work schedule variable, or it may be that non-standard work schedules like night shift can be employed as a strategy to balance work and life. For workers who find it challenging to secure childcare, it is likely that they care for their children during the daytime and work during the nighttime (Agosti, Andersson, Ejlertsson, & Janlöv, 2015; Carrillo, Harknett, Logan, Luhr, & Schneider, 2017).

The qualitative investigation of work schedules and WFC revealed multiple sources of WFC, most of which centered around childcare. Lack of access to childcare was one of the most commonly cited barriers to achieving a balance between work and family responsibilities. Conversely, access to quality and affordable childcare is a protective factor against WFC. For

American families, childcare is a major family expense. The lower wages are, the larger share of the family budget the childcare expenses take up (Fraga et al., 2018). It is reasonably assumed that living on a limited family budget after paying high costs of childcare likely increases economic strain on families. Meanwhile, federal and state childcare programs have limited reach over children. Although one out of four children of low-wage workers are eligible for federal childcare subsidies, only 15% of these eligible children do receive public assistance (Chien, 2019).

Moreover, many subsidy-eligible families live in areas or communities with limited or no access to quality childcare, referred to as childcare deserts, and struggle to find care that accommodates their work and family needs (Dobbins, Tercha, McCready, & Liu, 2016; Sandstrom et al., 2018). Low-wage workers who are single mothers are particularly affected by a lack of access to affordable and quality childcare if they are both the primary earner and caregiver and thereby the dual burden of work and care falls solely on them. Many have to rely on a patchwork of childcare arrangements involving family, friends, and neighbors. Without such patchwork, the absence of childcare can deter the mother from maintaining work, which can lead to job disruptions among single mothers and thereby jeopardize their family's economic security (Blau & Kahn, 2013; Dworsky & Courtney, 2007; Morrissey, 2017). Therefore, improving the quality of childcare programs and increasing accessibility of high-quality childcare are required to help low-wage workers with dependent children balance work and childcare (Dobbins et al., 2016; Sandstrom et al., 2018). Clearly, this is an area in which social workers and social service agencies must advocate for increased resources and expanded reach of government childcare assistance. A government-supported system, such as universal childcare, is one option that might eliminate the financial burden for working parents, regulate the quality of care received, and improve access to childcare (Miller, Gerdes, & Bragger, 2020). As proposed in President Biden's American Families

Plan in 2021, the funding for families with children would make childcare more affordable by helping them to pay no more than seven percent of their household income for childcare payments (The White House, n.d.).

Apart from childcare, unpredictable scheduling and long commutes were obstacles to achieving a healthy work-life balance among health care workers. Given the unique work environment of hospitals that are open and operating 24/7, there is a wide range of work schedules, even including unpredictable schedules. Also, job positions in a hospital may require direct patient care and contact, making it nearly impossible to work from home. As WFC increases levels of worker stress and in turn negatively impacts mental health, efforts are required to alleviate the misfit or imbalance between work and family responsibilities. To make schedules more predictable, hospitals must assign more predictable employee schedules with fewer last-minute changes, while increasing schedule notice and reducing shift cancellations. Predictable scheduling can be beneficial for not only workers themselves, but also for their families and employers by improving worker health and well-being, family life, and even work productivity (Boushey & Ansel, 2016; Schneider & Harknett, 2019). In terms of long commutes, one way to help ease the strain of workers' daily commute is to offer flexible schedules and facilitate easier parking. A relaxed working schedule would help workers to come into work later to avoid the majority of commuter traffic (Bolino, Kelemen, & Matthews, 2021; Quinn, Jakicic, Fertman, & Barone Gibbs, 2017). At the same time, understanding and respecting workers' home lives outside of work should be promoted at the supervisor and management levels.

6.3 Conclusion

This dissertation represents a well-rounded exploration of multiple pathways from both economic and non-economic aspects of low-wage work to worker mental health. The quantitative analysis of the current study explored the associations amongst working conditions, life stressors, and mental health as well as the mediating role of stress, using a structured online survey. I also delved into multiple sources that promote or hinder work-family interaction to better understand the unexpected quantitative findings that work schedules were not associated with negative work-family interaction or work-family conflict (WFC), using in-depth interviews. The utilization of mixed methods facilitated a deeper and nuanced understanding of work-related determinants of mental health as well as interactions between work and family domains than has been obtained by prior research. Most existing research on low-wage workers has focused primarily on economic dimensions of low-wage work and/or relied solely on a quantitative investigation that did not give workers the opportunity to voice their perspectives beyond the specific questions included in the surveys.

The benefits of the study design in this dissertation are two-fold. First, this dissertation explored non-economic dimensions of low-wage work (i.e., work schedules; difficulty taking time off; autonomy) in addition to its economic dimension (i.e., wages). Given that disparities in job qualities are getting wider or even polarized in U.S. jobs, the inclusion of non-economic aspects of low-wage work helped shed more light on the relationship between these aspects and stressors in life among low-wage health care workers. Second, an in-depth investigation of multiple sources of positive or negative work-family interaction offered much more information and insight into the interactions between work and family lives than could be understood relying solely on questionnaires or surveys. For example, there was no statistically significant relationship between

work schedules and WFC. Despite the lack of statistical significance in quantitative analysis, the qualitative examination provided varying experiences pertaining to what led either positive or negative work-family interaction among low-wage health care workers. If this study had relied solely on the quantitative data, valuable and dense information pertaining to low-wage health care workers' positive or negative work-family interaction would have been missed. The experiences of these workers should be used to inform organization and government policies aimed at alleviating material hardship and WFC and thereby enhancing mental health.

Future research should explore more dimensions of low-wage work, such as health insurance (e.g., burden of health care costs) and shifts (e.g., 8-hour or 12-hour shift) beyond what is included in the current study. Specifically, more research looking at the burden of health care costs is important because the role of unaffordable health care costs in access to health care services. Likewise, more information should be given about shifts as shift work has been shown to negatively affect workers' lives and health. Further, additional research should be conducted to better understand the severity of material hardship experienced by workers and/or specific forms of material hardship. An investigation of obstacles to using public benefits among low-wage workers and the degree to which public benefits use mitigates hardship represents another fruitful direction for future research.

Appendix A List of Material Hardship Variables

Appendix Table 1 List of Material Hardship Variables

Variable Number	Variable	Survey Item	Value
1	Housing 1	During the last three months, have any of the following happened to you? Could not pay the full amount of rent or mortgage on time	0=No, 1=Yes
2	Housing 2	During the last three months, have any of the following happened to you? Stayed in a homeless shelter or slept on the street because I couldn't pay rent or mortgage	0=No, 1=Yes
3	Housing 3	During the last three months, have any of the following happened to you? Stayed with family or friends because I could not pay rent or mortgage	0=No, 1=Yes
4	Medical 1	During the last three months, did you ever find you could not afford medical treatment for you household (such as seeing a doctor or dentist)?	0=No, 1=Yes
5	Medical 2	During the last three months, did you ever find you could not afford prescription medications for your household?	0=No, 1=Yes
6	Medical 3	During the last three months, did you owe any money for medical treatment?	0=No, 1=Yes
7	Utility 1	During the last three months, have any of the following happened to you? Could not pay utility bills on time	0=No, 1=Yes
8	Utility 2	During the last three months, have any of the following happened to you? Had my cell phone disconnected because of bill not paid	0=No, 1=Yes
9	Utility 3	During the last three months, have any of the following happened to you? Could not afford to pay all my bills in full, so made partial payments or paid only some bills	0=No, 1=Yes
10	Essential 1	During the last three months, have any of the following happened to you? Could not afford car repairs, gas, or insurance	0=No, 1=Yes
11	Essential 2	During the last three months, have any of the following happened to you? Could not afford car loan payments or had car repossessed	0=No, 1=Yes
12	Essential 3	During the last three months, have any of the following happened to you? Could not afford to purchase clothes or shoes for adults in my family	0=No, 1=Yes
13	Food 1*	During the last three months, how often did you worry about whether your food would run out before you got money to buy more?	0=No, 1=Yes
14	Food 2*	During the last three months, how often did you or other adults in the household cut the size of your meals or skip meals because there wasn't enough money for food?	0=No, 1=Yes

15	Financial 1**	During the last three months, how strongly would you agree or disagree with the statement: "I live from paycheck to paycheck"?	0=No, 1=Yes
16	Financial 2**	During the last three months, how strongly would you agree or disagree with the statement: "I can live comfortably within my budget"?	0=No, 1=Yes
17	Financial 3**	During the last three months, how strongly would you agree or disagree with the statement: "An emergency would financially ruin me"?	0=No, 1=Yes

Note. *For food insecurity, respondents rated how strongly they would agree or disagree about each characteristic over the last three months using a 5-point Likert scale ranging from “0=Never” to “4=Very often.” Each food insecurity item was dichotomized (0=Never and Almost never; 1=Sometimes, Fairly often, and Very often). ** For financial insecurity, respondents rated how strongly they would agree or disagree about each characteristic over the last three months using a 4-point Likert scale ranging from “1=Strongly disagree” to “4=Strongly agree.” Item two was reverse coded so that higher scores suggest higher levels of financial insecurity. Each financial insecurity item was dichotomized (0=Strongly disagree and disagree; 1=Agree and Strongly agree).

Appendix B Interview Guide

Thank you for agreeing to talk with me today. As I mentioned, we're talking with people who work at [Hospital name] to learn more about your jobs and your lives. The purpose of this research study is to find out how your lives are being affected by the wage increase that you have just received (will be receiving). We are doing this research study because we think it's important to document these effects, and we hope this research can be useful in supporting other workers' efforts to get an increase in pay, too.

The interview will take about one hour to complete. There are no right or wrong answers to the questions I have for you – I really just want this to be a conversation where I can learn about you and your experiences. If there are any questions you'd rather not answer, just let me know. And if you have questions for me, just ask. We will also ask you to complete a brief one page demographic questionnaire.

We will be recording the interview. Your name will not appear in the recording at all. We will not ask you to identify yourself though we will ask some demographic information. Only the researchers involved in the study will have access to the recording and the recording will be stored in a secure computer server at the University of Pittsburgh and will be analyzed using the researchers secured desk computers. Any paper transcripts of the recordings will not have your name on it and these will be stored in a locked file cabinet in a locked office. The demographic questionnaire will not have any identifying information and will be stored in a locked file cabinet that only the principal investigators can access. No identifying information will be used in any published material. Although every reasonable effort has been taken, confidentiality of the secured computers cannot be guaranteed and it is possible that additional information beyond that collected

for research purposes may be captured or hacked and used by others not associated with this study. Appropriate review and approval of this interview has been granted by the University of Pittsburgh Internal Review Board.

There are no foreseeable risks associated with completing the interview. Your participation is voluntary, and you may stop answering the survey questions at any time. Choosing to complete or not complete the interview will have no consequences.

There are not any direct benefits to you for completing the interview. There are benefits to policy makers, the community and to those working to raise workers' wages as they better understand what the impacts are of such wage increases. Each participant will receive a \$20 gift card as a token of our appreciation. If you have questions about this project or any problems associated with the interview, you may contact Dr. Jeffrey Shook at 412.648.9635 or jes98@pitt.edu or Dr. Rafael Engel at 412.624.6315 or rengel@pitt.edu.

Let's start by talking briefly about your job.

1. Last year you were a <job title>. Are you still in that position?

IF YES:

- a. Can you tell me about a typical day at work?

PROMPTS:

1. Responsibilities
2. Pace/amount of work
3. Interactions with co-workers
4. Interactions with supervisors

- b. What hours/shifts do you work?

PROMPT:

1. Schedule stable? Changing week to week? Changing on some other basis?

- c. Do you ever work overtime?

IF YES:

period?

1. Is working overtime voluntary or expected/required?
2. How often do you work overtime?
3. About how many hours of overtime do you work during a pay

IF NO:

1. Do you not work overtime because you don't want to, or because it's not allowed/available in your unit/department, or for some other reason?

IF NO:

- a. What is your new job title? What department are you working in?
- b. When did you change jobs?
- c. What led you to change jobs? What attracted you to your new position?

PROMPTS:

1. How heard about job? Actively looking?
2. Influences on decision to take job (interest in new tasks, desire to be part of new work team/environment, salary/benefits, work schedule, something else)?
- d. Can you tell me about a typical day at work as a <new job title>?

PROMPTS:

1. Responsibilities
2. Pace/amount of work
3. Interactions with co-workers
4. Interactions with supervisors
- e. What hours/shifts do you work?

PROMPT:

basis?

1. Schedule stable? Changing week to week? Changing on some other
- f. What do you like best about your new job?
- g. What do you find most challenging about your new job?
- h. Do you ever work overtime?

IF YES:

1. Is working overtime voluntary or expected/required?

2. How often do you work overtime?
3. About how many hours of overtime do you work during a pay period?

IF NO:

1. Do you not work overtime because you don't want to, or because it's not allowed/available in your unit/department, or for some other reason?

I want to switch gears a bit. One of the primary things we're interested in understanding is how the raises are (or aren't) impacting the lives of Pittsburgh's hospital workers.

2. Think back over the last year since the wage increase in July 2017. What differences did that raise make to your life inside or outside of work?
3. What preparation did you have for your job? How are you kept up-to-date with the knowledge and skills needed for your position?

PROMPTS:

- a. Education/training programs completed by participant before taking position
- b. Training offered by hospital when first taking job (e.g., orientation)
- c. Training offered by hospital since being in the position (e.g., in-service training)
- d. Outside education/training program undertaken by participant since being in her/his position (distinguish if to enhance current skills or to advance in current field VS. preparing for a new job/career; explore if any funding provided by hospital or through educational benefits)

Let's go back to talking about what's been going on at work for you.

WORK-RELATED ISSUES IF NOT DISCUSSED IN #2:

4. What kinds of changes have there been in your unit/department during the past year?

PROMPTS:

- a. Policies/procedures
- b. Responsibilities
- c. Pace/amount of work
- d. Schedule
- e. Staff turnover, staff shortages, staff hiring
- f. Treatment of groups of workers by hospital managers/administrators (e.g., on basis of gender, race/ethnicity, language, education, job title, some other group characteristic)
 - f. Interactions among co-workers
 - g. Interactions with supervisors/managers

5. We've been told that [Hospital] employees can participate in several benefit programs, including health insurance, pension, 401(K), life insurance, disability insurance, and education. Are these the benefits available? Are there any other benefits that you know of?

- a. Which do you participate in?
- b. Has your participation in <each participating benefit program> changed since last July's wage increase? What's changed?

PROMPTS:

1. Contribution started or stopped; amount increased or decreased?
2. Who's covered changed – someone added or taken off?

I want to move on to some questions about budgeting and how you make ends meet. I believe you were asked to bring the completed Budget Worksheet with you. We'll be talking about it in a few minutes.

PAY & BUDGET ISSUES IF NOT DISCUSSED IN #2:

6. My understanding is that you're paid every 2 weeks. Is that right?
 - a. Last year you reported earning <\$Amount> per hour. How much are you making per hour this year (since the raise last July 2017)?
 - b. IF IN THE SAME JOB SINCE LAST JULY:

Is the increase in your hourly pay due to the raise you got last July? Has anything else contribute to the change?

IF CHANGED JOBS SINCE LAST JULY:

About how much of the change in your hour pay is because you took a new job?

Did you also get a raise last July? How much was it (% or \$)?

C. What's your total (gross) salary per 2-week pay period? How much do you actually take home (net) each pay period?

d. IF WORKING OVERTIME MENTIONED IN QUESTION 1:

What affect does working overtime have on your take-home pay?

7. There's been a lot of discussion recently about wages and what wage rates should be.
- What wage do you think you deserve? How would you explain to a decision maker why you deserve that amount?
 - What wage do you think others who work as a <Respondent's Job Title> deserve?

IF DIFFERENT FROM WHAT RESPONDENT THINKS HE/SHE DESERVES:

How would you explain to a decision maker why others deserve a wage different from yours?

c. What would be a livable wage for you and other workers like you? How would you explain to a decision maker why that amount is reasonable?

8. We're interested in how you manage your budget over a month. I'd like to spend a few minutes reviewing the Budget Worksheet with you. [Interviewer & Participant - Review Budget Worksheet for clarity and completeness; discuss and reconcile any problems. Interviewer – compare last year's and this year's information)

a. IF THERE APPEARS TO BE NO CHANGE BETWEEN LAST YEAR'S AND THIS YEAR'S REPORTS OF HOUSEHOLD INCOME, SOURCES OF ASSISTANCE, AND/OR EXPENSES, CONFIRM THAT THAT IS CORRECT

b. IF CHANGE IN HOUSEHOLD INCOME:

There's a difference in your household income between last year and this year. What caused that change?

c. IF CHANGE IN SOURCES OF ASSISTANCE:

You reported receiving <Assistance> last year. How come you're no longer receiving <Assistance>?

d. IF CHANGE IN MONTHLY EXPENSES:

Your monthly expenses for <Expense Type> have changed since the last interview. What led to the change?

9. FOR PUBLIC BENEFITS (i.e., TANF, Housing Assistance [Section 8], Food Assistance [SNAP, WIC], LIHEAP, Reduced Transportation Connect Card, Lifeline ("Obama") phone, Childcare Assistance/Head Start) NOT CURRENTLY RECEIVED:

Sometimes people qualify for benefits but don't realize they do. Do you know if you qualify for <Benefits>?

IF YES, PROMPTS:

- a. How did you find out you qualified for <Benefit>?
- b. After you found out you qualified, did you apply for <Benefit>? What influenced your decision to apply/not apply for <Benefit>?

10. FOR PUBLIC BENEFITS (i.e., TANF, Housing Assistance [Section 8], Food Assistance [SNAP, WIC], LIHEAP, Reduced Transportation Connect Card, Lifeline ("Obama") phone, Childcare Assistance/Head Start) THAT ARE CURRENTLY RECEIVED:

Some workers have said they're concerned that the raises will make them ineligible for assistance they're now getting. What about you – Have you thought about what the raises may mean for your receipt of <Benefits>?

11. What do you (sometimes) have to forgo because you can't afford it?

PROMPTS:

- a. Medical care/medication
 1. How often
 2. Consequence/reaction
- b. Food
 1. How often
 2. Consequence/reaction

- c. Rent or mortgage payment/home repairs/other housing
 - 1. How often
 - 2. Consequence/reaction
- d. Other Bills/Expenses (utilities, phone, car, etc.)
 - 1. How often
 - 2. Consequence/reaction
- e. Leisure/Vacations
 - 1. How often
 - 2. Consequence/reaction
- f. Other
 - 1. How often
 - 2. Consequence/reaction

12. All of us sometimes have trouble making ends meet at the end of a month. How do you do it (i.e., make ends meet)? (Find out how often this happens, strategies used, respondent's reactions/feelings about using those strategies)

13. There's been a lot of talk lately about the importance of savings. We're interested in learning how you plan for:

a) IF LIVING WITH CHILDREN/GRANDCHILDREN:

Your children's/grandchildren's current or future educational costs?

- b) Big expenses (new cars, fridge, washing machine, additional education/job training for adults, vacations, etc.)?
- c) Emergencies (health, car, housing, etc.)?
- d) Retirement?

Now I have some questions about your life outside of work.

LIFE OUTSIDE WORK ISSUES IF NOT DISCUSSED IN #2:

14. With whom are you currently living?

PROMPTS:

- a. List according to relationship to respondent and age

- b. Are these the same people who were living with you last year when you were interviewed?
What's changed (move out, move in)?

15. Are you responsible for any family members not living with you?

IF YES, PROMPT:

- a. List according to relationship to respondent, age, and where person is living

16. Who do you rely on for help and support – for money, childcare, friendship, encouragement, cheering up?

PROMPT:

- a. Distinguish sources of financial support, practical support (childcare, food, clothing), and emotional support
- b. How often each type support received

17. Who relies on for help and support – for money, childcare, friendship, encouragement, cheering up?

PROMPT:

- a. Distinguish sources of financial support, practical support (childcare, food, clothing), and emotional support
- b. How often each type of support provided

18. How does your job affect the kinds of things you do outside of work?

PROMPTS:

- a. Type and frequency of activities with:
 - 1. Partner/spouse?
 - 2. Children/grandchildren?
 - 3. Things for self (relaxation, hobbies, exercise, additional education/training)?
 - 4. Other family members?
 - 5. Friends?

b. Tasks needed to keep the household running (laundry, cleaning, cooking, shopping)?

c. Your physical or mental health?

e. Participating in community/volunteer activities (church/mosque/synagogue, children's/grandchildren's schools, community groups)?

19. How does your income affect the kinds of things you do outside of work?

PROMPTS:

a. Type and frequency of activities with:

1. Partner/spouse?

2. Children/grandchildren?

3. Things for self (relaxation, hobbies, exercise, additional education/training)?

4. Other family members?

5. Friends?

b. Tasks needed to keep the household running (laundry, cleaning, cooking, shopping)?

c. Your physical or mental health?

e. Participating in community/volunteer activities (church/mosque/synagogue, children's/grandchildren's schools, community groups)?

We're up to the final questions. There are just a couple of more things I'd like to ask you about before we end.

20. I really appreciate the time you've taken to tell me about what's been going on with you over the past year. We've covered a lot of ground in this interview. I'd like you to take a minute and think back on what we've talked about.

How did the raise you received last July influence the changes in your life (inside/outside of work) you've reported?

21. My understanding is there have been three raises since the first union contract in 2016. Think back to what your life inside and outside work was like before the first raise happened. Now

think about what's going on with your life currently. When you put all the raises together, what differences have they made to your life at work and at home?

PROMPTS:

- a. Work benefits; savings
- b. Family, especially children
- c. Self-care
- d. Community involvement

22. Of everything we talked about today, what do you think is the most important thing you would want policy makers, your employer, or the general public to know?

Appendix C Comparison of Excluded Sample and Analytic Sample

Appendix Table 2 Comparison of Excluded Sample and Analytic Sample

Characteristics	Excluded Sample (N=39)	Analytic Sample (N=167)	P- value
Gender			0.24
Female	90%	83%	
Male	11%	17%	
Race			0.23
White	42%	53%	
Black	53%	42%	
Latino	0%	1%	
Asian	3%	1%	
Multiracial	0%	1%	
Other but not specified	3%	2%	
Age			0.01
18-24 years	5%	13%	
25-34 years	13%	33%	
35-44 years	11%	14%	
45-54 years	21%	20%	
55 and over	50%	20%	
Education			0.45
High school diploma or less	28%	21%	
Some college with no degree	39%	38%	
Associate degree or higher	40%	40%	
Other but not specified	0%	2%	
Hourly wage rate (M, SD, Range)	(16.98, 4.21, 12-30)	(16.51, 3.74, 10.97-30)	0.38
Annual household income (M, SD, Range)	(40,567, 30,656, 10,000-150,000)	(41,946, 32,400, 10,000-150,000)	0.72
Difficulty taking time off			0.47
Not difficult	57%	55%	
Difficult	43%	45%	
Work schedules			0.68
Standard	66%	67%	
Non-standard	34%	33%	
Autonomy (M, SD, Range)	(1.67, 0.64, 0-3)	(1.68, 0.64, 0-3)	0.35
Hardships (M, SD, Range)	(4.27, 3.71, 0-16)	(6.03, 3.54, 0-15)	0.42
Work-family conflict (M, SD, Range)	(2.34, 0.56, 1-4)	(1.81, 0.42, 0.75-3)	0.07
Perceived stress (M, SD, Range)	(6.77, 3.35, 0-15)	(6.90, 3.48, 0-15)	0.40
Mental health (M, SD, Range)	(9.39, 3.60, 1-15)	(9.23, 3.65, 1-15)	0.14

Bibliography

- Agosti, M. T., Andersson, I., Ejlertsson, G., & Janlöv, A.-C. (2015). Shift Work to Balance Everyday Life - a Salutogenic Nursing Perspective in Home Help Service in Sweden. *BMC Nursing*, *14*(1), 2. <https://doi.org/10.1186/s12912-014-0054-6>
- Aigner, D. J., & Cain, G. G. (1977). Statistical Theories of Discrimination in Labor Markets. *Industrial and Labor Relations Review*, *30*(2), 175-187. 10.1177/001979397703000204
- Allen, M. P., & Campbell, J. L. (1994). State Revenue Extraction from Different Income Groups: Variations in Tax Progressivity in the United States, 1916 to 1986. *American Sociological Review*, *59*(2), 169-186. <https://doi.org/10.2307/2096225>
- Alli, B. O. (2008). *Fundamental Principles of Occupational Health and Safety* (2nd ed.). International Labour Office.
- Althubaiti, A. (2016). Information Bias in Health Research: Definition, Pitfalls, and Adjustment Methods. *Journal of multidisciplinary healthcare*, *9*, 211-217. <https://doi.org/10.2147/JMDH.S104807>
- Appelbaum, E., & Schmitt, J. (2009). Low-Wage Work in High-Income Countries: Labor-Market Institutions and Business Strategy in the Us and Europe. *Human Relations*, *62*(12), 1907.
- Azuma, J. T., DeBaryshe, B. D., Gauci, K. T., & Stern, I. R. (2020). Mapping Access to Affordable Early Childhood Education and Care: Methodology and Application to Community Advocacy. *International Journal of Community Well-Being*. <https://doi.org/10.1007/s42413-020-00096-1>
- Bandalos, D. L. (2014). Relative Performance of Categorical Diagonally Weighted Least

- Squares and Robust Maximum Likelihood Estimation. *Structural Equation Modeling: A Multidisciplinary Journal*, 21(1), 102-116.
<https://doi.org/10.1080/10705511.2014.859510>
- Bartels, L. M. (2008). *Unequal Democracy: The Political Economy of the New Gilded Age*. Princeton; New York: Russell Sage Foundation.
- Bauman, K. (1998). Direct Measures of Poverty as Indicators of Economic Need: Evidence from the Survey of Income and Program Participation. In (Vol. no. 30). Washington, D.C.: Population Division, U.S. Census Bureau.
- Becker, G. S. (1985). Human Capital, Effort, and the Sexual Division of Labor. *Journal of Labor Economics*, 3(1), S33-S58. <https://doi.org/10.1086/298075>
- Bertrand, M., Chugh, D., & Mullainathan, S. (2005). Implicit Discrimination. *The American Economic Review*, 95(2), 94-98. <https://doi.org/10.1257/000282805774670365>
- Beverly, S. G. (2001). Measures of Material Hardship: Rationale and Recommendations. *Journal of Poverty*, 5(1), 23-41. https://doi.org/10.1300/J134v05n01_02
- Blau, F. D., & Kahn, L. M. (2013). Female Labor Supply: Why Is the United States Falling Behind? *American Economic Review*, 103(3), 251-256.
<https://doi.org/10.1257/aer.103.3.251>
- Blau, F. D., & Kahn, L. M. (2017). The Gender Wage Gap: Extent, Trends, and Explanations. *Journal of economic literature*, 55(3), 789-865. <https://doi.org/10.1257/jel.20160995>
- Blau, F. D., Brummund, P., & Yung-Hsu Liu, A. (2013). Trends in Occupational Segregation by Gender 1970-2009: Adjusting for the Impact of Changes in the Occupational Coding System. *Demography*, 50(2), 471-492. <https://doi.org/10.1007/s13524-012-0151-7>
- Blumberg, L. J., & Mann, C. (2020). *Quickly Expanding Medicaid Eligibility as an Urgent*

Response to the Coronavirus Pandemic.

https://www.urban.org/sites/default/files/publication/101910/quickly-expanding-medicaid-eligibility-as-an-urgent-response-to-the-coronavirus-pandemic_3.pdf

Bolino, M. C., Kelemen, T. K., & Matthews, S. H. (2021). Working 9-to-5? A Review of Research on Nonstandard Work Schedules. *Journal of organizational behavior*, 42(2), 188-211. <https://doi.org/10.1002/job.2440>

Bond, J. T., & Galinsky, E. (2012). *What Difference Do Job Characteristics Make to Low-Income Employees?* http://www.familiesandwork.org/site/research/reports/low-income_employees.pdf

Borgmann, L.-S., Kroll, L. E., Müters, S., Rattay, P., & Lampert, T. (2019). Work-Family Conflict, Self-Reported General Health and Work-Family Reconciliation Policies in Europe: Results from the European Working Conditions Survey 2015. *SSM - Population Health*, 9, 100465. <https://doi.org/10.1016/j.ssmph.2019.100465>

Borgmann, L.-S., Rattay, P., & Lampert, T. (2019). Health-Related Consequences of Work-Family Conflict from a European Perspective: Results of a Scoping Review. *Frontiers in public health*, 7, 189. <https://doi.org/10.3389/fpubh.2019.00189>

Boushey, H., & Ansel, B. (2016). *Working by the Hour: The Economic Consequences of Unpredictable Scheduling Practices*. Washington Center for Equitable Growth. <https://equitablegrowth.org/wp-content/uploads/2016/09/090716-unpred-sched-practices.pdf>

Boushey, H., & Bethney, G. (2001). *When Work Just Isn't Enough: Measuring Hardships Faced by Families after Moving from Welfare to Work*. <https://www.epi.org/files/page/-/old/briefingpapers/hardshipsbp.pdf>

- Browne, I., & Misra, J. (2003). The Intersection of Gender and Race in the Labor Market. *Annual Review of Sociology*, 29(1), 487-513.
<https://doi.org/10.1146/annurev.soc.29.010202.100016>
- Bullinger L. R. (2017). The Effect of Minimum Wages on Adolescent Fertility: A Nationwide Analysis. *American journal of public health*, 107(3), 447–452.
<https://doi.org/10.2105/AJPH.2016.303604>
- Buss, C., Casper, W. J., Marquardt, D. J., & Roberto, K. J. (2016). The Hidden Family Lives of Single Adults Without Dependent Children. In (Vol. 1): Oxford University Press.
- Butterworth, P., Rodgers, B., & Windsor, T. D. (2009). Financial Hardship, Socio-Economic Position and Depression: Results from the Path through Life Survey. *Social Science & Medicine*, 69(2), 229-237. <https://doi.org/10.1016/j.socscimed.2009.05.008>
- Carrillo, D., Harknett, K., Logan, A., Luhr, S., & Schneider, D. (2017). Instability of Work and Care: How Work Schedules Shape Child-Care Arrangements for Parents Working in the Service Sector. *Social Service Review*, 91(3), 422-455. <https://doi.org/10.1086/693750>
- Centers for Medicare & Medicaid Services. (2020). *State Plan Flexibilities*.
<https://www.medicaid.gov/resources-for-states/disaster-response-toolkit/state-plan-flexibilities/index.html>
- Chien, N. (2019). *Factsheet: Estimates of Child Care Eligibility & Receipt for Fiscal Year 2015*. US Department of Health and Human Services & Office of the Assistant Secretary for Planning and Evaluation.
<https://aspe.hhs.gov/sites/default/files/private/pdf/260361/CY2015ChildCareSubsidyEligibility.pdf>
- Claxton, G., Rae, M., Long, M., Damico, A., & Whitmore, H. (2018). Health Benefits in 2018:

- Modest Growth in Premiums, Higher Worker Contributions at Firms with More Low-Wage Workers. *Health Affairs (Project Hope)*, 37(11), 1892-1900.
- Cohen, S., & Williamson, G. (1988). Perceived Stress in a Probability Sample of the United States. In S. Spacapan & S. Oskamp (Eds.), *The Social Psychology of Health: Claremont Symposium on Applied Social Psychology*. Sage.
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A Global Measure of Perceived Stress. *Journal of Health and Social Behavior*, 24(4), 385-396. <https://doi.org/10.2307/2136404>
- Congressional Budget Office. (2021). *The Budgetary Effects of the Raise the Wage Act of 2021*. <https://www.cbo.gov/system/files/2021-02/56975-Minimum-Wage.pdf>
- Cook, J. T., & Frank, D. A. (2008). Food Security, Poverty, and Human Development in the United States. *Annals of the New York Academy of Sciences*, 1136(1), 193-209. <https://doi.org/10.1196/annals.1425.001>
- Cooper, D., & Worker, J. (2020). *The Coronavirus Pandemic Requires State and Local Policymakers to Act, in Addition to Demanding a Strong Federal Response*. <https://www.epi.org/blog/the-coronavirus-pandemic-requires-state-and-local-policymakers-to-act-in-addition-to-demanding-a-strong-federal-response/>
- Costa, G. (2010). Shift Work and Health: Current Problems and Preventive Actions. *Safety and health at work*, 1(2), 112-123. <https://doi.org/10.5491/SHAW.2010.1.2.112>
- Creswell, J. W. (2009). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (3rd ed.). Sage Publications.
- Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (Fifth ed.). SAGE Publications, Inc.
- Creswell, J. W., & Plano Clark, V. L. (2007). *Designing and Conducting Mixed Methods*

Research. SAGE Publications.

Danziger, S., Corcoran, M., Danziger, S., & Heflin, C. M. (2000). Work, Income, and Material Hardship after Welfare Reform. *The Journal of Consumer Affairs*, 34(1), 6-30.

<https://doi.org/10.1111/j.1745-6606.2000.tb00081.x>

Davis, K. D., Gere, J., & Sliwinski, M. J. (2017). Investigating the Work–Family Conflict and Health Link: Repetitive Thought as a Mechanism. *Stress and Health*, 33(4), 330-338.

<https://doi.org/10.1002/smi.2711>

DeRigne, L., Stoddard-Dare, P., & Quinn, L. (2016). Workers without Paid Sick Leave Less Likely to Take Time Off for Illness or Injury Compared to Those with Paid Sick Leave. *Health affairs Web exclusive*, 35(3), 520-527. <https://doi.org/10.1377/hlthaff.2015.0965>

DeWalt, K. M., & DeWalt, B. R. (2011). *Participant Observation: A Guide for Fieldworkers* (2nd ed.). Rowman & Littlefield, Md.

Dill, J. S., Morgan, J. C., Marshall, V. W., & Pruchno, R. (2013). Contingency, Employment Intentions, and Retention of Vulnerable Low-Wage Workers: An Examination of Nursing Assistants in Nursing Homes. *The Gerontologist*, 53(2), 222-234.

<https://doi.org/10.1093/geront/gns085>

Dinh, H., Cooklin, A. R., Leach, L. S., Westrupp, E. M., Nicholson, J. M., & Strazdins, L. (2017). Parents' Transitions into and out of Work-Family Conflict and Children's Mental Health: Longitudinal Influence Via Family Functioning. *Social Science & Medicine*, 194(Dec 2017), 42-50. <https://doi.org/10.1016/j.socscimed.2017.10.017>

Dobbins, D., Tercha, J., McCready, M., & Liu, A. (2016). *Child Care Deserts: Developing Solutions to Child Care Supply and Demand*. Child Care Aware of America.

<https://www.childcareaware.org/wp-content/uploads/2016/09/Child-Care-Deserts-report->

FINAL2.pdf

- Dollard, M. F., & Nesar, D. Y. (2013). Worker Health Is Good for the Economy: Union Density and Psychosocial Safety Climate as Determinants of Country Differences In worker Health and Productivity in 31 European Countries. *Social Science & Medicine*, 92, 114-123. <https://doi.org/10.1016/j.socscimed.2013.04.028>
- Dresser, L., Rogers, J., Ubert, E., & Walther, A. (2018). *State of Working Wisconsin 2018*. Retrieved December 31 from https://www.cows.org/_data/documents/1933.pdf
- Dube, A. (2019). Minimum Wages and the Distribution of Family Incomes. *American Economic Journal: Applied Economics*, 11(4), 268-304. <https://doi.org/10.1257/app.20170085>
- Dworsky, A., & Courtney, M. E. (2007). Barriers to Employment among Tanf Applicants and Their Consequences for Self-Sufficiency. *Families in Society*, 88(3), 379-389. <https://doi.org/10.1606/1044-3894.3647>
- Enchautegui, M. (2013). *Nonstandard Work Schedules and the Well-Being of Low-Income Families*. Low-Income Working Families Paper. <https://www.urban.org/sites/default/files/publication/32696/412877-Nonstandard-Work-Schedules-and-the-Well-being-of-Low-Income-Families.PDF>
- Engel, R. J., & Schutt, R. K. (2017). *The practice of research in social work* (Fourth edition.). SAGE.
- Engel, R., Wexler, S., Kim, S., Tabachnick, M., Ballentine, K., Woo, J., Goodkind, J., Petracchi, H., & Shook, J. (2020). *Can Healthcare Workers' Family Incomes Support Their Families?* Research Brief. <http://www.pittsburghwagestudy.pitt.edu/wp-content/uploads/2020/03/EPI-Brief-Final.pdf>
- England, P., Budig, M., & Folbre, N. (2014). Wages of Virtue: The Relative Pay of Care Work.

- Social Problems*, 49(4), 455-473. <https://doi.org/10.1525/sp.2002.49.4.455>
- Finney, S. J., & DiStefano, C. (2013). Nonnormal and Categorical Data in Structural Equation Modeling. In G. R. Hancock & R. O. Mueller (Eds.), *Structural Equation Modeling: A Second Course* (2 ed., pp. 439-492). Information Age Publishing, Inc.
- Flavin, P., & Shufeldt, G. (2017). The State of the Minimum Wage: Federalism, Economic Policy, and Workers' Well-Being. In (Vol. 15, pp. 167-187): De Gruyter.
- Fraga, L. M., Dobbins, D. R., Haynie, K., Tercha, J., Bump, J., Norton, M., Scott, K., Rose-Malm, J., Springfield, J., & Stewart, J. (2018). The Us and the High Cost of Child Care: A Review of Prices and Proposed Solutions for a Broken System: 2018 Report.
- Frank, R. H. (2007). *Falling Behind: How Rising Inequality Harms the Middle Class* (1 ed., Vol. 4). University of California Press. <https://doi.org/10.1525/j.ctt1pnvzf>
- Frost, D. M., & LeBlanc, A. J. (2014). Nonevent Stress Contributes to Mental Health Disparities Based on Sexual Orientation: Evidence from a Personal Projects Analysis. *The American journal of orthopsychiatry*, 84(5), 557-566. <https://doi.org/10.1037/ort0000024>
- García-Mainar, I., Montuenga, V. M., & García-Martín, G. (2018). Occupational Prestige and Gender-Occupational Segregation. *Work, Employment and Society*, 32(2), 348-367. <https://doi.org/10.1177/0950017017730528>
- Gardner, D. G., Dyne, L., & Pierce, J. L. (2004). The Effects of Pay Level on Organization-Based Self-Esteem and Performance: A Field Study. *Journal of Occupational and Organizational Psychology*, 77(3), 307-322. <https://doi.org/10.1348/0963179041752646>
- Gautié, J., & Schmitt, J. (2010). *Low-Wage Work in the Wealthy World*. Russell Sage Foundation. <https://doi.org/10.7758/9781610446303>
- Geertz, C. (1973). *The Interpretation of Cultures Selected Essays*. Basic Books.

- Geller, A., & Curtis, M. A. (2018). A Longitudinal Examination of Housing Hardships among Urban Fathers. *Journal of Marriage and Family*, 80(5), 1176-1186.
<https://doi.org/10.1111/jomf.12492>
- Gershoff, E. T., Aber, J. L., Raver, C. C., & Lennon, M. C. (2007). Income Is Not Enough: Incorporating Material Hardship into Models of Income Associations with Parenting and Child Development. *Child Development*, 78(1), 70-95. <https://doi.org/10.1111/j.1467-8624.2007.00986.x>
- Golden, L. (2015). *Irregular Work Scheduling and Its Consequences*. E. P. Institute.
<https://www.epi.org/publication/irregular-work-scheduling-and-its-consequences/>
- Goldin, C. (2014). A Grand Gender Convergence: Its Last Chapter. *The American Economic Review*, 104(4), 1091-1119. <https://doi.org/10.1257/aer.104.4.1091>
- Goldman, T., Gupta, P., & Hernandez, E. (2018). *The Struggles of Low-Wage Work*. The Center for Law and Social Policy. Retrieved December 31 from
https://www.clasp.org/sites/default/files/publications/2018/05/2018_lowwagework.pdf
- Greene, J. C., & Caracelli, V. J. (1997). Defining and Describing the Paradigm Issue in Mixed-Method Evaluation. *New Directions for Evaluation*, 1997(74), 5-17.
<https://doi.org/10.1002/ev.1068>
- Greene, J. C., Benjamin, L., & Goodyear, L. (2001). The Merits of Mixing Methods in Evaluation. *Evaluation*, 7(1), 25-44. <https://doi.org/10.1177/13563890122209504>
- Greenhaus, J. H., & Beutell, N. J. (1985). Sources of Conflict between Work and Family Roles. *Academy of Management Review*, 10(1), 76-88.
<https://doi.org/10.5465/AMR.1985.4277352>
- Greenhaus, J. H., & Kopelman, R. E. (1981). Conflict between Work and Nonwork Roles:

- Implications for the Career Planning Process. *Human Resource Planning*, 4, 1-10.
- Greenhaus, J. H., Allen, T. D., & Spector, P. E. (2006). Health Consequences of Work–Family Conflict: The Dark Side of the Work–Family Interface. In L. P. Pamela & C. G. Daniel (Eds.), *Employee Health, Coping and Methodologies* (Vol. 5, pp. 61-98). Emerald Group Publishing Limited. [https://doi.org/10.1016/S1479-3555\(05\)05002-X](https://doi.org/10.1016/S1479-3555(05)05002-X)
- Gringeri, C. E. (2001). The Poverty of Hard Work: Multiple Jobs and Low Wages in Family Economies of Rural Utah Households. *Journal of Sociology & Social Welfare*, 28(4), 3.
- Gundersen, C., & Ziliak, J. P. (2015). Food Insecurity and Health Outcomes. *Health Affairs (Project Hope)*, 34(11), 1830-1839. <https://doi.org/10.1377/hlthaff.2015.0645>
- Gutek, B. A., Searle, S., & Klepa, L. (1991). Rational Versus Gender Role Explanations for Work-Family Conflict. *Journal of Applied Psychology*, 76(4), 560-568. <https://doi.org/10.1037/0021-9010.76.4.560>
- Hacker, J. S., & Pierson, P. (2010). Winner-Take-All Politics: Public Policy, Political Organization, and the Precipitous Rise of Top Incomes in the United States. *Politics & Society*, 38(2), 152-204. <https://doi.org/10.1177/0032329210365042>
- Hagedorn, J., Paras, C. A., Greenwich, H., & Hagopian, A. (2016). The Role of Labor Unions in Creating Working Conditions That Promote Public Health. *American journal of public health*, 106(6), 989-995. <https://doi.org/10.2105/AJPH.2016.303138>
- Harknett, K., & Schneider, D. (2020). Precarious Work Schedules and Population Health. *Health Affairs Health Policy Brief*. <https://doi.org/10.1377/hpb20200206.806111>
- Harvey, D. (2005). *A Brief History of Neoliberalism*. Oxford University Press.
- Harvey, D. (2007). Neoliberalism as Creative Destruction. *The Annals of the American Academy of Political and Social Science*, 610(1), 22-44.

<https://doi.org/10.1177/0002716206296780>

Haskel, J., Lawrence, R. Z., Learner, E. E., & Slaughter, M. J. (2012). Globalization and U.S.

Wages: Modifying Classic Theory to Explain Recent Facts. *The Journal of Economic Perspectives*, 26(2), 119-139. <https://doi.org/10.1257/jep.26.2.119>

Heflin, C. (2016). Family Instability and Material Hardship: Results from the 2008 Survey of Income and Program Participation. *Journal of Family and Economic Issues*, 37(3), 359-372. <https://doi.org/10.1007/s10834-016-9503-6>

Heflin, C. & Iceland, J. (2009). Poverty, Material Hardship, and Depression. *Social Science Quarterly*, 90(5), 1051-1071. <https://doi.org/10.1111/j.1540-6237.2009.00645.x>

Henly, J. R., & Lambert, S. J. (2014). Unpredictable Work Timing in Retail Jobs: Implications for Employee Work–Life Conflict. *ILR Review*, 67(3), 986-1016.

<https://doi.org/10.1177/0019793914537458>

Hesse-Biber, S. N., & Leavy, P. (2011). *The Practice of Qualitative Research*. Los Angeles: SAGE.

Hill, H. D., & Romich, J. (2018). How Will Higher Minimum Wages Affect Family Life and Children's Well-Being?. *Child development perspectives*, 12(2), 109–114.

<https://doi.org/10.1111/cdep.12270>

Himmelstein, K. E. W., & Venkataramani, A. S. (2019). Economic Vulnerability among Us Female Health Care Workers: Potential Impact of a \$15-Per-Hour Minimum Wage.

American journal of public health, 109(2), 198-205.

<https://doi.org/10.2105/AJPH.2018.304801>

Holmes, W. C. (1998). A Short, Psychiatric, Case-Finding Measure for Hiv Seropositive Outpatients: Performance Characteristics of the 5-Item Mental Health Subscale of the Sf-

- 20 in a Male, Seropositive Sample. *Medical Care*, 36(2), 237-243.
<https://doi.org/10.1097/00005650-199802000-00012>
- Hu, L., & Bentler, P. M. (1999). Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria Versus New Alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55. <https://doi.org/10.1080/10705519909540118>
- Huang, Y., Heflin, C. M., & Validova, A. (2020). Material Hardship, Perceived Stress, and Health in Early Adulthood. *Annals of Epidemiology*, S1047-2797(1020)30298-30292.
<https://doi.org/10.1016/j.annepidem.2020.08.017>
- Jacobs, D., & Myers, L. (2014). Union Strength, Neoliberalism, and Inequality: Contingent Political Analyses of U.S. Income Differences since 1950. *American Sociological Review*, 79(4), 752-774. <https://doi.org/10.1177/0003122414536392>
- Jansen, N. W., Kant, I., Nijhuis, F. J., Swaen, G. M., & Kristensen, T., S. (2004). Impact of Worktime Arrangements on Work-Home Interference among Dutch Employees. *Scandinavian journal of work, environment & health*, 30(2), 139-148.
<https://doi.org/10.5271/sjweh.771>
- Jehan, S., Zizi, F., Pandi-Perumal, S. R., Myers, A. K., Auguste, E., Jean-Louis, G., & McFarlane, S. I. (2017). Shift Work and Sleep: Medical Implications and Management. *Sleep medicine and disorders: international journal*, 1(2), 00008.
- Johnson, R. C., Kalil, A., & Dunifon, R. E. (2012). Employment Patterns of Less-Skilled Workers: Links to Children's Behavior and Academic Progress. *Demography*, 49(2), 747-772. <https://doi.org/10.1007/s13524-011-0086-4>
- Jones, T. (2017). A Different Class of Care: The Benefits Crisis and Low-Wage Workers. *The American University law review*, 66(3), 691.

- Judge, T. A., Boudreau, J. W., & Bretz, R. D. (1994). Job and Life Attitudes of Male Executives. *Journal of Applied Psychology, 79*(5), 767-782. <https://doi.org/10.1037/0021-9010.79.5.767>
- Kalleberg, A. L. (2011). *Good Jobs, Bad Jobs: The Rise of Polarized and Precarious Employment Systems in the United States, 1970s to 2000s*. Russell Sage Foundation. <https://doi.org/10.7758/9781610447478>
- Katz, J., Crean, H. F., Cerulli, C., & Poleshuck, E. L. (2018). Material Hardship and Mental Health Symptoms among a Predominantly Low Income Sample of Pregnant Women Seeking Prenatal Care. *Maternal and Child Health Journal, 22*(9), 1360-1367. <https://doi.org/10.1007/s10995-018-2518-x>
- Kelly, E. L., Moen, P., & Tranby, E. (2011). Changing Workplaces to Reduce Work-Family Conflict: Schedule Control in a White-Collar Organization. *American Sociological Review, 76*(2), 265-290. <https://doi.org/10.1177/0003122411400056>
- Kiely, K. M., Leach, L. S., Olesen, S. C., & Butterworth, P. (2015). How Financial Hardship Is Associated with the Onset of Mental Health Problems over Time. *Social Psychiatry and Psychiatric Epidemiology, 50*(6), 909-918. <https://doi.org/10.1007/s00127-015-1027-0>
- Kilbourne, B. S., England, P., Farkas, G., Beron, K., & Weir, D. (1994). Returns to Skill, Compensating Differentials, and Gender Bias: Effects of Occupational Characteristics on the Wages of White Women and Men. *American Journal of Sociology, 100*(3), 689-719. <https://doi.org/10.1086/230578>
- Kim, J., Shim, J., & Lee, R. (2016). Material Hardship and Depression among Low-Income Households in South Korea: Differences by Household Type: Material Hardship and Depression in South Korea. *International Journal of Social Welfare, 25*(2), 187-198.

<https://doi.org/10.1111/ijsw.12181>

Kim, Y., Park, A., & Kim, K. (2019). Food Insecurity and Depressive Symptoms of Older Adults Living Alone in South Korea. *Ageing and Society*, 39(9), 2042-2058.

<https://doi.org/10.1017/S0144686X18000429>

Kline, R. B. (2016). *Principles and Practice of Structural Equation Modeling* (Fourth ed.). Guilford Press.

Komro, K. A., Livingston, M. D., Markowitz, S., & Wagenaar, A. C. (2016). The Effect of an Increased Minimum Wage on Infant Mortality and Birth Weight. *American journal of public health*, 106(8), 1514–1516. <https://doi.org/10.2105/AJPH.2016.303268>

Kunst, J. R., Løset, G. K., Hosøy, D., Bjorvatn, B., Moen, B. E., Magerøy, N., & Pallesen, S. (2014, 2014/01/01). The Relationship between Shift Work Schedules and Spillover in a Sample of Nurses. *International Journal of Occupational Safety and Ergonomics*, 20(1), 139-147. <https://doi.org/10.1080/10803548.2014.11077030>

Kushel, M. B., Gupta, R., Gee, L., & Haas, J. S. (2006). Housing Instability and Food Insecurity as Barriers to Health Care among Low-Income Americans. *Journal of General Internal Medicine*, 21(1), 71-77. <https://doi.org/10.1111/j.1525-1497.2005.00278.x>

Lambert, E. G. (2004, 2004/06/01). The Impact of Job Characteristics on Correctional Staff Members. *The Prison Journal*, 84(2), 208-227. <https://doi.org/10.1177/0032885504265078>

Landis, J. R., & Gary, G. K. (1977). The Measurement of Observer Agreement for Categorical Data. *Biometrics*, 33(1), 159-174. <https://doi.org/10.2307/2529310>

Lei, P. W., & Wu, Q. (2007). An Ncme Instructional Module on Introduction to Structural Equation Modeling: Issues and Practical Consideration. *Educational Measurement:*

- Issues and Practice* 33-44, 26(3). <https://doi.org/10.1111/j.1745-3992.2007.00099.x>
- Leineweber, C., Baltzer, M., Magnusson Hanson, L. L., Westerlund, H., Stockholms, u., Samhällsvetenskapliga, f., & Stressforskningsinstitutet. (2013). Work-Family Conflict and Health in Swedish Working Women and Men: A 2-Year Prospective Analysis (the Slosh Study). *European journal of public health*, 23(4), 710-716.
<https://doi.org/10.1093/eurpub/cks064>
- Lenhart O. (2017). Do Higher Minimum Wages Benefit Health? Evidence From the UK. *Journal of policy analysis and management : [the journal of the Association for Public Policy Analysis and Management]*, 36(4), 828–852. <https://doi.org/10.1002/pam.22006>
- Leslie, S. (2016). *The Most Unappreciated Jobs in America*. Retrieved December 31 from <https://www.payscale.com/career-news/2016/11/unappreciated-jobs>
- Levanon, A., England, P., & Allison, P. (2009). Occupational Feminization and Pay: Assessing Causal Dynamics Using 1950–2000 U.S. Census Data. *Social Forces*, 88(2), 865-891.
<https://doi.org/10.1353/sof.0.0264>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. Sage Publications.
- Long, S. H., & Marquis, M. S. (2001). Low-Wage Workers and Health Insurance Coverage: Can Policymakers Target Them through Their Employers? *Inquiry*, 38(3), 331-337.
https://doi.org/10.5034/inquiryjrnl_38.3.331
- Loopstra, R., Reeves, A., McKee, M., & Stuckler, D. (2016). Food insecurity and social protection in Europe: Quasi-natural experiment of Europe's great recessions 2004-2012. *Preventive medicine*, 89, 44–50. <https://doi.org/10.1016/j.ypmed.2016.05.010>
- Lyly-Yrjanainen, M. (2008). *Who Needs up-Skilling? Low-Skilled and Low-Qualified Workers in the European Union*. European Foundation for the Improvement of Living and Working

- Conditions. Retrieved December 31 from
http://www.eurofound.europa.eu.pitt.idm.oclc.org/sites/default/files/ef_publication/field_ef_document/ef0897en.pdf
- Marmot, M., & Allen, J. J. (2014). Social Determinants of Health Equity. *American journal of public health, 104 Suppl 4(S4)*, S517-S519. <https://doi.org/10.2105/AJPH.2014.302200>
- Marshall, G. L., & Tucker-Seeley, R. (2018). The Association between Hardship and Self-Rated Health: Does the Choice of Indicator Matter? *Annals of Epidemiology, 28(7)*, 462-467. <https://doi.org/10.1016/j.annepidem.2018.03.013>
- Marshall, G. L., Thorpe, R. J., & Szanton, S. L. (2017). Material Hardship and Self-Rated Mental Health among Older Black Americans in the National Survey of American Life. *Health & Social Work, 42(2)*, 87-95. <https://doi.org/10.1093/hsw/hlx008>
- McCabe, C. J., Thomas, K. J., Brazier, J. E., & Coleman, P. (1996). Measuring the Mental Health Status of a Population: A Comparison of the Ghq-12 and the Sf-36 (Mhi-5). *The British Journal of Psychiatry, 169(4)*, 516-521. <https://doi.org/10.1192/bjp.169.4.516>
- McDaid, D., Quaglio, G., António Correia de, C., Dario, C., Woensel, L. V., Karapiperis, T., & Reeves, A. (2013). Health Protection in Times of Economic Crisis: Challenges and Opportunities for Europe. *Journal of Public Health Policy, 34(4)*, 489-501. <https://doi.org/10.1057/jphp.2013.35>
- McHorney, C. A., & Ware, J. E. (1995). Construction and Validation of an Alternate Form General Mental Health Scale for the Medical Outcomes Study Short-Form 36-Item Health Survey. *Medical Care, 33(1)*, 15-28.
- McKnight, A., Stewart, K., Himmelweit, S. M., & Palillo, M. (2016). *Low Pay and in-Work Poverty: Preventative Measures and Preventative Approaches*. European Commission.

<https://www.lse.ac.uk/business/consulting/assets/documents/Low-Pay-and-In-Work-Poverty.pdf>

McMenamin, T. (2007). *A time to work: Recent trends in shiftwork and flexible schedules*.

Washington, D.C. Retrieved from <https://www.bls.gov/opub/mlr/2007/12/art1full.pdf>

Meyer, I. H., Schwartz, S., & Frost, D. M. (2008). Social Patterning of Stress and Coping: Does Disadvantaged Social Statuses Confer More Stress and Fewer Coping Resources? *Social Science & Medicine*, 67(3), 368-379. <https://doi.org/10.1016/j.socscimed.2008.03.012>

Miller, C. D., Gerdes, A., & Bragger, T. (2020). Policy Point-Counterpoint: Could a Universal Childcare Policy Be Implemented to Help Working Families in the U.S.? *International social science review*, 96(1), 1-10.

Morrissey, T. W. (2017). Child Care and Parent Labor Force Participation: A Review of the Research Literature. *Review of Economics of the Household*, 15(1), 1-24.

<https://doi.org/10.1007/s11150-016-9331-3>

Muramatsu, N., Sokas, R. K., Lukyanova, V. V., & Zanoni, J. (2019). Perceived Stress and Health among Home Care Aides: Caring for Older Clients in a Medicaid-Funded Home Care Program. *Journal of Health Care for the Poor and Underserved*, 30(2), 721-738.

<https://doi.org/10.1353/hpu.2019.0052>

Neckerman, K. M. P., Garfinkel, I. P., Teitler, J. O. P., Waldfogel, J. P., & Wimer, C. P. (2016). Beyond Income Poverty: Measuring Disadvantage in Terms of Material Hardship and Health. *Academic Pediatrics*, 16(3), S52-S59. <https://doi.org/10.1016/j.acap.2016.01.015>

Nelson, C. C., Li, Y., Sorensen, G., & Berkman, L. F. (2012). Assessing the Relationship between Work-Family Conflict and Smoking. *American journal of public health*, 102(9), 1767-1772. <https://doi.org/10.2105/AJPH.2011.300413>

- Newell, F. D., Williams, P. L., & Watt, C. G. (2014). Is the minimum enough? Affordability of a nutritious diet for minimum wage earners in Nova Scotia (2002-2012). *Canadian journal of public health = Revue canadienne de sante publique*, 105(3), e158–e165.
<https://doi.org/10.17269/cjph.105.4322>
- Nord, M., & Parker, L. (2010). How Adequately Are Food Needs of Children in Low-Income Households Being Met? *Children and Youth Services Review*, 32(9), 1175-1185.
<https://doi.org/10.1016/j.childyouth.2010.03.005>
- Ohu, E. A., Spitzmueller, C., Zhang, J., Thomas, C. L., Osezua, A., & Yu, J. (2018). When Work-Family Conflict Hits Home: Parental Work-Family Conflict and Child Health. *Journal of occupational health psychology*, 24(5), 590-601.
<https://doi.org/10.1037/ocp0000145>
- Olden, K., & White, S. (2005). Health-Related Disparities: Influence of Environmental Factor. *Medical Clinics of North America*, 89(4), 721-738.
<https://doi.org/10.1016/j.mcna.2005.02.001>
- Ouellette, T., Burstein, N., Long, D., & Beecroft, E. (2004). *Measures of Material Hardship*.
<https://aspe.hhs.gov/system/files/pdf/73366/report.pdf>
- Pearlin, L. I. (1989). The Sociological Study of Stress. *Journal of Health and Social Behavior*, 30(3), 241-256. <https://doi.org/10.2307/2136956>
- Pearlin, L. I., Menaghan, E. G., Lieberman, M. A., & Mullan, J. T. (1981). The Stress Process. *Journal of Health and Social Behavior*, 22(4), 337-356. <https://doi.org/10.2307/2136676>
- Peipins, L. A., Soman, A., Berkowitz, Z., & White, M. C. (2012). The Lack of Paid Sick Leave as a Barrier to Cancer Screening and Medical Care-Seeking: Results from the National Health Interview Survey. *BMC public health*, 12, 520-520. [145](https://doi.org/10.1186/1471-</p></div><div data-bbox=)

2458-12-520

Pennsylvania Department of Labor and Industry. (2021). *Pa Monthly Workstats*.

<https://www.workstats.dli.pa.gov/Documents/PAMW/PAMW.pdf>

Pentecost M. J. (2007). The future of employer-based health insurance. *The Permanente journal*,

11(2), 91–93. <https://doi.org/10.7812/tpp/06-148>

Polanyi, K. (2001). *The Great Transformation: The Political and Economic Origins of Our*

Time. Beacon Press.

Prashanth, T., Mohammed Kamal, O., Kartini Abdul, G., Tan Kock, W., Shaziti, A., & Nur

Fatihah Mat, Y. (2017). The Role of Social Support in Mediating Stress and Depression.

Online journal of health & allied sciences : OJHAS, *16*(1).

Presser, H. B., & Cox, A. G. (1998). Work Schedules of Low-Educated American Women and

Welfare Reform. *Family Economics and Nutrition Review*, *11*(1/2), 84.

QSRInternational. (2015). *Nvivo Qualitative Data Analysis Software*.

Quinn, T. D., Jakicic, J. M., Fertman, C. I., & Barone Gibbs, B. (2017). Demographic Factors,

Workplace Factors and Active Transportation Use in the USA: A Secondary Analysis of

2009 Nhts Data. *Journal of epidemiology and community health (1979)*, *71*(5), 480-486.

<https://doi.org/10.1136/jech-2016-207820>

Rector, R. E., Johnson, K. A., & Youssef, S. E. (1999). The Extent of Material Hardship and

Poverty in the United States. *Review of Social Economy*, *57*(3), 351-387.

<https://doi.org/10.1080/003467699000000007>

Rinz, K., & Voorheis, J. (2018). *The Distributional Effects of Minimum Wages: Evidence from*

Linked Survey and Administrative Data CARRA Working Papers 2018-02). Center for

Economic Studies. U.S. Census Bureau.

- Robertson, R. (2009). *Globalization, Wages, and the Quality of Jobs: Five Country Studies*. World Bank. <https://doi.org/10.1596/978-0-8213-7934-9>
- Rodems, R. (2019). *Hidden Hardship in the United States: Material Well-Being above the Poverty Line*. The Inequality Lab at the University of Michigan. https://theinequalitylab.com/wp-content/uploads/Rodems_DP-2019-3.pdf?189db0&189db0
- Romich, J. L. (2017). Is Raising the Minimum Wage a Good Idea? Evidence and Implications for Social Work. *Social Work, 62*(4), 367-370. <https://doi.org/10.1093/sw/swx033>
- Ross, M., & Bateman, N. (2019). *Meet the Low-Wage Workforce*. Brookings Institution. https://www.brookings.edu/wp-content/uploads/2019/11/201911_Brookings-Metro_low-wage-workforce_Ross-Bateman.pdf#page=5
- Rumpf, H.-J., Meyer, C., Hapke, U., & John, U. (2001). Screening for Mental Health: Validity of the Mhi-5 Using Dsm-Iv Axis I Psychiatric Disorders as Gold Standard. *Psychiatry Research, 105*(3), 243-253. [https://doi.org/10.1016/S0165-1781\(01\)00329-8](https://doi.org/10.1016/S0165-1781(01)00329-8)
- Sandstrom, H., Claessens, A., Stoll, M., Greenberg, E., Alexander, D., Runes, C., & Henly, J. R. (2018). *Mapping Child Care Demand and the Supply of Care for Subsidized Families*. Urban Institute. <https://www.urban.org/research/publication/mapping-child-care-demand-and-supply-care-subsidized-families>
- Schieman, S., Glavin, P., & Milkie, M. A. (2009). When Work Interferes with Life: Work-Nonwork Interference and the Influence of Work-Related Demands and Resources. *American Sociological Review, 74*(6), 966-988. <https://doi.org/10.1177/000312240907400606>
- Schiff, M., & Leip, L. (2019). The Impact of Job Expectations, Workload, and Autonomy on

- Work-Related Stress among Prison Wardens in the United States. *Criminal justice and behavior*, 46(1), 136-153. <https://doi.org/10.1177/0093854818802876>
- Schneider, D., & Harknett, K. (2019, June 27). The Brutal Psychological Toll of Erratic Work Schedules. *Washington Post*.
https://www.washingtonpost.com/outlook/2019/06/27/brutal-psychological-toll-erratic-work-schedules/?utm_term=.576fce85fdb5
- Schneider, D., & Harknett, K. (2019). Consequences of Routine Work-Schedule Instability for Worker Health and Well-Being. *American Sociological Review*, 84(1), 82-114.
<https://doi.org/10.1177/0003122418823184>
- Schwartz, S., & Meyer, I. H. (2010). Mental Health Disparities Research: The Impact of within and between Group Analyses on Tests of Social Stress Hypotheses. *Social Science & Medicine*, 70(8), 1111-1118. <https://doi.org/10.1016/j.socscimed.2009.11.032>
- Shatté, A., Perlman, A., Smith, B., & Lynch, W. D. (2017). The Positive Effect of Resilience on Stress and Business Outcomes in Difficult Work Environments. *Journal of Occupational and Environmental Medicine*, 59(2).
https://journals.lww.com/joem/Fulltext/2017/02000/The_Positive_Effect_of_Resilience_on_Stress_and.1.aspx
- Sherman, B. W., Gibson, T. B., Lynch, W. D., & Addy, C. (2017). Health Care Use And Spending Patterns Vary By Wage Level In Employer-Sponsored Plans. *Health affairs (Project Hope)*, 36(2), 250–257. <https://doi.org/10.1377/hlthaff.2016.1147>
- Skobba, K., Bruin, M. J., & Yust, B. L. (2013). Beyond Renting and Owning: The Housing Accommodations of Low-Income Families. *Journal of Poverty*, 17(2), 234-252.
<https://doi.org/10.1080/10875549.2013.775992>

- Smith, V., & Halpin, B. (2014). *Low-Wage Work Uncertainty Often Traps Low-Wage Workers*. UC Davis Center for Poverty Research. Retrieved December 31 from <https://poverty.ucdavis.edu/policy-brief/low-wage-work-uncertainty-often-traps-low-wage-workers>
- Stoddard-Dare, P., DeRigne, L., Collins, C. C., Quinn, L. M., & Fuller, K. (2018). Paid Sick Leave and Psychological Distress: An Analysis of U.S. Workers. *The American journal of orthopsychiatry*, 88(1), 1-9. <https://doi.org/10.1037/ort0000293>
- Swanberg, J. E. (2005). Job–Family Role Strain among Low-Wage Workers. *Journal of Family and Economic Issues*, 26(1), 143-158. <https://doi.org/10.1007/s10834-004-1416-0>
- Taber, K. S. (2018). The Use of Cronbach’s Alpha When Developing and Reporting Research Instruments in Science Education. *Research in Science Education*, 48(6), 1273-1296. <https://doi.org/10.1007/s11165-016-9602-2>
- Tarpey, M. (2018). *What Ever Happened to Middle Wage Jobs?* Career Builder. Retrieved December 31 from <https://www.careerbuilder.com/advice/what-ever-happened-to-middle-wage-jobs>
- The White House. (n.d.). *American Families Plan*. <https://www.whitehouse.gov/american-families-plan/>
- Thoits, P. A. (2010). Stress and Health: Major Findings and Policy Implications. *Journal of Health and Social Behavior*, 51(1_suppl), S41-S53. <https://doi.org/10.1177/0022146510383499>
- Thomas, M. M. C., Miller, D. P., & Morrissey, T. W. (2019). Food Insecurity and Child Health. *Pediatrics*, 144(4), e20190397. <https://doi.org/10.1542/peds.2019-0397>
- Thorsen, S. V., Rugulies, R., Hjarsbech, P. U., & Bjorner, J. B. (2013). The Predictive Value of

- Mental Health for Long-Term Sickness Absence: The Major Depression Inventory (Mdi) and the Mental Health Inventory (Mhi-5) Compared. *BMC medical research methodology*, 13(1), 115-115. <https://doi.org/10.1186/1471-2288-13-115>
- Tilden, V. P., Cox, K. S., Moore, J. E., & Naylor, M. D. (2018). Strategic Partnerships to Address Adverse Social Determinants of Health: Redefining Health Care. *Nursing Outlook*, 66(3), 233-236. <https://doi.org/10.1016/j.outlook.2018.03.002>
- Tomaskovic-Devey, D., Rainey, A., Avent-Holt, D., Bandelj, N., Boza, I., Cort, D., Godechot, O., Hajdu, G., Hällsten, M., Henriksen, L. F., Hermansen, A. S., Hou, F., Jung, J., Kanjuo-Mrčela, A., King, J., Kodama, N., Kristal, T., Křížková, A., Lippényi, Z., Melzer, S. M., Mun, E., Penner, A., Petersen, T., Poje, A., Safi, M., Thaning, M., & Tufail, Z. (2020). Rising between-Workplace Inequalities in High-Income Countries. *Proceedings of the National Academy of Sciences*, 117(17), 9277. <https://doi.org/10.1073/pnas.1918249117>
- Tsao, T. Y., Konty, K. J., Van Wye, G., Barbot, O., Hadler, J. L., Linos, N., & Bassett, M. T. (2016). Estimating Potential Reductions in Premature Mortality in New York City From Raising the Minimum Wage to \$15. *American journal of public health*, 106(6), 1036–1041. <https://doi.org/10.2105/AJPH.2016.303188>
- Tucker-Seeley, R. D., Harley, A. E., Stoddard, A. M., & Sorensen, G. G. (2013). Financial Hardship and Self-Rated Health among Low-Income Housing Residents. *Health Education & Behavior*, 40(4), 442-448. <https://doi.org/10.1177/1090198112463021>
- United Nations Development Program. (2016). *Human development report 2016*. New York; London; United Nations.
- U.S. Bureau of Labor Statistics. (2020). *Employee Benefits in the United States*. Washington,

- DC: U.S. Department of Labor.
- U.S. Department of Labor. (2008). Fact Sheet #22: Hours Worked Under the Fair Labor Standards Act (FLSA).
<https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/whdfs22.pdf>
- U.S. Department of Labor. (n.d.). *Families First Coronavirus Response Act: Employee Paid Leave Rights*. <https://www.dol.gov/agencies/whd/pandemic/ffcra-employee-paid-leave#:~:text=Up%20to%20an%20additional%2010,care%20provider%20is%20closed%20or>
- Vahedi, A., Krug, I., & Westrupp, E. M. (2019). Crossover of Parents' Work-Family Conflict to Family Functioning and Child Mental Health. *Journal of Applied Developmental Psychology, 62*, 38-49. <https://doi.org/10.1016/j.appdev.2019.01.001>
- Vallejo, M. A., Vallejo-Slocker, L., Fernández-Abascal, E. G., & Mañanes, G. (2018). Determining Factors for Stress Perception Assessed with the Perceived Stress Scale (PSS-4) in Spanish and Other European Samples [Original Research]. *Frontiers in Psychology, 9*. <https://doi.org/10.3389/fpsyg.2018.00037>
- Van Buren, H. J. (2001). If Fairness Is the Problem, Is Consent the Solution? Integrating Isct and Stakeholder Theory. *Business Ethics Quarterly, 11*(3), 481-499.
<https://doi.org/10.2307/3857850>
- Van Buren, H. J., & Greenwood, M. (2011). Bringing Stakeholder Theory to Industrial Relations. *Employee Relations, 33*(1), 5-21. <https://doi.org/10.1108/01425451111091627>
- Veit, C. T., & Ware, J. E. (1983). The Structure of Psychological Distress and Well-Being in General Populations. *Journal of Consulting and Clinical Psychology, 51*(5), 730-742.
<https://doi.org/10.1037/0022-006X.51.5.730>

- Vidal, M. (2013). Low-Autonomy Work and Bad Jobs in Postfordist Capitalism. *Human Relations*, 66(4), 587-612. <https://doi.org/10.1177/0018726712471406>
- Villavicencio-Ayub, E., Jurado-Cárdenas, S., & Valencia-Cruz, A. (2014). Work Engagement and Occupational Burnout: Its Relation to Organizational Socialization and Psychological Resilience. *Journal of Behavior, Health & Social Issues*, 6(2), 45-55. <https://doi.org/10.5460/jbhsi.v6.2.47026>
- Vistnes, J., & Monheit, A. C. (2011). The health insurance status of low-wage workers: the role of workplace composition and marital status. *Medical care research and review : MCRR*, 68(5), 607–623. <https://doi.org/10.1177/1077558711401918>
- Voydanoff, P. (1988). Work Role Characteristics, Family Structure Demands, and Work/Family Conflict. *Journal of Marriage and Family*, 50(3), 749-761. <https://doi.org/10.2307/352644>
- Waldron, T. (2007). Beyond the Minimum Wage: Working Families Are Challenged by Many Policies of Low-Wage Employment. *SSA Magazine*. <https://ssa.uchicago.edu/beyond-minimum-wage>
- Walther, A. (2019). *Poverty Fact Sheet: Unstable Jobs, Unstable Lives: Low-Wage Work in the United States*. (Poverty Fact Sheet, Issue. <https://www.irp.wisc.edu/wp/wp-content/uploads/2018/12/Fact-Sheet-16-2018-UnstableJobs-UnstableLives.pdf>
- Ward, B. W., & Martinez, M. E. (2015). Health Insurance Status and Psychological Distress among Us Adults Aged 18-64 Years: Health Insurance and Psychological Distress. *Stress and Health*, 31(4), 324-335. <https://doi.org/10.1002/smi.2559>
- Warren, E. J. (2018). Housing affordability and material hardship: Does affordability measurement matter? *Journal of Poverty*, 22(3), 228-247.

- <https://doi.org/10.1080/10875549.2017.1419527>
- Wolff, J. M., Rospenda, K. M., & Richman, J. A. (2014). Age Differences in the Longitudinal Relationship between Work-Family Conflict and Alcohol Use. *Journal of Addiction, 2014*, 1-10. <https://doi.org/10.1155/2014/354767>
- Woo, J., Shook, J., Goodkind, S., Ballentine, K., Engel, R., Kim, S., & Petracchi, H. (2022a). Do Wage Increases Help? Wage Increases and Material Hardships among Low-Wage Hospital Workers. *Journal of Human Behavior in the Social Environment*, 1-14. <https://doi.org/10.1080/10911359.2022.2036282>
- Woo, J., Ballentine, K., Shook, J., Engel, R., & Goodkind, S. (2022b). Material Hardships, Perceived Stress, and Health among Low-Wage Hospital Workers. *Health & social work, 47*(1), 19–27. <https://doi.org/10.1093/hsw/hlab038>
- World Bank. (n.d.). *GINI index (World Bank estimate)*. <https://data.worldbank.org/indicator/SI.POV.GINI>
- Yabroff, K. R., Zhao, J., Han, X., & Zheng, Z. (2019). Prevalence and Correlates of Medical Financial Hardship in the USA. *Journal of General Internal Medicine, 34*(8), 1494-1502. <https://doi.org/10.1007/s11606-019-05002-w>
- Yaldiz, L. M., Truxillo, D. M., Bodner, T., & Hammer, L. B. (2018). Do resources matter for employee stress? It depends on how old you are. *Journal of vocational behavior, 107*, 182-194. doi:<https://doi.org/10.1016/j.jvb.2018.04.005>
- Yoon, I. (2014). Consumer credits as a quasi welfare system for failed neoliberals' trickle-down policies between the 1980s and 2000s. In S. Haymes, R. Miller, & M. Vidal de Haymes (Eds.), *Handbook of Poverty in the United States*. Routledge.
- Zhou, S., Da, S., Guo, H., & Zhang, X. (2018). Work–Family Conflict and Mental Health among

Female Employees: A Sequential Mediation Model Via Negative Affect and Perceived Stress [Original Research]. *Frontiers in Psychology*, 9(544).

<https://doi.org/10.3389/fpsyg.2018.00544>