The Washington State Psychiatric Hospital Work, Stress, and Health Project: Final Report to Washington DSHS Mental Health Division and Western State Hospital

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The Washington State Psychiatric Hospital Work, Stress, and Health Project: Contributors

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The Washington State Psychiatric Hospital Work, Stress, and Health Project: Acknowledgements

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The Washington State Psychiatric Hospital Work, Stress, and Health Project: Final Report to Washington DSHS Mental Health Division and Western State Hospital

Executive Summary

Overview

The growing demand for healthy workplaces creates a climate in which patient safety and direct care provider well-being have become critical strategic priorities for hospitals. Research can help identify and prioritize key influences on workplace violence and disruptive behavior and increase understanding of how direct care provider working conditions influence health, family, and work outcomes. Therefore, the Washington State Psychiatric Hospital Work, Stress, and Health Project addressed two important research needs.

- ***Research Need #1:*** *Work stress and health research needs to describe both the critical context resources and work experiences that influence workplace violence such as patient assaults, disruptive behavior and witnessing disruptive behavior.*
- ***Research Need #2:*** *Workplace violence research needs an empirically-supported model linking work context resources to workplace violence and to health, family, and work outcomes.*

Design and Methods

The Washington Work, Stress, and Health Project involved collaboration between the Washington State Psychiatric Hospitals and the Washington Department of Labor & Industries SHARP research program. The research consisted of a survey study involving qualitative and quantitative assessments and additional focus groups and individual interviews. In early 2012, 485 direct care providers and supervisors completed a survey assessing workplace violence assaults, disruptive behavior, and workplace context characteristics expected to influence workplace violence and health, family and work outcomes. Of these respondents, 301 were from Western State Hospital. Survey respondents also provided qualitative descriptions of significant assault experiences, and suggested interventions to improve the quality of their work life.

These findings are now being used by our Intervention Development Team, consisting of key Western State Hospital management, union and direct care provider stakeholders to develop and pilot a workplace violence prevention intervention with supervisory nurses and care providers. An ongoing process evaluation documents in three phases the details of the current state of the organization's culture and practices (Phase I); intervention development (Phase II); and intervention pilot implementation (Phase III).

Findings

Aim #1. Describing workplace violence critical stressors and workplace violence experience

We investigated the nature of work context resources including scheduling, staffing, organizational support, and workplace violence experience as critical stressors using qualitative data from the care provider work, stress and health survey, as well as, focus groups, individual interview data, and from minutes of discussions with our intervention development team. In content analysis of phase 1, we found four primary themes: staffing demands, social support, communication, and training.

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Analyses revealed that inadequate staffing was a critical stressor complexly related to unfilled vacancies, high turnover, high unscheduled absences and low schedule flexibility. Increased use of overtime due to inadequate staffing also was reported as contributing to care provider stress and burnout and compromising patient and staff safety.

Our qualitative data findings on staffing demands are in alignment with our quantitative survey results -- low staffing adequacy is significantly associated with higher levels of patient assaults. This corroboration of findings from two data sources and data types strengthens the impact of the overall study conclusions and Recommendation #1 concerning increasing staffing adequacy.

Aim #2. Testing a new model of workplace resources, workplace violence and health, family, and work relationships.

We conducted extensive analyses to address Aim 2 and investigate whether the organizational contextual resources influence workplace violence through the relationships hypothesized in the Washington Work, Stress, and Health theoretical model; a) whether the work context is related to workplace violence; b) whether the work context is related to care providers' health, family, and work outcomes; and c) whether workplace violence influences care providers' health, family, and work outcomes. In key findings, we established support for many of our hypotheses. For example, direct care providers' who experienced high staffing adequacy reported better general health, less discomfort-pain, less burnout, and **fewer patient assaults.** High staffing adequacy was also related to **high patient quality of care**. Care providers with highly family supportive supervisors experienced less burnout, reported providing higher quality of patient care, and reported experiencing **less disruptive behavior** and **witnessing** such behavior. When coworker support was high, safety participation was high, and highly supportive coworkers were associated with several better health, family, and work outcomes as well **as fewer patient assaults** and **less disruptive behavior.**

Finally, care providers who experienced high patient assaults had more injuries and high levels of burnout, becoming emotionally hardened. Employees who experienced high disruptive behavior and witnessing disruptive behavior had significantly worse health on every health outcome measured, and had high work-family conflict, job dissatisfaction, turnover intentions, burnout, and low life satisfaction and patient quality of care.

<u>Recommendation #1:</u>

Increase Staffing Adequacy

Low staffing adequacy was related to many outcomes, most important, increased patient assaults, but also worse health and work outcomes. Moreover, both measures of patient quality of care were linked to staffing adequacy making it a critical organizational resource to target. The qualitative findings support addressing staffing issues as well and begin to clarify the complex dynamics of high disruptive behavior, low morale, high turnover, and unscheduled absences, difficulty filling vacancies – all factors that reduce staffing adequacy and stability and increase risk of violence for patients and care providers. Specifically:

- Research and establish an effective float pool of permanent care provider staff
- Use the float pool to increase staffing adequacy, increase schedule flexibility, and address unscheduled absences

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- Conduct further research to untangle the complexity of factors that contribute to low staffing adequacy

Recommendation #2:

Address Disruptive Behavior

High levels of disruptive behavior and witnessing disruptive behavior are powerful work stressors at WSH and are taking a toll on the health, well-being, and morale of care providers and the organization management and union leaders. Patient and care provider safety are at risk as well as patient quality of care. Disruptive behavior is directly related to many health, family, and work outcomes and occurs among care providers, management, and union representatives according to our qualitative data. Eliminating disruptive behavior should be a major goal for Western State Hospital. Specifically:

- The Patient Safety Culture Committee should focus on developing a program to resolve disruptive behavior as a primary objective. Enlist participation from all hospital stake holders at all organizational levels and disciplines
- Research interventions for disruptive behavior and adopt and implement an intervention model hospital -wide, including strong and clearly delineated policies, procedures, and practices
- Empower and educate managers to advocate for, and role model, respectful behavior to implement policies, and to act on reports of disruptive behavior according to a planned intervention model
- Educate care providers on their role as coworkers and the health and well-being benefits of respect and support vs. the negative effects of disruptive behavior on patient quality of care and patient and staff safety

Recommendation #3:

Seek to achieve cultures of Work-Life Engagement, Flexibility, and Integration

Cultures in which managers/supervisors are knowledgeable about flexible and supportive practices and promote and communicate them effectively also promote employee engagement and well-being. Family supportive supervisors have employees who report higher levels of job satisfaction, better physical health, lower turnover intentions and higher performance. WSH employees that have family supportive supervisors reported experiencing lower patient assaults, disruptive behavior, burnout-exhaustion, and higher patient quality of care. This particular constellation of research evidence provides strong support for intervening in the area of work-life integration. Managers and supervisors have a critical role as the voice of the organization. They translate the culture to employees, role model effective behaviors, and enact organizational policies. They are the communication link between DSHS management and upper level management and care providers working with patients on the wards. Specifically:

- Empower and educate managers to use existing schedule flexibility policies and to use the new float pool as a work-life balance tool when needed – create new schedule flexibility policies as needed

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- Identify best practices and leading supervisors who are adept at managing work-life effectively as a way to focus on local successes
- Include employee satisfaction with leader support of work-life balance on performance appraisals or annual surveys
- Continue to work with SHARP researchers to develop the proposed intervention that addresses supervisor support for workplace violence prevention, schedule flexibility, supervisor and coworker support, and work-family integration

We conclude by mentioning two recurrent themes from this research. First, our findings highlight the importance of positive organizational resources for care providers working with the work demands and prominent stressors of patient assaults and disruptive behavior. When high, these resources ameliorate the negative effects of workplace violence stress on employee health, family, and work outcomes and replenish care providers' energy to work with patients therapeutically and provide high patient quality of care in a safe environment – safe for patients and care providers. Second, the data reflect a clear relationship between workplace violence, particularly disruptive behavior, and many poor care provider health, family, and work outcomes, some with strong effects. Thus, we focused our recommendations on three key resources to assist care providers' dealing with workplace violence stressors: increase staffing adequacy and schedule flexibility, address disruptive behavior, and achieve a culture of work-life engagement.

We plan to pursue the next phase of the Washington Work, Stress, and Health Project. Future work will be ongoing for the current WWSH project at Western State Hospital. We look forward to continuing our work with a very dedicated and engaged Intervention Development Team and are excited about this project as we go forward to develop the proposed intervention.

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The Washington State Psychiatric Hospital Work, Stress, and Health Project

Overview

Currently, not enough is known about the risk factors, including various work context and psychosocial factors, which contribute to workplace violence prevention in psychiatric health care settings. An important focus of the study was to examine the organization of work as it pertains to Type II (violence directed at employees by customers, clients, patients, or any others for whom an organization provides services) workplace violence in the state psychiatric hospital as defined by the National Institute of Occupational Safety and Health (NIOSH, 2002). Organization of work refers to the work process and organizational practices that affect job design. External, organizational, and workplace factors contribute to the organization of work. Organizational factors of interest are staffing systems and scheduling practices, such as staffing adequacy, long work hours and lack of control over work schedule. Finally, workplace factors to consider are the violence prevention climate, organizational, supervisor, and coworker support, family supportive supervisors, perceptions of patient quality of care, and physical and psychological demands experienced by state hospital psychiatric care providers. We are also interested in how these workplace resources and demands impact the total worker, and include family outcomes in our research to account for the work-life experience of psychiatric direct care providers who not only directly experience workplace violence such as patient assaults and coworker disruptive behavior, but who also observe these events occurring in their workplace.

To our knowledge, this research is the first to explore the role of work context factors on workplace violence and on the health, family, and work outcomes of staff at a psychiatric hospital and the first to use this background to inform an intervention design. This intervention - training design process is currently underway. The training is targeted at increasing schedule control and supervisory support for care providers for violence prevention and to manage the demands of work and home. The intervention goal is to build organizational resources for care providers that will contribute to violence prevention related to patient assaults and disruptive behavior among coworkers.

An Occupational Health Psychology Perspective on Stress and Workplace Violence Prevention

The National Institute of Occupational Safety and Health (NIOSH) proposed: “Occupational health psychology concerns the application of psychology to improving the quality of work-life, and to protecting and promoting the safety, health and well-being of workers” (Sauter & Hurrell, 1990, p.120). Occupational Health Psychology (OHP) emerged in response to three developments: “(a) the growth of and recognition of stress-related disorders as a costly occupational health problem; (b) the growing acceptance that psychosocial factors play a role in the etiology of emergent…problems such as upper extremity musculoskeletal disorders; and (c) recent and dramatic changes in the organization of work that foster both job stress and health and safety problems at work” (p. 117). They propose that through better understanding and control of organizational level risk factors, occupational health psychology may function towards *primary prevention* of occupational illness and injury. In this way, by analyzing the managerial and supervisory practices, processes, and policies of work organization and their influence on work, the knowledge gained can be used to advocate for and develop interventions for healthy work environments and safe workplaces.

Quick (1999) suggests that OHP has the objectives of developing, maintaining, and promoting healthy workplaces in the context of social and organizational psychology. OHP researchers bring together an understanding of the psychological processes that guide individual behavior *with* the capability of identifying the occupational and organizational factors that influence how people respond to situations at work. It has been put forth that the goal and essential objective of OHP is to "advance knowledge and expertise regarding organizational factors that threaten worker safety and health" by better understanding "the influence of workplace *environmental* stressors on worker safety and health" (p.120). This study's emphasis on organizational context and workplace psychosocial environment in relation to workplace violence is an important and unique step towards furthering OHP research and potential solutions towards improving work-life quality.

In keeping with the OHP perspective, we investigated the specific organizational resource factors of: violence prevention climate, organizational support, family-supportive supervisor behaviors, supervisor and coworker support, violence-related policies, job security, staffing adequacy and control over work hours.

An Overview of Workplace Violence in Healthcare Settings

The health care sector continues to lead all other industry sectors in incidence of nonfatal workplace assaults with 48% of all nonfatal injuries from violent acts against workers occurring in this sector (BLS, 2001). According to the National Crime Victimization Survey, mental health workers experienced the highest rate of simple assaults in the health care sector, with 43.2 assaults per 1,000 workers (Duhart, 2001). Much of the research literature focuses on the nursing profession and psychiatric nurses report among the highest violent victimization rates among all types of nursing care providers (Islam, Edla, Mujuru, Doyle, & Ducatman, 2003). A multiregional study of 557 nursing staff members from various acute psychiatric settings showed that 76% of the respondents reported that they were assaulted at least once (Poster & Ryan, 1994). In a large population-based survey, the Minnesota Nurses Study, researchers examined rates of assault among nurses and found that only 15% of incidents of physical assault were ever reported. Non-physical incidents, such as threats, were even less likely to be reported in spite of their potential to escalate to a physical assault or their impact on the nurses' psychological well-being. Over 40% did not report because they believed the risk of physical assault was "part of the job" (Gerberich, et al., 2004). Underreporting has also been found in other psychiatric care workplace violence studies (Bensley, Kaufman, Silverstein, Kalat & Shields, 1997; Myers, Kriebel, Karasek, Punnett, & Wegman, 2005).

Some research links risk of assault to schedule control factors. In a Veterans Hospital Administration study of the hospital psychiatric nursing population, Hodgson and colleagues (2004) found that working as float staff or mandatory overtime schedules increased the risk of experiencing assault. Other researchers have examined protective psychosocial factors. In a study examining risk and protective factors for workplace violence, Findorff and colleagues (2004) found that increased supervisor support decreased the odds of physical and non-physical violence.

The Demanding Nature of Residential Psychiatric Care Work

Psychiatric care providers experience many workplace violence stressors including patient assaults and patient suicide, but also contend with limited budgets and resources, crowded inpatient wards, changing culture in mental health services, high work demands, poorly defined roles, responsibility without authority, inability to

effect systemic change, conflict between responsibility toward the organization vs. toward the patient, conflict between coworkers, and the isolation of working in a closed system. It is well documented that high rates of workplace aggression, including disruptive behavior and patient violence, are associated with a number of negative health and work outcomes (Farrell, 2006; O'Connell, 2000). Specifically, caregivers in the field of mental health and psychiatric care frequently report high psychological and physical demands and high levels of job stress and burnout (Fagin, 1996; Lasalvia, 2009). Workplace violence directed at nurses has been shown to be routine and recurring for health care providers, including verbal threats and abuse, physical assault, disruptive behavior, and intimidation (Chapman, 2010; Di Martino, 2002; Henderson, 2003).

Previous research on psychiatric hospital employees in Washington State has shown significant occupational risks for injury due to assault (Bensley, 1997). More recent research reported that 43% of surveyed staff at a university department of psychiatry were threatened and a quarter were physically assaulted (Privitera, 2005). Evidence suggests that workplace violence significantly influences the recruitment and retention of nurses, turnover intentions, absence due to sickness, and high levels of burnout (Chang, 2005; Estryn-Behar, 2008; Evans, 2006; Jackson, 2002; Sofield, 2003).

Critical Workplace Violence Research Needs

The Washington Work, Stress, and Health Project is responding to the need for studies of the impact of assault on those who care for patients, and recognizes that empirical research must be taken into consideration when developing interventions and when addressing organizational strategies to assure strong commitment to worker as well as patient safety (OSHA, 1998; Kindy, Petersen & Parkhurst, 2005; Nijman, Bowers, Oud, & Jansen, 2005; Poster & Ryan, 1994). Theory from a number of disciplines, (e.g., Bakker & Demerouti, 2007; Barrera, 1986; Karasek & Theorell, 1990) points to the importance of control and support for individual well-being. The concurrence of high control and high support in the context of reasonable demands produces healthy environments that encourage individual development and well-being.

To date there are very few interventions targeted at workplace violence prevention that address building organizational resources such as support and work-life integration. The quantitative and qualitative data findings included in this report will be applied toward developing a much needed intervention for psychiatric care providers and their managers. Our study proposes an innovative participatory intervention approach that addresses the organization of work through work redesign surrounding schedule control and social support in the workplace. This study fulfills a number of recommendations (NIOSH, 1996; Lipscomb, et al., 2006; Rosskam, 2009) through; 1) utilizing an interdisciplinary research approach among academic and practitioner organizations, 2) conducting participatory action research (PAR) with hospital stakeholders, 3) designing violence prevention strategies based on scientific findings, and 4) adding to the available data by identifying and describing workplace violence impacts on state worker health, family and work outcomes**.** Additionally, our approach incorporates PAR in the study design in ways that strengthen the research and facilitate its applicability to real-world practice and policy decisions.

Research Need #1: *Work stress and health research needs to describe both the critical work context resources and work experiences that influence workplace violence such as patient assaults, disruptive behavior and witnessing disruptive behavior.*

We investigated the nature of work context resources such as scheduling, staffing, organizational support, supervisor and co-worker behavior, and workplace violence incidents as critical stressors using qualitative data from the care provider work, stress, and health survey, as well as, focus groups, individual interview data, and minutes of discussions with our intervention development team. Participants described to us their perceptions of the work context present at the hospital, the resources available to them, and their frustrations and sources of work-related stress. The aim of this portion of the research is to offer the perspectives of direct-care staff members and their supervisors, and to more fully understand and describe how the nature of their work affects their health and safety.

Research Need #2: *Workplace violence research needs an empirically-supported model linking work context and critical stressors to health, family, and work outcomes.*

Although many studies have investigated employee workplace violence stress and similar large bodies of research have investigated workplace social support, as well as, employee health, family, and work outcomes of general stress, these bodies of literature are not well-integrated. For example, workplace violence researchers study health-related outcomes such as depressive symptoms without incorporating findings from recent health research. Similarly, health researchers recognize that psychosocial work stressors contribute to poor health outcomes but lack a conceptual model linking health to the work context as studied by work stress researchers. Finally, neither group has paid sufficient attention to developing interventions in the workplace to address the stress-health relationship when workplace violence is a prominent stressor.

The Need for Improved Research Designs

Over the past several years, occupational health psychologists have begun to call for the use of improved research designs within organizations. The suggestions for improvements in research design cover several different areas, including the use of a strong theoretical framework, multiple measures, collecting multi-source data, and adopting a multilevel approach (Bliese & Jex, 2002). Additionally, a call has been made by organizational researchers to measure multiple variables in the stressor-strain relationship, including antecedents and outcomes, as well as various mechanisms or processes that may impact the stressor-strain relationship.

The current study with Western State Hospital (WSH) answers a number of these calls. This exploratory project has support from National Institute of Occupational Safety and Health (NIOSH) and the Centers for Disease Control & Prevention (CDC) NORA sector for Healthcare and Social Assistance and Work Life Initiative to develop a workplace intervention targeted at violence prevention. Due to the grant-funded nature of this project, we were able to develop a strong theoretical framework grounded in the Job-Demands Resources Model (Bakker & Demerouti, 2007) in which our hypotheses were framed. Furthermore, we were able to draw upon expert researchers in the field of work and family research in the process of compiling and finalizing the survey that was ultimately distributed to WSH care providers. The resulting survey was taken by a number of professionals at WSH, including MHTs, RN2s, RN3s, RN4s, and several management and administrative professionals. In addition, focus groups and individual interviews were conducted with care providers, union representatives and managers. Though the majority of this data consists of direct care providers' responses, including the entire range of staff positions allows us to examine potential differences in work demands and resources across levels of the organization.

An important strength of the current study is the examination of multiple different contexts, including work, family, and well-being. In examining employees as whole individuals, we are able to get a better picture of how work-related demands or resources may spillover into the home domain to impact family functioning, and conversely, how family demands and resources may impact work. Additionally, we've taken care to measure a number of well-being outcomes (e.g., physical symptoms, depressive symptoms, sleep disruption, and burnout) in order to illuminate the relationship between workplace violence and employee health, safety, work, and family outcomes. Ultimately, the current study with WSH addresses a gap in the current literature surrounding violence prevention programs by using a broad and systemic approach towards addressing both the organization of work and work-life integration (Wassell, 2009).

Ultimately, the goal of this study is to advance innovative approaches to developing collaborative, organizational, and systems-oriented interventions aimed at preventing workplace violence and improving direct care provider safety and health at work. The findings from the first year of research data, including qualitative and quantitative analyses will inform the second year's work of intervention development. The trainings will be developed by a diverse, collaborative team of researchers and hospital stakeholders. Interventions in the form of trainings for supervisors and direct care providers will target employee schedule control and supervisor and coworker support for patient and staff safety and work-family integration.

Washington Work, Stress and Health Research Overview

The Washington Work, Stress and Health Model

We sought to develop a model that would integrate the research literatures on workplace violence stress, organizational contexts, and health, family and work outcomes. We aimed for a model that was theoretically sound, empirically supported, and pragmatically useful in the project of applying our study findings toward developing an intervention that addresses work context resources and work-life integration.

Our model focuses on the organization of work such as the effects of the psychosocial workplace context, the violence prevention climate of work, supervisory and coworker support, staffing, schedule control, and job security. We are interested in a model that conceptually ties the organization of work to worker and family health, in the hopes of developing workplace intervention strategies that will reduce workplace violence and improve employee health, family and work outcomes.

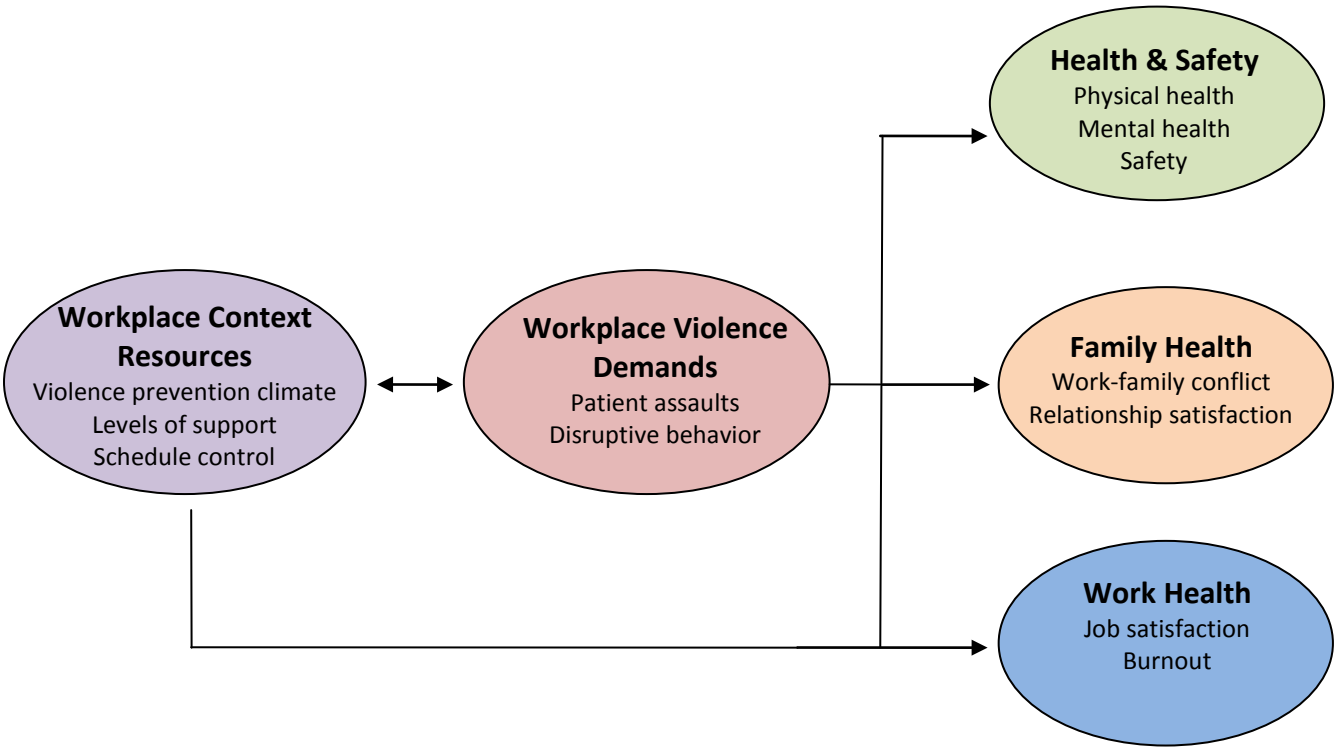
Theoretically, our model is based on the Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2007; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). The JD-R model of stress proposes that employees are different in the way they utilize organizational, social, psychological, and physical resources to cope with work demands such as workplace violence. In this research, we focus on a set of contextual resources potentially related to workplace violence demands.

According to the JD-R model organizational context factors of violence prevention climate, workplace support, staffing adequacy, schedule control, and schedule satisfaction are considered to be organizational resources that employees may draw on to replenish and reinvigorate care providers' violence prevention efforts and recovery from work stress. As such, we expect a negative relationship between violence prevention climate, support, and schedule control measures with employees' workplace violence experiences. For example, lower levels of support will be related to higher levels of workplace violence. We would also expect relationships between workplace violence and employees' health and safety, family and work outcomes such that higher

levels of workplace assaults and disruptive behavior will be related to higher levels of *dysfunction* in care provider health, family, and work outcomes.

The theoretical model is presented below in Figure 1 and is followed by the measurement model in Figure 2 with specific aims (see Appendix C for detailed specific aims and hypotheses). Tests of these relationships are described in more detail in the results section on page 16.

Figure 1. ***The Washington Work, Stress and Health Theoretical Model***



Research Design

Our research consisted of a collaborative effort between researchers from the Washington Department of Labor & Industries SHARP Research Program and Western State Hospital management and labor groups. Western State Hospital consists of four acute treatment centers at the hospital campus in Lakewood, Washington. The Psychiatric Treatment and Recovery Center (PTRC) Central and South area provide psychiatric care to civilly and voluntarily committed adults and the PTRC East areas provides treatment to older and geriatric adults. The PTRC has a capacity of 552 patients. The Center for Forensic Services (CFS) provides court-ordered evaluations and treatment for adults found to be guilty except for insanity, or have legal charges and /or convictions and has a capacity of 254 patients. CFS also provides treatment to restore competency to proceed in a trial to persons who were determined not able to aid and assist their attorney in their own defense. The Child Study and Treatment Center, provides treatment for children under the age of 18 years. Approximately 1,947 staff work at the Hospital. There are also two treatment centers at WSH that are key to providing patient therapy (Yragui, Foley, Silverstein, Smith & Spann, 2009).

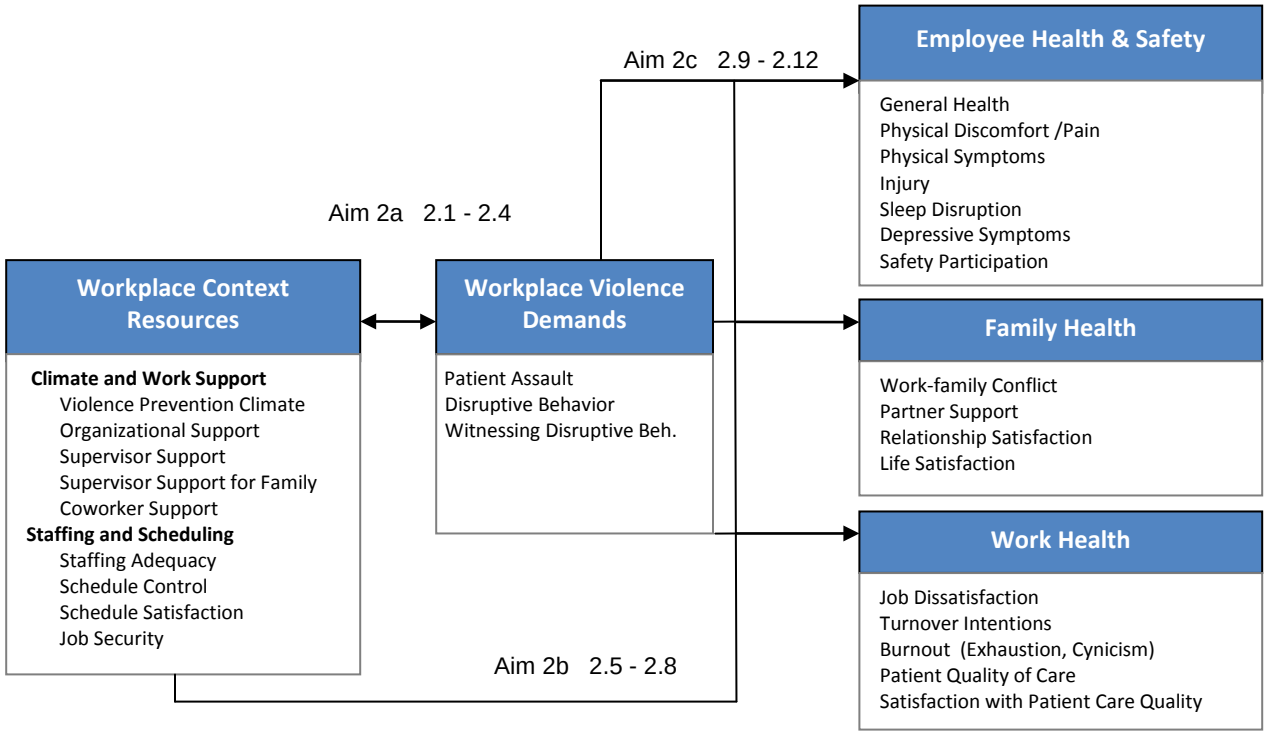
Service Employees International Union 1199 NW (SEIU) is an important stakeholder in issues affecting nurses in the state with 22,000 healthcare workers across Washington State focused on quality patient care in the state's healthcare facilities and agencies. The Union of Physicians of Washington and the Washington Federation of State Employees Local 793 (WFSE) for direct care providers other than nurses are also valuable stakeholders and advocates for patient safety and worker safety at WSH.

SHARP research at the Washington Department of Labor & Industries is internationally recognized as a leader in the fields of Occupational Safety and Health and Occupational Health Psychology, as well as in related fields devoted to understanding how individual and work environment factors influence occupational safety, retention and turnover, as well as, worker health and well-being. SHARP was created in 1990 by the Washington State Legislature with the mission of conducting research to prevent illness and injury in Washington workplaces. Portland State University (PSU) is internationally recognized for its Occupational Health Psychology Program in applied research, funded through a Training Program Grant from the National Institute for Occupational Safety and Health (NIOSH). Finally, this research was funded by the Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health (CDC/NIOSH), and is conducted with the support of the Washington State Department of Labor & Industries.

Design Overview

Our research used a cross-sectional study design that combines standard and validated organizational climate and work context questionnaire measures with validated measures of workplace violence, as well as health, family and work outcomes. Figure 2 presents an overview of the research design and measures included in the WWSH survey.

Figure 2. ***The Washington Work, Stress, & Health Measurement Model***



In January and February of 2012, we conducted the WWSH project survey assessing care providers' personal and organizational resources as well as workplace violence perceptions and health, family, and work (i.e., physical symptoms, sleep disruption, work-family conflict, job dissatisfaction, turnover intentions, and burnout) outcomes. In the following section, we provide a review of the research literature relevant to each measure included in our survey.

WWSH Model Literature Review

Workplace Context

Violence Prevention Climate

Written documents such as workplace violence and communication policies are *formal* expressions of an organization's *violence prevention climate*. Washington State law, RCW 72.23 directs state hospitals to develop and review annually a workplace violence prevention plan. This plan should include workplace violence policies and procedures for personnel. In addition, The Joint Commission (TJC) requires nursing leaders to have defined policies and procedures, which detail common nursing practices, available on every hospital unit. In addition to developing sound policies on violence and educating employees about their content, the hospital leadership team and psychology, social work, rehabilitation therapies, and nurse managers have a powerful role in communicating policy to employees and ensuring that policies, procedures, and practices are reasonably followed. Supervisors that communicate frequently to staff about the value of violence prevention and patient safety may also quickly address issues related to workplace violence and incivility with patients, hospital staff, and members of the public that visit the hospital. This is how organizational leaders create a climate of violence prevention that promotes patient and staff safety.

V*iolence prevention climate* has emerged as the most consistent antecedent of workplace violence in the occupational health psychology research literature. Researchers conceptualized violence prevention climate as employees' perceptions of organizational policies, practices, and procedures regarding the control and elimination of workplace physical violence and verbal aggression (Spector, Coulter, Stockwell, & Matz, 2007). Specifically, prevention climate refers to performing core and supportive activities that are designed to limit violent or aggressive incidents in the workplace (Kessler, Spector, Chang & Parr, 2008). According to the resource-based Job Demands-Resources model (e.g., Bakker & Demerouti, 2007), organizations direct efforts to assist employees so that they perform effectively on the job. A positive prevention climate may serve as one of a range of resources from which care providers can draw to prevent violence and increase patient and staff safety. Specifically, a positive prevention climate indicates that there are clear organizational policies, practices and responses to support care provider efforts for preventing violent or aggressive incidents. In addition, strong management support exists to assist care providers with their efforts to prevent assaults, disruptive behavior among coworkers, or to cope with the negative consequences of being victimized.

Levels of Support in Organizations

Perceived Organizational Support

Perceived organizational support (POS) reflects employees' sense that their organization values them, recognizes their contributions, and is concerned with their welfare (cf. Eisenberger, Huntington, Hutchinson, & Sowa, 1986). According to POS theory, employees who experience stronger support from senior management

will respond with more favorable job attitudes and behavior and should have more favorable work outcomes such as higher job satisfaction and higher perceptions of quality patient care. In a meta-analysis of over 70 studies on POS, this proposal was strongly supported, showing that employees with higher POS report less work stress, more favorable job attitudes, stronger organizational commitment, increased job performance, and lower turnover (Rhoades & Eisenberger, 2002).

Perceptions of organizational support are linked to quality patient care. Quality of patient care depends on the seamless operation of several different systems and units. Direct care providers feel appreciated and supported by their organization when these systems run smoothly and when management maintains successful programs and introduces new programs that help these systems improve their function. When care providers believe management is committed to high quality patient care and that management is responsive to and supportive of their concerns, care providers are more likely to enact positive behaviors, such as therapeutic response to patients and compliance with new safety procedures (Zohar, 2002). When senior management solves problems as they arise and communicate solutions to nursing staff (instrumental support) with strong and significant actions, they contribute to a supportive climate (Choo, 2007; Tucker & Singer, 2009). In this way, quality of patient care improves as well as care provider violence prevention efforts, resulting in both increased patient and staff safety.

Supervisor Support

A large body of organizational research has established that employees' work experiences are strongly affected by perceptions of the quality of their relationship with their supervisors. We use the term perceived supervisor support to refer to employees' understanding of the extent to which their supervisors provide emotional support (i.e., willingness to listen to problems). For direct care providers, important groups of supervisors include their nursing supervisors, direct supervisors in their discipline (i.e., psychology, social work, rehabilitation therapy), and middle and senior managers. Prior literature on social support strongly suggests that the more support employees receive from their supervisors, the more favorable their occupational health outcomes (e.g., Rhoades & Eisenberger, 2002) and often shows that perceived supervisor support can buffer employees from the adverse effects of job stressors (DeLange, Taris, Kompier, Houtman, & Bongers, 2003).

Coworker Support

Support from coworkers can occur in multiple forms, including emotional (e.g., listening to a coworker's difficulties in balancing work and family) and instrumental (e.g., offering to help a coworker with a difficult client). In general, social support has been linked with positive employee outcomes, including health, work attitudes, and work behavior (Cohen & Wills, 1985). The presence of support has been shown to interact with workplace stressors to lessen the negative impacts of stress on well-being outcomes. However, several researchers have suggested that the most effective forms of social support are those that are congruent with the form of stressor. For example, work-related support may be more effective than nonwork-related support in weakening the effects of workplace stressors on employee well-being (Cohen & Wills, 1985; Ganster, 1988).

More specifically, coworker support has been linked to a number of employee and organizational outcomes, including lower levels of role conflict, role overload, role ambiguity, effort reduction, absenteeism, intention to quit, and turnover and higher levels of job satisfaction, job involvement, and organizational commitment. In

terms of performance, coworker support has also been linked to higher levels of organizational citizenship behaviors (targeted at both the individual and organization) as well as improved levels of general task performance (Chiaburu & Harrison, 2008). Additionally, a study of healthcare setting employees found that instrumental organizational support (including coworker support) weakened the impact of physical violence, aggression, and vicariously experiencing violence in the workplace on employee outcomes including emotional well-being, somatic health, and job-related affect (Schat & Kelloway, 2003).

Family supportive supervisor behaviors

One of the focuses of the current study is increasing support resources for employees with high demands (e.g., workplace violence) to draw on. Specifically, supervisors can show support for employees through actively engaging in family supportive supervisor behaviors (FSSB). These are behaviors that assist employees in managing their work and family demands. These supportive behaviors consist of four sub-dimensions, including emotional support; instrumental support; role-modeling behaviors; and creative work-family management (Hammer, Kossek, Anger, Bodner, & Zimmerman, 2011). *Emotional support* includes supervisors providing support through listening and showing understanding for employees' work-family demands (e.g., through increased contact and genuine concern). *Instrumental support* includes day-to-day management transactions that are responsive to employees' work and family needs (e.g., communication around scheduling needs). *Role-modeling behaviors* refer to exhibiting strategies and behaviors to effectively manage the supervisor's own work and family demands. Lastly, *creative work-family management* relates to supervisor-initiated actions that reorganize work to improve the effectiveness of employees both at work and at home.

Several studies have demonstrated beneficial outcomes associated with family supportive supervisor behavior, including lower levels of work-family conflict and turnover intentions, and higher levels of work-family positive spillover and job satisfaction (Hammer, Kossek, Yragui, Bodner, & Hanson, 2009). When individuals are provided with a supportive work environment in which supervisors provide the flexibility and understanding necessary to manage both work and family demands, beneficial outcomes for both employees and their families—as well as the organization itself—are seen. Supervisor support has been established as a factor in employee well-being (Repetti, 1987; Shinn, Wong, Simko, & Ortiz-Torres, 1989; Thomas & Ganster, 1995). Supervisors are an important resource that employees go to for assistance with work and personal problems (Hopkins, 1997). In addition, supervisors implement workplace policies and procedures or "family friendly policies" to help employees manage work and family concerns. These family friendly supports may be provided as formal or informal support (Allen, 2001; Thomas & Ganster, 1995; Greenberger, Goldberg, Hamill, O'Neill, & Payne, 1989). Examples of formal supports include violence prevention policies, Employee Assistance Programs (EAPs), employee benefits, and flexible schedule arrangements. Informal workplace supports include listening, expressing concern for the employee's recovery from an assault injury, and finding a way for an employee to adjust their work schedule to handle an urgent family situation.

Hopkins (1997) found that supervisor intervention with workers was more likely to be informal (talking with workers, listening, and being supportive) than formal. Researchers have argued that supervisors need to be taught to be more responsive to workers' problems, to help develop peer support within work groups, and to establish linkages to employee assistance programs and other organizational resources (Hammer et al., 2011).

Staffing and Schedule Control

Staffing adequacy

Prior research suggests that low staffing adequacy is related to lower nurse ratings of quality of patient care. Specifically, in a study of hospital nurses across five different countries, researchers found that nurses in poorly staffed hospitals (e.g., high patient-to-staff ratios) with the least organizational support for nursing care were most likely to rate patient quality of care as low (Aiken, Clarke, & Sloane, 2002). In terms of nursing outcomes, researchers examined nurse-staffing adequacy and found higher patient workloads were linked to greater job dissatisfaction, burnout, and turnover, and lower nurse-perceptions of quality of patient care (Aiken, Clark, Sloane, Sochalski & Silber, 2002; Needleman, Buerhaus, Mattke, Stewart, & Zelevinsky, 2002). Finally, in a study examining the effect of California's 1999 law mandating minimum staffing levels in hospitals, findings suggested that increased staffing was related to better patient outcomes (McHugh, Kelly, Sloane, & Aiken, 2011).

Staffing demands are complex and some staffing demands are very difficult to measure in a cross-sectional study (such as changes in staffing within a shift). We measured general perceptions of staffing adequacy and note that because of the complexity of this issue in psychiatric hospitals, further research is needed with more precise measurement. Some aspects of staffing that should be explored in greater depth include patient acuity, patient census, patient and shift characteristics, work load intensity, performance constraints (i.e., lack of other necessary personnel, resources, supplies, program funding) staffing skill mix, and personnel shortages (i.e., position vacancies, unscheduled absences).

Schedule control

Work schedule control and schedule satisfaction

Schedule control, defined here as the ability to determine when one works, where one works, and how many hours one works, is a complementary dimension of job control (see Barnett & Brennan, 1995). Psychological and physical strain are more likely when workers face high psychological work demands and when workers have little control over when or how work is done (Karasek, 1979; Karasek & Theorell, 1990). There is evidence that high job demands and low job control are associated with poorer mental health (Karasek, 1979; Van der Doef & Maes, 1999) and with poorer physical health outcomes (see Belkic et al., 2000; Belkic, Landsbergis, Schnall, & Baker, 2004; Bosma, Peter, Siegrist, & Marmot, 1998; Karasek & Theorell, 1990; Schnall, Belkic, Landsbergis, & Baker, 2000).

Research has shown that flexible work arrangements that increase worker control and choice (such as self-scheduling) reduce stress and healthcare costs; improve productivity and job satisfaction; increase retention; decrease absenteeism; and improve loyalty and commitment. Employees working flexibly are more satisfied with their jobs, more satisfied with their lives, and experience better work-family balance. In a review of ten studies of flexible work conditions, Joyce and colleagues (2010), found that flexible work interventions that increase worker control and choice (such as self-scheduling or gradual/partial retirement) are likely to have a positive effect on employee health outcomes. These include primary health outcomes (including systolic blood pressure and heart rate; tiredness; mental health, sleep duration, sleep quality and alertness; self-rated health status) and secondary health outcomes (co-workers' social support and sense of community). In the ten studies no ill health effects were reported for flexible work schedules.

Job security

Job security refers to an individual's sense of stability and continuance of their current job as they know it. Job insecurity, on the other hand, occurs when the future of one's job is perceived to be unstable or at risk (Probst, 2003). In our survey of WSH employees, job security satisfaction was measured, which assesses an individual's attitudes towards their own level of job security. For example, two employees may be faced with the same level of job security, though based on individual characteristics and the work context each employee may have differing reactions to the state of their job security. Job security satisfaction has been linked to a number of important organizational and employee outcomes, including higher levels of work satisfaction, supervisor satisfaction, and coworker satisfaction, and lower levels of physical health complaints, psychological distress and job stress (Probst, 2003; Ashford, Lee, & Bobko, 1989).

Some researchers have examined job insecurity and have linked perceptions of job insecurity with numerous workplace attitudes, as well as safety outcomes. For example, job insecurity has been linked with lower levels of organizational citizenship behaviors (OCBs; e.g., sharing new ideas), and higher levels of anxiety, anger, and deviant organizational behaviors (e.g, coming in late to work without permission; Reisel, Probst, Chia, Maloles, & Konig, 2010). Importantly, employees facing higher levels of job insecurity have also been shown to demonstrate lower levels of safety motivation (the degree of incentive to adhere to the organization's safety regulations) and compliance (adherence to safety rules and regulations), which in turn is related to higher levels of accidents and injuries (Probst & Brubaker, 2001).

Workplace Violence

Patient assaults

Workplace violence has been recognized as a significant performance and health concern for nurses and nursing staff (e.g., Lanza, 2006). In a multiregional study of 557 nursing staff members from various acute psychiatric settings researchers found that 76% of the respondents reported that they were assaulted at least once (Poster & Ryan, 1994). Moreover, a large population-based survey, the Minnesota Nurses Study, looked at rates of assault among nurses and found that only 15% of incidents of physical assault were ever reported. Non-physical incidents, such as threats, were even less likely to be reported in spite of their potential to escalate to a physical assault or their impact on the nurses' psychological well-being. A Veterans Hospital Administration study of the hospital psychiatric nursing population found that working as float staff or on shift/switch or mandatory overtime schedules increased the risk of experiencing assault (Hodgson, et al., 2004). In a study examining risk and protective factors for workplace violence, Findorff and colleagues (2004) found that increased patient contact increased the odds of physical and nonphysical violence for nursing staff while supervisor support decreased the odds of physical and non-physical violence.

Disruptive behavior - incivility

According to The Joint Commission (TJC), disruptive behavior is verbal or physical personal conduct that negatively affects or potentially may affect patient care - among the behaviors mentioned is conduct that interferes with other members of the healthcare team (2008). Health researchers have noted that the impact of disruptive behavior is costly for organizations – it causes distress among other staff, undermines productivity,

leads to low morale and high staff turnover, and results in ineffective, substandard patient care, poor adherence to practice guidelines, medical errors and adverse outcomes, loss of patients, and malpractice suits (Rosenstein & O'Daniel, 2005; 2008; TJC, 2007).

Health researchers have found that disruptive behaviors occur frequently among medical care providers and have a significant impact on nursing staff satisfaction, morale, and turnover (Rosenstein & O'Daniel, 2005). They found that nurses were nearly as disruptive as physicians. Other professional and care providers in the hospital environment have also been reported as engaging in disruptive behavior on the job (Walrath, Dang & Nyberg, 2005).

Some research links incivility to turnover, another costly outcome for organizations. Cortina et al. (2001) found that greater exposure to incivility was associated with lower job satisfaction, increased psychological distress, and stronger intentions to leave the organization. Similarly, Guidroz, Wang, and Perez (2006) found that interpersonal conflicts with doctors, patients, and supervisors influenced nurses' retention outcomes by increasing their emotional exhaustion. Walrath, Dang, & Nyberg, (2005) found that 48% of nurses reported knowing a nurse that had transferred to another unit or department due to disruptive behavior. Nurses (34%) also reported that they knew of nurses leaving the organization because of disruptive behavior.

There is evidence of a causal relationship between interpersonal conflicts at the work and self-reported health and work outcomes. Co-worker and supervisory conflict has been shown to be a statistically significant risk factor for an elevated need for recovery, prolonged fatigue, and turnover (De Raeve, Jansen, van den Brandt, Vasse, & Kant, 2008). Co-worker conflict was also predictive of poor general health. Such findings highlight the need for interventions aimed at preventing disruptive behavior at work and ameliorating the harmful effects of conflict on employees and the organization.

Finally and most importantly, disruptive behavior has been found to jeopardize patient safety (Rosenstein & O'Daniel, 2008; The Joint Commission, 2008). Specifically, in a study of 4,530 administrators, nurses, doctors and other health professionals at 102 veterans' hospitals, 77% of the respondents reported having witnessed disruptive behavior by physicians and 65% by nurses, behaviors that were linked with medical errors and patient mortality (Rosenstein & O'Daniel, 2008).

Providing high quality patient care requires collaboration – defined as communication and behaviors that physicians, nurses, and other care givers perform when working together including shared decision-making and responsibility for problem solving - - care providers working cooperatively to devise and enact effective plans for patient care (Baggs et al., 1999). Collaboration requires open communication and mutual respect in addition to shared decision making and carrying out treatment plans. Incivility and disruptive behavior interrupt good collaborative communication and reduce patient safety and staff safety as well as quality of patient care (Rosenstein & O'Daniel, 2008).

Health Outcomes

Physical injury, physical discomfort-pain and physical symptoms

Physical injury as the result of workplace violence and assault is a serious and important issue in occupational health research. Research on the negative effects of workplace violence on the physical health of employees is important to reducing the burden and risk of caregivers in the mental health field. Self-report

measures of physical discomfort are widely used and accepted as a proxy risk factor for musculoskeletal disorders in workplace health surveillance research (Sauter, 2005). Previous research has shown evidence of a significant relationship between workplace violence climate and employee injuries and physical health. This relationship is often moderated by other workplace context variables, including job and schedule control, job security, supervisor and co-worker support and work-to-family conflict. There are positive associations between the number of hours worked per week and the frequency of negative health symptoms, especially for those who lack schedule autonomy and social support (Tucker, 2005).

Co-worker conflict, or disruptive behavior, was also predictive of poor general health (De Raeve, 2008). In addition, employee injury and assault risk has also been tied to the informal social hierarchy of the organization and the presence of workplace incivility (Myers, 2007; Langlois, 2007). However, workers who have reported high levels of incivility have better physical outcomes when they perceived better organizational and emotional support (Miner, 2012). In sum, psychiatric care providers are at risk of increased physical injury, discomfort/pain, and physical symptoms not only from patient assaults but also from poor violence prevention climate, working long hours, low schedule control and low social support.

Depressive symptoms

The CES-D was developed as a measure of depressive symptoms in adults residing in the community, and it is a widely used screening instrument in epidemiology and occupational health research (Santor, 1997). Increased psychological demands from work, lack of job control and supportive relationships have been reflected in an increased risk of depressive symptoms and anxiety (Smith, 2012; Wood, 2011). When compared with non-bullied respondents, it was observed that bullied respondents reported more symptoms of depression, anxiety, and changes in mental health (Hansen, 2006). A strong association between workplace bullying and depression has been found to exist after adjustments for sex, age and income in a dose-response manner (Kivimaki, 2003). Low job control, and low job control in combination with high job demands, have both been found to have a negative effect on mental health (Dalgard, 2009), while job demands by themselves were not significantly associated with poor mental health – suggesting a significant interaction between demands and control that affects mental health. Other analysis suggests that targets of incivility endured psychological distress, dissatisfaction with and disengagement from their institution, and performance decline (Caza, 2007). Including a measure of depressive symptoms in our study is important to measuring the psychological impacts of workplace violence, and what may be a leading indicator of further work and health impacts, including burnout, emotional exhaustion, physical disability, and sickness absence.

Sleep disruption

Sleep disruption complaints are common and may be an important symptom of other physical and mental disorders, especially in relation to psychiatric disorders such as depression and anxiety (Buysse, 1989). Bullying and psychological strain has been found to negatively affect sleep quality, which is predictive of stress and fatigue outcomes among nurses (Winwood, 2006; Niedhammer, 2009). Appropriate coping strategies and supportive behaviors to mediate the effects of psychological stressors is an important requirement for nurses in order to avoid adverse health effects and maintain long-term, satisfying, and therapeutic careers in nursing. Shift and night work have been found to significantly negatively affect sleep quality, as well as job strain and job stress (Costa, 2006; Burgard, 2008). Low sleep quantities and sleep disruption have been associated with an increased risk of injury in a general sample (Choi, 2006). Participation in a work-time flexibility program at work

was associated with positive changes in health-related behaviors, including better sleep quality, which suggests a positive relationship between work-time control, or job control, and health outcomes (Moen, 2011).

Safety participation

Safety participation encompasses both the behaviors that support the overall safety of the organization as well as safety compliance, which are the behaviors directly related to safe work practices (Griffin & Neal, 2000). Safety compliance and safety participation have been distinguished as separate components of safety related performance (Griffin & Neal, 2000). Safety participation is assessed by asking about safety behavior that is not directly related to compliance (i.e. "I volunteer for safety related tasks"). Research has shown a negative relationship between safety compliance motivation and safety participation, which is supported by theory proposing that goal-oriented task motivation can reduce participation in broader, organizational behaviors (Wright, 1993), though Griffin & Neal (2000) also showed that safety participation was linked to safety knowledge.

Family Outcomes

Work-family conflict

Work-family conflict occurs when the demands or pressures of one life role, such as work, conflicts with the demands or pressures from another life role, such as family (Greenhaus & Beutell, 1985). This conflict can come in several forms, including time or strain. For example, being required to unexpectedly work several hours of overtime may cause difficulties with scheduling or attending to family obligations, such as doctor's appointments or childcare. The strain of witnessing disruptive behaviors in the workplace (e.g., patient assaults, workplace bullying) may follow an employee home and interfere with their ability to be attentive to and fully involved in interactions with family members and friends.

While work can conflict with family demands, it is important to note that family demands can also interfere with work. This process is referred to as family-to-work conflict. For example, the responsibility of providing consistent care for an elderly relative or dealing with financial strain may lead to difficulties concentrating at work, or lead to negative emotions such as frustration that may be unintentionally directed at coworkers or patients in the work environment.

Among nurses, work overload and irregular work schedules are associated with higher levels of work-to-family conflict, which was in turn associated with lower job and life satisfaction (Yildrim & Aycan, 2008). Support from supervisors—particularly support specific to managing work and family demands—has been linked to lower levels of employee work-family conflict. Other related research has found that work-related negative mood is related to both negative mood at home and higher levels of work-family conflict, consistent with the concept of spillover (Ilies, Schwind, Wagner, Johnson, DeRue, & Ilgen, 2007). Higher levels of work-family conflict have been associated with a number of negative outcomes for employees, including elevated levels of alcohol consumption (Frone, Russell, & Cooper, 1997). Additionally, higher levels of family interference with work have been associated with increased levels of depression and poor physical health (Frone et al., 1997).

Partner support

As the current study seeks to look at the individual as a whole person, it is important to acknowledge the existence of multiple life domains (e.g., work and nonwork). A goal of the study was to examine the ways in

which work demands can impact employees' nonwork lives, as well as the presence of possible resources in the home domain. The presence of a supportive partner is one of several potential resources in the family domain that may help employees effectively manage both work and family demands. As an example, partners may be able to provide emotional support after a particularly stressful day at work, or instrumental support with household tasks, such as cleaning, making repairs around the house, or paying the bills. Emotional support from partners may be particularly helpful for employees dealing with a patient assault or disruptive behavior in the workplace. Indeed, previous work and family research has found a consistent relationship between partner support and lowered levels of work-family conflict (Byron, 2005). The presence of a supportive partner (as opposed to a partner who is not supportive) has also been shown to strengthen the positive effects of family supportive supervision on work-family balance (Greenhaus, Ziegert, & Allen, 2011). These two sources of support appear to have a synergistic effect on the ability to manage work and family in the context of handling workplace violence demands.

Relationship satisfaction

While it is important to examine potential resources in the nonwork area of life, it is also critical to examine ways in which the presence of work demands and support in the workplace can impact employees' well-being outside of work. One area that may be impacted by work demands (i.e., overtime, low schedule control) and the presence of support for work and family is satisfaction with one's relationship. Relationship satisfaction is an assessment of one's relationship with a romantic partner, including satisfaction with the relationship itself, with one's partner, and with the level of communication within the relationship (Schumm et al., 1986). The increased strain associated with higher levels of workplace violence may, in effect, spillover to an employee's home life, in the form of negative mood and negative interactions with a spouse or partner. These negative interactions in the home domain may be associated with lower levels of relationship satisfaction over time (Levenson & Gottman, 1989).

Life satisfaction

Life satisfaction is an indicator of an individual's perceptions of their quality of life. This assessment may involve placing varying levels of importance on different aspects of one's life (e.g., health, finances, or family) in accordance with personal values and standards (Diener, Emmons, Larsen, & Griffin, 1985). While life satisfaction is considered distinct from job satisfaction, the two are positively related, as work is one of many areas of life. Higher levels of work-family conflict have also been associated with lower levels of life satisfaction (Kossek & Ozeki, 1998), indicating family also plays an important role in one's satisfaction with life. While not many studies of workplace violence have examined life satisfaction as an outcome, there are a few relevant examples in the literature. One study of abusive supervision, which refers to sustained hostile verbal and nonverbal behaviors from a supervisor, found that employees who experienced higher levels of abusive supervision also reported lowered levels of life satisfaction (Tepper, 2000). Bowling and Beehr (2006) also found that employees' experiencing greater perceived harassment at work reported lower levels of life satisfaction.

Job dissatisfaction

Job dissatisfaction has been defined as a "negative evaluative judgment one makes about one's job or job situation" (Weiss, 2002, p. 175). A variety of work factors have been linked to job dissatisfaction, including organizational justice (Cohen-Charash & Spector, 2001), task importance, autonomy, and task feedback

(Hackman & Oldham, 1976). Furthermore, job dissatisfaction has been associated with a number of well-being indicators, such as anxiety, depression, burnout, cardiovascular disease, general mental health, and sleep problems (Spector, 2006).

In a recent study on exposure to workplace aggression, researchers found that—in a sample of hospital nurses—higher levels of aggression from both patients as well as coworkers were associated with higher levels of job dissatisfaction (Merecz, Drabek, & Moscicka, 2009). The care environment of a hospital —including positive staff relationships, manager support, and staff development—has been linked to job satisfaction. Nursing staff working in hospitals with better care environments were more likely to report satisfaction with their jobs than those in hospitals with poor care environments (Aiken, Clarke, Sloane, Lake, & Cheney, 2008). Finally, higher patient-to-staff ratios have also been linked to lowered job satisfaction (Rafferty et al., 2007).

Turnover intentions

Turnover intention refers to an employees' desire to leave their current organization in order to seek employment elsewhere. Historically, nursing staff in long-term psychiatric facilities have displayed higher tendencies to quit than individuals working in other types of healthcare settings, which may be in large part due to the acute and on-going levels of job demands (Alexander, Lichtenstein, Oh, & Ullman, 1998). Specifically, satisfaction with various aspects of the workplace has been associated with intentions to turnover, including satisfaction with professional growth opportunities, autonomy, workload, and relationships with coworkers. As might be expected, higher intentions to turnover are positively associated with actual turnover behaviors (i.e., leaving the unit or organization).

Relevant to the current study, higher perceived risk of assault by patients has also been positively associated with higher intentions to turnover among nurses (Ito, Eisen, Sederer, Yamada, & Tachimori, 2001). Other researchers have found that nurses exposed to high and medium levels of violence on the job are more likely to intend to quit as well as intend to leave nursing as a profession (Estryn-Behar et al., 2008). One recent study found that nurses who experienced harassment from a manager were over four times more likely to intend to quit than those who did not experience such behavior. Those who experienced harassment from colleagues were twice as likely to intend to turnover as those who had not experienced harassment from colleagues. Finally, those experiencing harassment from both sources were over 11 times more likely to intend to quit than nurses who had not experienced harassment from both of these sources (Deery et al., 2011).

Burnout - exhaustion and cynicism

Burnout is an outcome of extended exposure to stressors, and is commonly used to describe a state of mental weariness. Our study with WSH examines two of the three dimensions of burnout—namely, exhaustion and cynicism (Maslach & Jackson, 1981). *Exhaustion* refers to emotional, cognitive, and physical fatigue brought on by a prolonged exposure to work stressors. *Cynicism* is an indifferent or distant attitude towards work in general and detachment toward others (Schaufeli, Leiter, Maslach, & Jackson, 1996).

Within the healthcare setting, the demanding nature of the work can lead to feelings of exhaustion, which in turn can drain staff members' ability to effectively provide for and respond to patients' needs. When staff members feel exhausted, often one way to manage ongoing work demands includes adopting an attitude of cynicism, thereby distancing oneself from patients. Burnout has been linked to a wide variety of employee and organizational outcomes, including lowered job performance and higher turnover intentions (Maslach, Schaufeli,

& Leiter, 2001). Exhaustion and cynicism represent depleted resources for care providers, such that employees no longer have enough energy to engage in behaviors aiming at preventing assaults. Indeed, previous studies have supported that when employees report high levels of emotional exhaustion, they show poorer task performance, fewer helping behaviors, and diminished safety performance (e.g., Siu, Phillips, & Leung, 2004).

In line with the Job Demands-Resources Theory, researchers have found that job demands such as experienced workload and time pressure are consistently associated with burnout, particularly the dimension of exhaustion. Additionally, the absence of job resources, such as social support, has been linked to higher levels of burnout. Supervisor support has been identified as particularly important in this relationship, even more so than coworker support. Relevant to the current study, higher levels of burnout among nurses have been associated with lowered nurse-rated quality of care (Poghosyan, Clarke, Finlayson, & Aiken, 2010). Verbal harassment in the workplace has also been associated with higher levels of burnout (Deery, Walsh, & Guest, 2011).

Patient quality of care

Employee safety and health is directly linked to patient safety, and as such, we chose to include several patient-related variables in the current study. The high demands placed on nursing staff can make it difficult to fully attend to patient needs, endangering both staff and patients on the wards. Employees were asked to rate the quality of patient care at Western State Hospital, which included the availability of enough care providers to give quality care, as well as the available time and opportunity to discuss patient concerns with other providers. Previous research has shown that psychiatric RNs were more likely than non-psychiatric RNs to report a lack of sufficient staff members to provide quality care (Hanrahan & Aiken, 2008). Furthermore, psychiatric nurses were less likely to report the quality of the care provided on their unit as excellent (Hanrahan & Aiken, 2008). In another study of hospital nurses across five different countries (the United States, Canada, England, Scotland, and Germany), researchers found that nurses in poorly staffed hospitals (e.g., high patient-to-staff ratios) with the least organizational support for nursing care were most likely to rate patient quality of care as low (Aiken, Clarke, & Sloane, 2002).

Satisfaction with patient quality of care

Employees were asked not only to assess the quality of patient care at WSH, but also to rate their satisfaction with the quality of patient care. This concept addresses employees' evaluations of the quality of care they themselves provide to patients. In one study linking hospital care environments (e.g., staff development; nurse manager ability, leadership, and support; and positive nurse/physician relationships) to nursing and patient outcomes, nurses in hospitals with better care environments were much less likely to report negative assessments of the quality of care in their hospitals. More specifically, the odds of nurses reporting concerns with the quality of patient care were between 42% and 69% lower in hospitals with better care environments than in those with poor environments (Aiken et al., 2008). Finally, nurses with the highest workloads (i.e., staff-to-patient ratios) were more likely to rate the quality of care on their wards as low, and the quality of the care in their hospital as deteriorating (Rafferty et al., 2007).

Research Methods

Human Subjects Approvals

All research conducted as part of this grant was approved by the Washington State Institutional Review Board (WSIRB).

Instrument Design

In designing and administering our survey, we gathered data on a wide variety of survey instruments and, qualitative questions. In addition, we asked qualitative questions in our focus group and individual interviews. The topics of these instruments were introduced to our WSH Intervention Development Team and minutes from our discussions comprise an additional data source. Complete instruments are available from the first author and we have also presented a table in Appendix A that describes all the survey instruments, including references, key sample items, response formats, and reliability information.

Recruiting Participants

Participant recruitment was conducted in a multi-faceted approach to maximize participation and representation of direct care providers at Western State Hospital. First, members of the SHARP research team met with various groups to explain the purpose of the survey and answer questions. We met with the following teams: WSH Executive Leadership Team, Nurse Managers, Psychologists, Social Workers, Rehabilitation Therapists, and we attended SEIU and WFSE union meetings as well. Second, announcements regarding the purpose of the survey and opportunity to participate were made via the WSH intranet and through emails to direct care providers. Third, we staffed each hospital area in available conference rooms during each of the three shifts over the course of a week to recruit and administer paper surveys. Finally, we set up a Survey Monkey link and through flyers and intranet and email communications were used to recruit direct care providers who preferred to complete the survey online.

Participant Characteristics

A total of 301 direct care providers and supervisors completed the survey. The sample size was reduced to 292 after excluding cases with a significant amount of missing data on key variables. We present the study sample characteristics in Table 1 and Table 2 below.

The majority of our respondents were white, married or living as married, female, age 50 or older, and had an education level of at least a 2-year Associate degree. The majority of respondents did not have a dependent child at home, however just over 40% were caring for an elderly adult outside of work.

Table 1. ***Western State Hospital participant's basic demographic characteristics.***

	Frequency	Percent
Gender (N = 248)		
Female	135	54.6
Male	113	45.4
Age (N = 246)		
18-29 years	13	5.3
30-39 years	41	16.7
40-49 years	67	27.2
50-59 years	80	32.5
60-69 years	42	17.1
70+ years	3	1.2
Ethnicity (N =258)		
White	130	50.4
Multi-Ethnic	23	8.9
Black/African American	37	14.3
Asian	39	15.1
Native Hawaiian/Pacific Islander	6	2.3
American Indian/Alaskan Native	1	0.4
Hispanic	5	1.9
Declined to answer	17	6.6
Education (N = 248)		
High School/GED	24	9.7
2-yr Assoc. Degree	55	22.2
Some College	74	29.8
Bachelor's Degree	66	26.6
Master's Degree	20	8.1
Doctorate Degree	9	3.6
Relationship Status (N =246)		
Married, Living as Married	149	60.6
Widowed	4	1.6
Divorced or Separated	57	23.2
Never Married	25	10.2
Domestic Partner	11	4.5
Dependent Children at Home (N =258)		
0 Children	164	63.6
1 Child	52	20.2
2 Children	28	10.9
3 Children	10	3.9
4 Children	2	0.8
5 Children	2	0.8
Caring for an Elderly Adult (N = 219)		
No	124	56.6
Yes	95	43.4

Table 2. ***Western State Hospital participants' work and demographic characteristics.***

	N	Mean	Standard Deviation	Minimum	Maximum
Hour Length of Typical Shift	255	8.56	1.89	1.6	20
Overtime Hours per Week	242	1.83	4.40	0	43
Hours Worked - Total	255	42.81	9.44	8	100
Position Tenure (years)	252	7.90	7.20	.08	31.67
Organization Tenure (years)	255	12.45	8.57	.08	33.25
Occupational Tenure (years)	252	16.46	10.08	.08	45
Number of ward pulls (past 6 months)	235	9.40	15.83	0	180
Number of Patients Cared for	240	29.20	11.79	4	140

Note: *N* = number of participants reporting; Mean = average; Standard Deviation = variation from the mean; Minimum = lowest value reported; Maximum = highest value reported.

Survey respondents have worked at Western State Hospital for an average of 12.45 years, and have been at their current position for almost 8 years, though we did capture staff at both ends of the spectrum, from the newly employed (those working at the hospital less than a year) to the highly tenured. Respondents reported caring for on average 29 patients, with a range of 4 to 140 patients, reflecting occupational discipline. While the average schedule shift length was reported to be just above 8 hours, the average reported working time was closer to 9 hours a day, which may be due to employees who reported working longer than their scheduled shift. While the average number of overtime hours worked per week was reported to be less than 2 hours, the range was highly skewed so that while most were not reporting overtime, a few respondents reported as many as 43 hours per week in overtime. Significantly, pulling between wards was common, with respondents reporting being pulled on average more than 9 times in the past 6 months, and some reporting being pulled up to 180 times (or about twice a day for 6 months). As a snapshot of the characteristics of work for direct-care staff, this data reflects high patient loads, a generally long hospital tenure, and high amounts of pulling and overtime for some direct-care staff.

Results for Aim 1: Critical Stressors and Negative Work Experiences, Proposed Interventions

To address Aim 1, we investigated the nature of work context resources such as scheduling, staffing, organizational support, supervisor and co-worker behavior, and workplace violence incidents as critical stressors using qualitative data from the care provider work, stress, and health survey as well as focus groups, individual interview data, and from minutes of discussions with our intervention development team. Participants described to us their perceptions of the work context present at the hospital, the resources available to them, and their frustrations and sources of work-related stress. The aim of this portion of the research is to offer the

perspectives of direct-care staff members and their supervisors, and to more fully understand and describe how the nature of their work affects their health and safety.

Methods

We conducted focus groups (3) with non-permanent direct care providers, Health and Safety Committee members, and the Nurse Staffing Effectiveness Committee members between March and August of 2012. During the same time period we also conducted semi-structured individual interviews with one union representative and two supervisors. Topics included scheduling systems, current policies and practices relevant to workplace violence, the organizational culture, and recent change efforts regarding workplace violence, supervisor/coworker support, communication, staffing, and schedule flexibility. All those who arrived at the meeting were given a written description of the study for the purposes of informed consent. Participants were informed that they had the choice of whether to participate or not after they had read the study description. Participants in both focus groups and interviews were told that the event would be recorded for transcription and were asked not to use names to ensure confidentiality. Focus group participants were also asked to not repeat details of the discussion outside of the focus group. Any names that were inadvertently mentioned were removed from subsequent transcription for confidentiality. Original recordings have been deleted for security and confidentiality. Qualitative data from open-ended survey questions and the Intervention Development Team meeting minutes were also used in this analysis. All research was approved by the Washington State Institutional Review Board.

We conducted a content analysis of the qualitative data to capture the issues present in the workplace context. Focus group and interview participants were direct care providers and supervisors with a range in tenure at the hospital between 2 and 30 years. The Intervention Development Team consists of a multi-disciplinary group of union representatives, direct care staff and supervisors, and upper-level management. Qualitative survey data was collected from all survey respondents who wrote-in responses, the demographic range of these participants can be found in Table 1.

Coding was performed by reviewing the narrative responses and highlighting selected text as we recognized the presence of a topic. Two researchers analyzed the data using an open-ended coding scheme and at 3 separate intervals during the coding process met to compare one of the transcripts to assess for inter-coder reliability, define codes, re-assess the emergent coding scheme, and to discuss categorizing the codes into major themes. The coding was iterative in that each discussion allowed for a process of re-reading of the text, re-assessing previous coding, re-evaluating the coding scheme, and refining code definitions to arrive at agreement between coders. The major themes chosen represent the most consistent and most represented topics from the coding of all four data sources. While these larger themes are inclusive of many more specific issues and are not singular topics completely unrelated to one another, they are distinct and clearly articulated areas for improvement and intervention across all qualitative data sources. The results we present below reflect the major themes from our analysis.

Table 3. ***Content Analysis Codes, Themes, and Data Sources***

Code	Related Major Theme	Focus Groups	Interviews	Intervention Team Minutes	Open-Ended Survey Questions
Internal Control over Work	Staffing Demands	X	X	X	X
Supervisor Behavior	Communication	X	X		X
Organizational Dysfunction	Communication Training	X	X	X	X
Good Practices	Communication Training			X	
Co-worker Support	Social Support	X	X	X	
Supervisor Support	Social Support	X	X	X	X
Organizational Support	Social Support	X	X	X	X
Violence policy and prevention	Communication Training	X		X	X
Cultural Issues	Staffing Demands	X	X	X	X
Organizational Change	Staffing Demands Communication	X	X	X	X
Psychosocial Environment	Social Support	X	X	X	X
Physical Environment	Communication Staffing Demands			X	X
Burnout/Overwork	Staffing Demands Social Support	X	X	X	X
Work-Family Conflict	Social Support		X	X	X
Turnover	Staffing Demands Training Social Support	X	X	X	X

Findings – Major Themes

Staffing Demands

Staffing demands, or perceptions of low staffing adequacy that affect patient-to-staff ratios, improper staff mix, ward team structure, and staff and patient safety, were a significant theme mentioned across all focus groups, interviews, and open-ended survey questions. Low staffing levels are documented in research as an antecedent to a lack of schedule flexibility, - a unique job stressor that contributes to job dissatisfaction and unscheduled

> "We used to work as a team - but now lots of people are pulled to the ward and they don't know our patients or procedures. It's very disruptive and unsafe for everyone - too much tension, not a therapeutic milieu."
>
> Source: Survey open-ended question

absences due to calling in sick. Pulling staff, understaffing wards, and disrupting the formation of a "team" dynamic were all mentioned as practices that contributed to higher risk situations and assaults on the ward. Staffing to the acuity of a ward, and staffing appropriately to changes in the ward, such as 1-on-1 monitoring, were reported as necessary and important changes for improvements to staff and patient safety. Low staffing adequacy was viewed as related to negative outcomes for staff and the organization, including:

> "You've got Tuesday, Wednesday off… Can't go to church. Can't go to any function. You ask for a day off. Somebody with seniority gets a day off. So what happens? They will call in sick."
>
> Source: Staffing effectiveness focus group

- Understaffed wards
- Lack of schedule flexibility to change schedules or shifts, or for personal life events
- Unscheduled absences due to work stress and frustration
- Pulling staff to unfamiliar wards
- High amounts of turnover
- Decreased capacity for treatment activities
- Disruption of ward teams and the therapeutic environment
- Increased voluntary overtime and resulting burnout from overwork
- Situations leading to patient-on-staff and patient-on-patient assault
- Emotional exhaustion and cynical reactions to work responsibilities
- Decreased personal investment in work
- Job dissatisfaction from work stress

Our quantitative survey data indicates that schedule control was significantly and negatively related to disruptive behavior and witnessing disruptive behavior, while schedule satisfaction was significantly negatively associated with being assaulted by a patient, disruptive behavior, and witnessing disruptive behavior. That is, workplace violence outcomes (assault, disruptive behavior, and witnessing disruptive behavior) were significantly associated with lower work context resources – in this case, low scheduling resources in the form of schedule control and schedule satisfaction. The concerns reported by participants in the qualitative data regarding staffing inadequacy and risk of assault are in alignment with the survey quantitative data, thus strengthening these findings.

Low staffing adequacy was also cited as a major source of stress across care provider disciplines, including nursing, therapy, psychology, and direct-care floor staff. Staffing was by and large the most consistently mentioned need of hospital respondents. It is a critical and significant issue for those staff who participated in this research, where current staffing adequacy is perceived as being unsafe.

> "People have lost respect for each other… there is little support for doing your job and supporting each other… Staff have territorialized their work area and are so preoccupied with being protective (against accusations/injury, safety) that they have little time to be proactive."
>
> Source: Survey open-ended question

Social Support

Social support from the organization, immediate supervisors, and co-worker teams is a component of organizational culture and refers to positive social interactions providing help and information between co-workers, staff and

supervisors, and upper-level management and staff. We asked about all three levels of support in our interviews and focus groups (see Appendix B), and the topic of organizational and supervisory support was consistently and clearly expressed in these interviews, as well as, in the open-ended survey questions and our meetings with the Intervention Development Team. The lack of organizational and supervisor support was often cited in our conversations and in our qualitative survey data as affecting staff and patient safety, quality of care, and positive staff-patient interactions. Supervisor support is essential to creating therapeutic and safe environments by building constructive relationships with staff, being able and available to clearly communicate with staff, and modeling appropriate behavior.

The qualitative data from our interviews, focus groups, surveys, and meeting minutes suggested disruptive behavior (bullying) and incivility were consequences of a lack of social support for direct care providers -- especially supervisor and organizational support. This corroborates the results from our quantitative survey data that show social support to be significantly related to workplace violence and incivility. Lower levels of support were associated with experiencing higher levels of disruptive behavior. Direct-care staff perceptions of organizational support were very low on average, with a mean score of 2.31 (on a 1-5 scale), falling well below perceptions of supervisory (3.48) and co-worker support (3.65). Suggested improvements from our interviews with direct care staff and supervisors are listed below:

- Provide advice and appropriate counsel
- Treat staff equally
- Properly investigate reports of bullying and incivility in a transparent and efficient manner
- Acknowledge the work stress and family pressures and responsibilities that staff face
- Support floor staff decisions on patient care
- Listen to floor staff opinions on a patient's status and treatment
- Provide immediate and thoughtful debriefings after a violent incident

Debriefing is a specific form of support designed to follow-up with care providers after an assault or violent incident. Supervisors can demonstrate support by performing appropriate, thoughtful, and timely debriefings, while the organization can show support by making debriefings an important part of hospital policy and procedure. Our qualitative data suggested that debriefings were largely experienced as informal, rare, and unhelpful, and that formal and informal responses post-incident were lacking from supervisors and upper-level management in supportive tone, value, and occurrence.

"It is my personal experience… that this [administration] continually overlooks and/or denies the unacceptable level of incivility, bullying and unfair treatment of the employees. There have been many times that I have experienced the "consequences" for reporting misconduct for which I am duty-bound to report… Caring for the needs of the chronically mentally ill patients is very difficult, but I feel ***a greater stress*** in dealing with the blatant disregard administration (including many supervisors) has for the collective bargaining agreements, policies and laws which are in place to protect the rights and well-being of the employees."

Source: Survey open-ended question
[emphasis added]

Communication

Communication from management, from co-workers and from supervisors was a major theme from both the survey data and our interviews and focus groups with staff. Communication in regards to patient status, previous violent incidents, and in regards to planning for and responding to escalating situations, was regarded as important to staff safety, and also a target for improvement at all levels of the hospital. Clear, consistent communication from management, from union leadership, and from supervisors is also an important and desired avenue for cooperation and collaboration with direct care staff. The lack of communication in regards to decisions that affect ward staff was perceived as indication of a lack of organizational respect and support. Staff also highlighted a minority of supervisors that were perceived to communicate and listen effectively. Other accounts of communication lapses included:

> "Staffing concerns, opinions, and advice [are] often ignored or brushed off. Attitude is… one in which staff are viewed as expendable. It's the little things we see and hear that bear this out. Decisions affecting frontline staff directly are often not communicated until the axe falls. In spite of the theory of openness in government a cone of silence very much exists around WSH…"
>
> - Source: Survey Open-Ended Question

- Perceptions that management is uncommunicative, distant and uncaring
- Changes to policies and procedures that are perceived as sudden and unclear
- Changes that occur without input from direct-care staff
- A lack of transparency in decisions in hiring and promotion
- A lack of communication between disciplines

Care provider suggestions identified in the qualitative data analysis and the survey open-ended questions to improve communication included:

> "Other staff being alert and aware of what is happening - signaling better toward each other in subduing an aggressive patient."
>
> Source: Survey open-ended question

- Staff alerting each other about escalating or aggressive patients
- More detailed communication at shift report about patients and the psychosocial environment on the ward
- Better communication about changes to a patients' status or treatment plan
- Allow floor staff to communicate their concerns and opinions, and provide authentic and honest feedback in a timely manner

The lack of effective and clear communication was also cited as a reason for the prevalence of bullying and incivility and a major contextual issue contributing to the perpetuation of gossip, harassment and other unprofessional behaviors. It is important to emphasize the desire for two-way communication among respondents as well. While a lack of communication from upper management was largely emphasized participants also strongly expressed a desire for management and some supervisors to listen to care providers' concerns about their job responsibilities and job stress, and their views on the quality of patient care. Respondents described a lack of basic communication behaviors among co-workers and supervisors including: responding to emails, simple introductions to unfamiliar ward staff or new employees, looking at fellow employees when they are speaking, and responding to requests for information following an assault. These are

simple, but important and respectful ways for hospital staff to improve communication between employees, and ultimately, the morale of direct care staff.

Training

The lack of consistent, effective, and appropriate training was frequently brought up as a source of frustration and as a possible solution to all aspects of violence in the workplace, communication breakdowns, clinical variation between supervisors and wards, and injuries resulting from violent incidents. The importance of training was emphasized by direct care staff and supervisors, with both groups indicating that the hospital would be safer if more people were able to go to trainings and go more often. Training is desired in all aspects of workplace violence policies and procedures: self-defense and proper takedown plans and procedures, safety behaviors and de-escalation techniques, and in the treatment of patients with mental illness. Consistent, focused trainings for direct care staff and supervisors emphasizing the policies, procedures, and importantly, the behaviors that care providers need to maintain a safe and therapeutic environment are important to creating and sustaining positive change. Trainings can be focused on patient management, as well as, issues concerning communication and support. That staff themselves see the importance of training and desire more training is a significant indicator of their needs. Respondents expressed a need for training in:

> "…reminders on how to manage aggressive patients more than once a year. I have seen 4 staff handle an aggressive patient well that knew what they were doing, and about 8 staff in another incident that had to call for backup because they were clueless."
>
> Source: Survey open-ended question

- Workplace violence policies and procedures
- De-escalation and takedown techniques
- Proper integration of new employees into ward service
- Improving support and communication between supervisors and managers and direct care staff
- Implementing new techniques and sustaining good practices

> "Most hospital training looks good but is ignored at the ward level. WSH has a callous attitude about mental illness [and] mentally ill people. Some employees continue to believe that patients deserve/caused their illnesses."
>
> Source: Survey open-ended question

The lack of appropriate training and ability to provide consistent refresher training is related to the negative effects of low staffing. Without enough staff, ward supervisors may not feel comfortable with direct-care staff leaving the ward to attend trainings - which are important for the improvement and maintenance of patient care skills. When training does occur, supervisors have a critical role in promoting the training on the ward through communicating the value of the training, role modeling behaviors that reinforce the training content, and reframing negative attitudes or beliefs about mental illness as mentioned in the quote above.

Aim 1 Conclusions

Low staffing adequacy is the largest theme to emerge from the qualitative data and appears to have a reverberating effect on many of the issues concerning training, communication and social support. Perceptions of low staffing adequacy are a major stressor to direct-care staff and their supervisors, who are managing the

demands of providing high quality patient care and ensuring patient safety in a 24 hour facility. When staffing levels are minimally calculated, the amount of flexibility to individual schedules is also minimal, and perhaps even nonexistent for some care providers. Our findings suggest that staff do not request time off because of this lack of structural schedule flexibility and instead resort to using unscheduled absences or sick leave to manage work and family life, or recovery time from work stress and burnout. Participants reported that the high use of unscheduled absences resulted in increased overtime, another contributor to care provider work stress and burnout.

In the qualitative data, WSH care providers strongly voiced their concerns over inadequate staffing. However, within the existing budget, policy and practice constraints, poor communication, lack of training, and lack of social support were also themes and areas for improvement to address in conjunction with staffing demands. Care providers repeatedly expressed desires to be listened to, spoken with, respected and supported. Regular and appropriate trainings, communications, and debriefings were requested across data sources and spoken of as opportunities for the organization to show support for care providers at the hospital, particularly in the event of a major policy change or a violent incident.

Respondents reported that the persistent stress due to low staffing demands contributed to lower staff morale – and to emotional exhaustion, cynicism and a lack of commitment to work, which in turn led to disruptive behavior and incivility between staff and from staff to patients. Staff experiencing burnout may struggle to find the energy to enact positive, therapeutic behaviors in response to patients and to communicate respectfully with other staff. Low staff morale and burnout may contribute to use of sick leave or FMLA as a coping strategy to gain control over their schedules and take a break from a negative hospital environment – further exacerbating low staffing on the wards. Low staffing also impacts care provider training and patient-centered ward activities because there are not enough staff to replace those who leave for training. Finally, the combined effect of low staffing adequacy, unscheduled absences, burnout, disruptive behavior, and lack of training, leaves patients and care providers at greater risk for patient assault.

The major theme of low staffing and its relationship with lower patient and staff safety that emerged from our qualitative data is in alignment with our quantitative survey results. Our survey results suggest that low staffing adequacy is significantly associated with higher levels of patient assaults. This corroboration of findings from two data sources and data types strengthens the impact of the overall study conclusions and recommendations related to staffing adequacy.

Results for Aim 2: Testing the Washington Workplace Violence Stress and Health Model

Testing the Core Study Relationships

Our second aim concerned testing the Washington Work, Stress, and Health Model described in Figure 1 (p.14). As described previously, the Washington Work, Stress, and Health Model illustrates relationships between work context resources and workplace violence and between workplace violence and care provider health and safety, family, and work outcomes. Therefore, the analyses we conducted to address Aim 2 investigate a) whether the work context influences workplace violence through the relationships hypothesized in the model; b) whether the work context is related to care providers' health, family, and work outcomes; and finally, c)whether workplace violence influences care providers' health, family, and work outcomes.

To determine the effects of the organizational context variables, we conducted a series of multiple regression analyses predicting each model component from the set of organizational context variables and workplace violence variables. Multiple regression analyses calculate the relationship between different sets of predictor variables and an outcome variable. This relationship is called a multiple correlation; the *squared multiple correlation* or *multiple R squared* (*R*2) indicates the total amount of variance explained in the outcome variable by the set of predictor variables. Multiple regression analyses generate a set of standardized regression weights that indicate the relative contribution of each predictor to the outcome. Thus, researchers use multiple regression analyses to investigate which predictor variables explain the most variance in an outcome.

We start by presenting results of workplace violence frequency by type of aggression experienced (see Table 4) and by care provider position (see Table 5). Following these tables, Tables 6-10 show the results of the multiple regression analyses for the organizational context in relation to care provider health, family, and work outcomes. Table 11 presents the results of our largest model which simultaneously examines relationships between organizational context on patient assaults and disruptive behavior. Finally, Tables 12-16 present the results for patient assaults and disruptive behavior relationships with care provider health, family, and work outcomes. Significant relationships are shown in bold in each table with asterisks indicating the level of significance. We organize our discussion by each table, discussing all of the findings for each one in turn.

Table 4. ***Workplace violence experienced by direct care providers by type of violence.***

Workplace Violence	*N*	Frequency / Yes	%
Patient Assault (past 2 years)	257	142	55.3
Disruptive Behavior			
(weekly, daily)	257	96	37.4
(past year)	257	221	86.0
Witnessing Disruptive Behavior	257	122	47.3

We asked participants to respond to whether they had been assaulted in the past 2 years and 55.3% of WSH care providers reported being assaulted by a patient. A high percentage (86%) of care providers reported experiencing disruptive behavior in the past year with 37.4% experiencing aggressive behavior from coworkers and supervisors on a weekly or daily basis. Finally, 47.3% of care providers reported witnessing disruptive behavior in the past year.

These percentages on all 3 measures are considered to be high. Another concern with these high rates of disruptive behavior is that these reports are from care providers only. In our qualitative data, respondents reported that patients also witness coworker to coworker disruptive behavior. However, we did not include patients as participants in the study and do not have their direct reports of experience with assault and disruptive behavior or witnessing disruptive behavior among other patients or hospital staff.

Table 5. ***Workplace violence experienced by direct care providers by position.***

Care Provider Position	*N*=281	Patient Assaults - past 2 years	% of staff assaulted
RN4, admin/mgmt	4	0	0.0
RN3	29	17	10.7
RN2	50	27	17.0
LPN	42	22	13.8
PSN	17	8	5.2
Psychologist	8	1	0.6
Institutional Counselor	21	16	10.1
Social Worker	6	3	1.9
Mental Health Tech (MHT)	57	35	22.0
Psychiatric Security Attendant (PSA)	23	18	11.3
Rec. Therapist & Rehab. Therapist	8	2	1.3
Other	27	4	6.3

Mental Health Technicians, Psychiatric Security Attendants, RN2s, and LPNs experienced the highest percentages of assault among the participants who contributed to the study. We want to interpret these results with caution, however, because the response rate to the survey overall was low, and a low response rate limits the representativeness of the results relative to the population of eligible WSH care providers that could potentially have participated in the survey.

The effects or organizational work context on care provider health and work outcomes

In this section, we will present findings from multiple regression analyses that compare organizational resources and their relationships to the WWSH model's health, family, and work outcomes. We want to understand how organizational level resources impact employee outcomes. In Analysis A, we compare staffing

and scheduling resources as predictors and in Analysis B, we compare the various social support sources as predictors of the employee outcomes.

Table 6. ***The effects of organizational context support resources on health outcomes.***

	Health Outcomes			
Organizational Resources Predictors Step 2	**General Health *N*=174**	**Physical Discomfort *N*=174**	**Physical Symptoms *N*=174**	**Physical Injury *N*=174**
Analysis A	β	β	β	β
Staffing, Schedule , Job Security				
Staffing Adequacy	**2.18***	**-.11***	-.06	-.00
Schedule Control	-.83	-.02	-.08	.01
Schedule Satisfaction	-1.20	.02	.07	-.12
Job Security	1.29	**-.10***	**-.13***	-.06
Variance explained (R^2)	.06	.08	.11	.10
Analysis B				
Levels of Support	*N*=176	*N*=176	*N*=176	*N*=176
Violence Prevention Climate	.38	-.03	-.12	-.08
Organizational Support	.22	-.10	**-.13***	-.03
Family Supportive Supervisor Behaviors	-.66	-.03	-.04	.01
Coworker Support	1.52	-.01	-.03	-.02
Variance explained (R^2)	.02	.05	.11	.08

Note: The analyses above include step 1 control variables of: education, position tenure, shift, number of ward pulls, staff position, and contact with supervisor. Analysis A Step 2: staffing and schedule variables. Analysis B Step 2: levels of support variables. β = standardized regression weight.
*$p < .05$, **$p < .01$, ***$p < .001$.

In the analyses (A) comparing staffing adequacy, schedule control and satisfaction, and job security, we found that better staffing adequacy was significantly related to better employee general health and less physical discomfort/pain. High job security was also related to less physical discomfort/pain and fewer stress-related physical symptoms. Both staffing adequacy and job security contributed to better health outcomes for care providers.

The analyses (B) compared social support at different levels in the organization in relation to health outcomes. The data suggest that higher levels of organizational support are related to fewer stress-related physical symptoms.

Table 7. ***The effects of organizational context resources on health and safety outcomes.***

	Health & Safety Outcomes		
Organizational Resources Predictors Step 3	**Depressive Symptoms *N*=174**	**Sleep Disruption *N*=174**	**Safety Participation *N*=174**
Analysis A	β	β	β
Staffing, Schedule , Job Security			
Staffing Adequacy	-.05	-.00	-.04
Schedule Control	-.02	-.08	.01
Schedule Satisfaction	**-.16****	**-.16***	-.01
Job Security	**-.14****	**-.16****	.05
Variance explained (R^2)	.16	.15	.03
Analysis B			
Levels of Support	*N*=176	*N*=176	*N*=176
Violence Prevention Climate	-.09	-.05	.07
Organizational Support	**-.09***	**-.16***	-.08
Family Supportive Supervisor Behaviors	-.04	-.05	-.04
Coworker Support	**-.17*****	.03	**.12****
Variance explained (R^2)	.16	.09	.09

Note: The analyses above include step 1 control variables of: education, position tenure, shift, number of ward pulls, staff position, and contact with supervisor. Analysis A Step 2: staffing and schedule variables. Analysis B Step 2: levels of support variables.
β = standardized regression weight.
**p* < .05, ***p* < .01, ****p* < .001.

In the analyses (A) comparing staffing adequacy, schedule control and satisfaction, and job security, we found that higher schedule satisfaction and high job security were both significantly related to lower depressive symptoms and less sleep disruption. The analyses (B) compared social support at different levels in the organization in relation to health outcomes. Here, the data indicate that higher levels of organizational support are related to lower depressive symptoms and less sleep disruption. Higher coworker support is related to lower depressive symptoms and higher safety participation.

Table 8. ***The effects of organizational context resources on family outcomes***

	Family Outcomes			
Organizational Resources Predictors Step 2	**Work-Family Conflict *N*=237**	**Partner Support *N* =236**	**Relationship Satisfaction *N* =236**	**Life Satisfaction *N* =237**
Analysis A				
Staffing, Schedule , Job Security	β	β	β	β
Staffing Adequacy	-.11	-.02	-.12	-.05
Schedule Control	-.08	.05	.09	**.22****
Schedule Satisfaction	**-.33*****	.05	.04	**.27****
Job Security	-.07	.07	.16	**.25****
Variance explained (R^2)	.26	.11	.07	.26
Analysis B				
Levels of Support	β	β	β	β
Violence Prevention Climate	-.02	.00	.11	.12
Organizational Support	**-.22****	.03	.01	**.31*****
Family Supportive Supervisor Behaviors	-.12	-.08	-.19	-.07
Coworker Support	-.12	.10	.18	**.23****
Variance explained (R^2)	.19	.10	.07	.21

Note: The analyses above include Step 1 control variables of: education, position tenure, shift, staff position, relationship status, and number of children at home. Analysis A Step 2: staffing and schedule variables. Analysis B Step 2: levels of support variables. β = standardized regression weight.
*$p < .05$, **$p < .01$, ***$p < .001$.

In the analyses (A) comparing staffing adequacy, schedule control and satisfaction, and job security, we found that greater schedule control, schedule satisfaction, and job security were significantly related to greater satisfaction with life. High schedule satisfaction was also related to low work-family conflict.

The analyses (B) compared social support at different levels in the organization in relation to health outcomes. The data suggest that high levels of organizational support are related to less work-family conflict and greater satisfaction with life. High coworker support was associated with greater life satisfaction as well.

Table 9. ***The effects of organizational context resources on job dissatisfaction and burnout.***

	Work Outcomes		
Organizational Resources Predictors Step 2	**Job Dissatisfaction *N*=237**	**Burnout Exhaustion *N* =236**	**Burnout Cynicism *N* =236**
Analysis A			
Staffing, Schedule , Job Security	β	β	β
Staffing Adequacy	-.08	**-.35*** **	-.11
Schedule Control	-.13	-.13	-.11
Schedule Satisfaction	**-.22** **	**-.30** **	**-.39*** **
Job Security	-.08	-.12	-.08
Variance explained (R^2)	.20	.26	.18
Analysis B			
Levels of Support	β	β	β
Violence Prevention Climate	**-.14***	-.20	**-.28***
Organizational Support	**-.21** **	**-.28***	-.08
Family Supportive Supervisor Behaviors	-.12	**-.20***	-.19
Coworker Support	**-.24*** **	**-.31** **	-.14
Variance explained (R^2)	.32	.27	.17

Note: The analyses above include step 1 control variables of: education, position tenure, shift, number of ward pulls, staff position, and contact with supervisor. Analysis A Step 2: staffing and schedule variables. Analysis B Step 2: levels of support variables.
β = standardized regression weight.
*$p < .05$, **$p < .01$, ***$p < .001$.

In the analyses (A) comparing staffing adequacy, schedule control and satisfaction, and job security, we found that better staffing adequacy is significantly related to lower care provider burnout-exhaustion. High schedule satisfaction was related to all three outcomes, job dissatisfaction, and both types of burnout – exhaustion and cynicism.

The analyses (B) compared social support at different levels in the organization in relation to health outcomes. The data indicate that high levels of violence prevention climate are related to low job dissatisfaction and low burnout-cynicism. High organizational support is associated with low job dissatisfaction and exhaustion while high family supportive supervision is linked to low burnout - exhaustion. Finally, when coworker support is high, job dissatisfaction and exhaustion are low.

Table 10. ***The effects of organizational context resources on turnover intentions, patient quality of care, and satisfaction with patient care quality.***

	Work Outcomes		
Organizational Resources Predictors Step 2	**Turnover Intentions *N*=237**	**Patient Quality of Care *N* =236**	**Satisfaction with Patient Care *N* =236**
(Analysis A)			
Staffing, Schedule , Job Security	β	β	β
Staffing Adequacy	-.11	**.70*** **	**.28*** **
Schedule Control	.03	**.13*** **	-.12
Schedule Satisfaction	**-.24***	-.00	.11
Job Security	.00	.00	-.04
Variance explained (R^2)	.15	.78	.13
(Analysis B)			
Levels of Support	β	β	β
Violence Prevention Climate	-.00	**.18** **	**.21** **
Organizational Support	-.18	**.21*** **	.00
Family Supportive Supervisor Behaviors	-.09	**.30*** **	.04
Coworker Support	**-.27** **	.03	.13
Variance explained (R^2)	.21	.47	.11

Note: The analyses above include step 1 control variables of: education, position tenure, shift, number of ward pulls, staff position, and contact with supervisor. Analysis A Step 2: staffing and schedule variables. Analysis B Step 2: levels of support variables.
β = standardized regression weight.
*$p < .05$, **$p < .01$, ***$p < .001$.

In the analyses (A) comparing staffing adequacy, schedule control and satisfaction, and job security, we found that better staffing adequacy is significantly related to high patient quality of care and care provider satisfaction with the quality of care they provide. High schedule control is also related to high patient quality of care while high schedule satisfaction is related to low turnover intentions.

The analyses (B) compared social support at different levels in the organization in relation to health outcomes. The data indicate that high levels of violence prevention climate are related to high patient quality of care and care provider satisfaction with the quality of care. Organizational support and family supportive supervision, when high, are also related to high patient quality of care. Finally, when coworker support is high, turnover intentions are low.

The model in the analysis below allows us to examine relationships between the organizational resources and the workplace violence outcomes to understand which resources are important for each outcome. We can then start to think about how to intervene to develop a training intervention that targets workplace violence.

Table 11. ***The effects of organizational context on patient assaults and disruptive behavior.***

	Work Outcomes		
Organizational Resources Predictors Step 2	**Patient Assaults *N*=185**	**Disruptive Behavior *N* = 185**	**Witnessing Disruptive Behavior *N* =193**
Control Variables (β)			
Education Level	.10	.06	.10
Position Tenure	.11	-.07	-.11
Shift	-.14	-.06	.05
Ward pulls past 6 months	.07	.02	.10
Staff Position	**.22****	.08	.12
Contact with Supervisor	**.14***	-.03	.00
Work Schedule Resources (β)			
Staffing Adequacy	**-.22****	-.06	-.16
Schedule Control	-.04	.00	-.08
Schedule Satisfaction	-.21	**-.17****	-.01
Work Support Resources (β)			
Violence Prevention Climate	**-.25****	**-.16***	-.04
Organizational Support	-.03	.03	-.10
Family Supportive Supervisor Behaviors	-.10	**-.36*****	**-.22***
Coworker Support	**-.15***	**-.16****	.07
Variance explained (R^2)	**.16****	**.41*****	**.19***

Note: Multiples linear regressions – 3 analyses are presented for patient assault, disruptive behavior, and witnessing disruptive behavior. Control variables were entered in Step 1. Work schedule and support variables were entered together in Step 2. β = standardized regression weight. *p < .05, **p < .01, ***p < .001.

Patient assaults. Looking at patient assaults, our data suggest that low staffing adequacy is significantly related to an increase in patient assaults. When violence prevention climate and coworker support are low, patient assaults increase as well. In addition, staff position and contact time with their supervisor was associated with patient assaults – reflecting that the more patient and supervisor contact hours staff have, the more likely they will experience a patient assault. This makes sense when we consider that Mental Health Technicians, Psychiatric Security Attendants, and Licensed Practical Nurses are working on the ward with patients and their supervisors (Charge Nurses) and therefore have high levels of patient contact and increased risk for assault. *Patient and staff safety will likely improve when staffing adequacy, violence prevention climate, and coworker support are increased.*

Disruptive behavior. We also found that low levels of schedule satisfaction, violence prevention climate, family supportive supervisor behaviors, and coworker support are associated with high disruptive behavior or incivility among employees in the hospital. The variance explained (R^2) in the disruptive behavior analysis is 41% and highly significant. *Building resources along the lines of increasing schedule satisfaction, violence prevention climate, family supportive supervisors, and supportive coworkers is one approach Western State Hospital can take to eliminate disruptive behavior.*

Witnessing disruptive behavior. Finally, low levels of family supportive supervisor behaviors are associated with more witnessing disruptive behavior. Family supportive supervisors support the total worker and supervise employees to promote effective work-life management. *Care providers with such supervisors may experience a buffering effect from the support and recognition, thus, engaging in and witnessing less disruptive behavior.* More research analyses are needed to confirm this potential buffering effect.

Workplace Violence and Disruptive Behavior Relationships with Care Provider Outcomes

Table 12. ***The effects of*** **workplace violence on health outcomes.**

	Health Outcomes			
Workplace Violence Predictors Step 2	**General Health *N*=237**	**Physical Discomfort *N* =236**	**Physical Symptoms *N* =236**	**Physical Injury *N* =237**
	β	β	β	β
Patient Assault	.44	.03	.04	**.13*** **
Variance explained (R^2)	.02	.04	.03	.19
Disruptive Behavior	.24	**.15***	**.25*** **	**.14***
Variance explained (R^2)	.01	.06	.08	.08
Witnessing Disruptive Behavior	-.53	**.13*** **	**.13*** **	**.12*** **
Variance explained (R^2)	.01	.11	.08	.11

Note: All 12 analyses are univariate with step 1 control variables of: age, gender, supervisor contact, job tenure, weekly hours worked, and staff position. β = standardized regression weight.
*$p < .05$, **$p < .01$, ***$p < .001$.

Health Outcomes

General health, physical discomfort-pain, physical symptoms, and physical injury. We found no effects for reports of general health in relation to the workplace violence variables. However, physical discomfort-pain, physical symptoms, and physical injury were associated with some of the workplace violence variables. Surprisingly physical discomfort-pain was not significantly associated with patient assault. However, care providers who reported more disruptive behavior and more witnessing disruptive also reported more physical discomfort, physical symptoms, and physical injury.

It is interesting that higher levels of disruptive behavior and witnessing disruptive behavior are significantly related to physical injury. We enlisted the feedback of our Western State Hospital Intervention Development Team to interpret this finding and understand it as follows: Disruptive behavior among hospital employees may spill over to patients who are sensitive and respond to care providers' stress. In addition, care providers experiencing stress from disruptive behavior may have more difficulty responding to patient needs therapeutically – both of these responses potentially impact patient and staff safety through increased risk of

injury from assault. These findings suggest the important role of disruptive behavior as a stressor in psychiatric care providers' work experiences and health outcomes.

Table 13. ***The effects of workplace violence on health and safety outcomes.***

	Health and Safety Outcomes		
Workplace Violence Predictors Step 2	**Depressive Symptoms *N* = 234**	**Sleep Disruption *N* =234**	**Safety Participation *N* = 234**
	β	β	β
Patient Assault	.03	.04	.01
Variance explained (R^2)	.02	.03	.01
Disruptive Behavior	**.31*** **	**.21** **	-.03
Variance explained (R^2)	.13	.06	.01
Witnessing Disruptive Behavior	**.11*** **	**.11** **	.04
Variance explained (R^2)	.06	.05	.02

Note: All 9 analyses are univariate with step 1 control variables of: age, gender, supervisor contact, job tenure, weekly hours worked, and staff position. β = standardized regression weight. We also controlled for sleep apnea in the sleep disruption analysis.
*$p < .05$, **$p < .01$, ***$p < .001$.

Health and Safety Outcomes

Depressive symptoms, sleep disruption, and safety participation. We found no effects for reports of depressive symptoms, sleep disruption or safety participation in relation to *patient assault*. Safety participation was also not significantly associated with any of the workplace violence variables. However, depressive symptoms and sleep disruption were associated with some of the workplace violence variables. Care providers who reported more *disruptive behavior* and more *witnessing disruptive behavior* also reported more depressive symptoms and more sleep disruption. These findings suggest the important role of disruptive behavior as a stressor in psychiatric care providers' mental and physical health outcomes.

Table 14. ***Family Processes: Work-family conflict, partner support, relationship satisfaction and life satisfaction.***

	Family Outcomes			
Workplace Violence Predictors Step 2	**Work-Family Conflict *N* =238**	**Partner Support *N* = 172**	**Relationship Satisfaction *N* =167**	**Life Satisfaction *N* =234**
	β	β	β	β
Patient Assault	.02	.01	-.00	-.06
Variance explained (R^2)	.03	.08	.05	.06
Disruptive Behavior	**.34*** **	-.02	-.03	**-.29** **
Variance explained (R^2)	.10	.08	.05	.08
Witnessing Disruptive Behavior	**.13** **	.02	.04	**-.10* **
Variance explained (R^2)	.07	.08	.05	.07

Note: All 12 analyses are univariate with step 1 control variables of: age, gender, relationship status, children at home, and weekly hours worked. β = standardized regression weight.
*p < .05, **p < .01, ***p < .001.

Family Outcomes

Work-to-family conflict, partner support, relationship satisfaction and life satisfaction. We found no effects for reports of partner support or relationship satisfaction in relation to the workplace violence variables. However, work-to-family conflict and life satisfaction were associated with the workplace violence variables of *disruptive behavior* and *witnessing disruptive behavior*. Direct care providers who reported more disruptive behavior and more witnessing disruptive behavior also reported more work-to-family conflict and lower life satisfaction. Again, these findings suggest that disruptive behavior is a powerful stressor that has a spillover influence on psychiatric care providers' family and personal life outside of work.

Table 15. ***Work Outcomes: Job dissatisfaction, and burnout – exhaustion and cynicism.***

	Work Outcomes		
Workplace Violence Predictors Step 2	**Job Dissatisfaction *N*=234**	**Burnout Exhaustion *N*=232**	**Burnout Cynicism *N* =232**
	β	β	B
Patient Assault	.04	-.08	**.12****
Variance explained (R^2)	.05	.04	.07
Disruptive Behavior	**.45*****	**.88*****	**.66*****
Variance explained (R^2)	.18	.25	.19
Witness Disruptive Behavior	**.12****	**.33*****	**.22*****
Variance explained (R^2)	.07	.14	.09

Note: All 9 analyses are univariate with step 1 control variables of: education, position tenure, shift, number of ward pulls, staff position, and contact with supervisor. β = standardized regression weight.
*$p < .05$, **$p < .01$, ***$p < .001$.

Work Outcomes

Job dissatisfaction and burnout – exhaustion and cynicism. We found no effects for reports of job satisfaction or burnout - exhaustion in relation to *patient assault*. However, *burnout – cynicism* was significantly associated with experiencing an assault in the past 2 years. All work outcomes were significantly associated with *disruptive behavior* and *witnessing disruptive behavior*. Care providers who reported more disruptive behavior and more witnessing disruptive behavior also reported greater job dissatisfaction, higher levels of burnout – exhaustion and cynicism. As with other care provider outcomes, our findings indicate the significant role of *disruptive behavior* and *witnessing disruptive behavior* in care providers' reports of job dissatisfaction and burnout.

Table 16. ***Work Outcomes: Turnover intentions, patient quality of care and satisfaction with patient Care quality.***

	Work Outcomes		
Workplace Violence Predictors Step 2	**Turnover Intentions *N*=232**	**Patient Quality of Care *N* =234**	**Satisfaction with Patient Care *N* =231**
	β	β	β
Patient Assault	.06	-.02	-.04
Variance explained (R^2)	.11	.06	.04
Disruptive Behavior	**.30****	**-.50*****	**-.21****
Variance explained (R^2)	.14	.23	.06
Witnessing Disruptive Behavior	**.11***	**-.15*****	.00
Variance explained (R^2)	.12	.11	.03

Note: All 9 analyses are univariate with step 1 control variables of: education, position tenure, shift, number of ward pulls, staff position, and contact with supervisor. β = standardized regression weight.
**p* < .05, ***p* < .01, ****p* < .001.

Work Outcomes

Turnover intentions, patient care quality and satisfaction with patient care. We found no effects for reports of turnover intentions, patient care quality, or satisfaction with patient care in relation to our measure of *patient assaults*. However, turnover intentions, patient quality of care, and satisfaction with patient care were all associated with *disruptive behavior*. Care providers who reported experiencing more disruptive behavior also reported greater turnover intentions, lower patient quality of care, and lower satisfaction with patient care. Additionally, *witnessing disruptive behavior* was significantly associated with high turnover intentions and low patient quality of care scores. These findings add to an emerging pattern in our data that provide evidence regarding the strong impact of disruptive behavior and witnessing disruptive behavior on psychiatric care providers' health and work experiences.

Aim 2 Conclusions

In summary, we list below the variables in the analyses and significant relationships with workplace context resources and health, family, and work outcomes. We bolded the relationships with patient assaults and disruptive behavior because these relationships are especially important to understand for our next phase in the study, to develop an intervention in the form of a training for supervisors and care providers that targets building key organizational resources that result in reduced workplace violence and increased care provider well-being.

Work Context Resources:

High staffing adequacy is related to:

- high general health
- low physical discomfort-pain
- low burnout – exhaustion
- high patient quality of care
- high satisfaction with patient quality of care
- **low patient assaults**

High schedule control is related to:

- high patient quality of care
- high life satisfaction

High schedule satisfaction is related to:

- low depressive symptoms
- low sleep disruption
- low work-family conflict
- high life satisfaction
- low job dissatisfaction
- low burnout – exhaustion

High Violence Prevention climate is related to:

- low job dissatisfaction
- low burnout – cynicism
- high patient quality of care
- high satisfaction with patient quality of care

High Organizational Support is related to:

- low physical symptoms
- low depressive symptoms
- low sleep disruption
- low work-family conflict
- high life satisfaction
- low job dissatisfaction

High Family Supervisor Supportive Behaviors are related to:

- low burnout – exhaustion

- high patient quality of care
- **low disruptive behavior**
- **low witnessing disruptive behavior**

High Coworker Support is related to:

- low depressive symptoms
- high safety participation
- high life satisfaction
- low job dissatisfaction
- low burnout – exhaustion
- low turnover intentions
- **low patient assault**
- **low disruptive behavior**

Workplace Violence Demands and Work, Family and Health Outcomes

High patient assaults are related to:

- high physical injury
- high burnout - cynicism

High disruptive behavior is related to:

- high physical discomfort-pain
- high physical symptoms
- high physical injury
- high depressive symptoms
- high sleep disruption
- high work-family conflict
- low life satisfaction
- high job dissatisfaction
- high burnout – exhaustion
- high burnout – cynicism
- high turnover intentions
- low patient quality of care

High witnessing disruptive behavior is related to:

- high physical discomfort-pain
- high physical symptoms
- high physical injury
- high depressive symptoms
- high sleep disruption
- high work-family conflict
- low life satisfaction
- high job dissatisfaction
- high burnout – exhaustion
- high burnout – cynicism
- high turnover intentions
- low patient quality of care

Overall, we found a pattern of results from the organizational context that demonstrates the need to build resources through increasing *staffing adequacy* and schedule satisfaction. We repeat here that this is a complex issue that the organization must prioritize for resolution.

We also want to highlight *family supportive supervisor behaviors* and *coworker support* as points of intervention because these variables were related to workplace violence in analyses that compared them to other organizational resource variables. Here, we argue that those employees with higher levels of workplace violence have a greater psychological need for support, especially support that addresses the employee's ability to integrate work and family demands while contending with the psychological and physical demands of patient assaults and disruptive behavior. In addition to protecting employees from the negative impact of assault and disruptive behavior, the resource of family supportive supervision affords direct care providers a means to replenish depleted energy related to recovering from assault and injury or stress related to disruptive behavior.

We were surprised to find very few significant patient assault relationships in our survey data. In talking with the Western State Hospital Intervention Development Team that we have been meeting with since mid-March this year, we learned that care providers understand that severely mentally ill patients sometimes become assaultive because of their illness, and those who work in the mental field adjust to this stressor over time. In addition, patient assaults occur less frequently, whereas disruptive behavior and witnessing such behavior may occur on a daily basis and be experienced as quite stressful. Care providers don't expect abusive behavior from their colleagues and it can be difficult to defend against.

This is not to minimize that assaults can be serious and result in great psychological and physical harm and are considered a strong stressor for care providers. We pay close attention to the results for patient assaults for this reason and emphasize those relationships such as the relationship with low staffing adequacy that impact this highly stressful form of workplace violence.

General Conclusions and Recommendations

The goal of this study is to advance innovative approaches to developing collaborative, organizational, and systems-oriented interventions aimed at preventing workplace violence and improving direct care provider safety and health at work. This study has provided the empirical evidence necessary to challenge existing paradigms of workplace violence prevention that focus primarily on training and modifying the physical environment. Interventions we propose to develop in collaboration with Western State Hospital will target employee schedule control, and supervisor and coworker support for safety and work-family integration.

The recommendations that follow are made in light of this research approach and are based on the empirical evidence from the research presented in this report.

Recommendation 1:

Increase Staffing Adequacy

Low staffing adequacy was related to many outcomes, most importantly, increased patient assaults, but also health and work outcomes. Moreover, both measures of patient quality care were linked to staffing adequacy making it a critical organizational resource to target. The qualitative findings support addressing

staffing issues as well and begin to clarify the complex dynamics of high disruptive behavior, low morale, high turnover, unscheduled absences, and difficulties filling vacancies – all factors that reduce staffing adequacy and stability and increase risk of violence for patients and care providers. Specifically:

- Research and establish an effective float pool of permanent care provider staff
- Use the float pool to increase staffing adequacy, increase schedule flexibility, and address unscheduled absences
- Conduct further research to untangle the complexity of factors that contribute to low staffing adequacy

Recommendation 2:

Address Disruptive Behavior

High levels of disruptive behavior and witnessing disruptive behavior are powerful work stressors at WSH that are taking a toll on the health, well-being, and morale of care providers and the organization's management and union leaders. Patient and care provider safety are at risk, as well as, patient quality of care. Disruptive behavior is directly related to many health, family, and work outcomes, and occurs among care providers, management, and union representatives according to our qualitative data. Stopping disruptive behavior should be a major goal for Western State Hospital. Specifically:

- The Patient Safety Committee should focus on developing a program to resolve disruptive behavior as a primary objective. Enlist support from all hospital stake holders at all organizational levels and disciplines
- Research interventions for disruptive behavior and adopt and implement an intervention model hospital-wide, including strong and clearly delineated policies, procedures, and practices
- Empower and educate managers to advocate for and role model respectful behavior to implement policies, and to act on reports of disruptive behavior according to a planned intervention model
- Educate care providers on their role as coworkers and the health and well-being benefits of respect and support vs. the negative effects of disruptive behavior on patient quality of care and patient and staff safety

Recommendation 3:

Seek to achieve cultures of Work-Life Engagement, Flexibility, and Integration

Cultures in which managers/supervisors are knowledgeable about flexible and supportive practices and promote and communicate them effectively also promote employee engagement and well-being. Family supportive supervisors have employees who report higher levels of job satisfaction, better physical health, lower turnover intentions and higher performance (Hammer et al., 2009). WSH employees that have family supportive supervisors reported experiencing lower patient assaults, disruptive behavior, burnout-exhaustion, and higher patient quality of care. This particular constellation of research evidence provides strong support for intervening in the area of work-life integration. Managers and supervisors have a critical role as the voice of the organization. They translate the culture to employees, role model effective behaviors, and enact organizational policies. They are the communication link between DSHS management and upper level management and care providers working with patients on the wards. Specifically:

- Empower and educate managers to use existing schedule flexibility policies and to use the new float pool as a work-life balance tool when needed – create new schedule flexibility policies as needed
- Identify best practices and leading supervisors who are adept at managing work-life effectively as a way to focus on local successes
- Include employee satisfaction with leader support of work-life balance on performance appraisals or annual surveys
- Continue to work with SHARP researchers to develop the proposed intervention that addresses supervisor support for workplace violence prevention, schedule flexibility, supervisor and coworker support, and work-family integration

We conclude by mentioning two recurrent themes from this research. First, our findings highlight the importance of positive organizational resources for care providers working with the demands and prominent stressors of patient assaults and disruptive behavior. When high, these resources ameliorate the negative effects of workplace violence stress and replenish care providers' energy to work with patients therapeutically and provide high patient quality of care in a safe environment – safe for patients and care providers. Second, the data reflect a clear relationship between workplace violence, particularly disruptive behavior, and poor care provider health, family, and work outcomes. Thus, we focused our recommendations on three key resources to assist care providers dealing with workplace violence stressors: increase staffing adequacy and schedule flexibility, address disruptive behavior, and achieve a culture of work-life engagement.

Study Strengths and Limitations

An important strength of the current study is the examination of multiple different contexts, including work, family, and well-being. The current study with Western State Hospital addresses a gap in the current literature surrounding violence prevention programs by using a broad and systemic approach towards addressing both the organization of work, violence prevention, and work-life integration (Wassell, 2009). An additional strength of this study is our use of previously validated measures of nearly every scale included in our analyses; scales for organizational contextual resources, disruptive behavior, and health, family and work outcomes. Other strengths of the study include a study design that was developed from prior qualitative research on mirrored topics (Yragui et al., 2009) and the employment of multiple sources of data (interviews, focus groups, and survey responses) in study qualitative and quantitative analyses.

Self-report measures were used in a cross-sectional design which may lead to issues regarding respondent consistency effects or response styles, transient mood states, and spurious results due to common method bias - where the observed associations between variable measures may be affected by other individual and external factors (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Moreover, the cross-sectional design impacts our ability to draw definitive conclusions about causality of work context resources and workplace violence and disruptive behavior relationships and relationships between workplace violence, disruptive behavior and health, family, and work outcomes.

We emphasize that self-report measures are the most appropriate for collecting data on targets' perspectives of bullying and violence at work (Goffin & Gellatly, 2001). There is value in reporting these

perceptions. Understanding care provider perceptions of organizational resources and workplace violence stressors is crucial for identifying the contextual experience of direct care providers in the early stages of a program of research within an organization.

Obvious advantages of self-report are that there may be no other sources for obtaining information and if we are interested in perceptions, we do want to ask the participant to self-report. This is an important first step in building research knowledge in an organization (Podsakoff & Organ, 1986). Many work stress researchers have called on fellow researchers to create study designs that incorporate multiple sources of data, including objective administrative data from the organization archives. We acknowledge that objective data may also have measurement inconsistencies. Even so, in future studies that focus on Western State Hospital, collecting administrative data on objective outcomes such as unscheduled absences and actual turnover would strengthen the study design.

As previously stated, the response rate of this study was relatively low, with approximately 19.76% of all eligible WSH direct care providers participating in the study - indicating the possibility of non-response bias that may threaten the external validity of the findings (Rogelberg & Stanton, 2007). The average response rate in organizational research is 35.7% (Baruch & Brooks, 2008). In recent years, research has been conducted that challenges prior thinking about low response rate and non-response bias. In one study researchers compared survey results using the Pew Research Center's methodology (5-day study with a 25% response rate) with results from a more rigorous survey administered over a much longer time period with a 50% response rate(Keeter, Kennedy, Dimock, Best, & Craighill, 2006). The comparison showed that the two surveys were statistically indistinguishable in their results. Even so, we have proposed conducting additional survey research in 2013 at WSH to increase this response rate and ensure greater care provider participation. In addition, we believe it would be of great benefit to WSH to target an examination of the complex factors that contribute to problems with staffing adequacy, schedule flexibility, employee retention with organizational support resources and workplace violence and disruptive behavior.

Future Work: Developing a Positive Occupational Health Psychology Intervention

Further research needs to be conducted to provide an in-depth examination of the multiple factors that influence staffing and its effects on patient and staff safety. The staffing challenges faced by psychiatric care providers, particularly nurses, are complex. General measures of work stressors cannot capture this complexity. Specific measures that capture detailed shift events and staffing patterns such as unscheduled absences, changes in patient acuity, pulling staff from other wards are needed rather than general measures of staffing perceptions.

Future work will be ongoing for the current WWSH project at Western State Hospital. We plan to conduct additional analyses focusing on moderating and mediating effects of individual and organizational resource variables and anticipate further reporting on additional findings from the study. Mostly, we look forward to continuing our work with a very dedicated and engaged Intervention Development Team as we go forward to develop the proposed intervention.

References

Aiken, L. H., Clarke, S. P., & Sloane, D. M. (2002). Hospital staffing, organization, and quality of care: Cross-national findings. *International Journal for Quality in Health Care, 14,* 5-13.

Aiken, L. H., Clarke, S. P., Sloane, D. M., Lake, E. T., & Cheney, T. (2008). Effects of hospital care environment on patient mortality and nurse outcomes. *Journal of Nursing Administration, 38,* 223-229.

Aiken, L. H., Clarke, S. P., Sloane, D. M., Sochalski, J, Silber, J. H., (2002). Hospital nurse staffing and patient mortality, burnout, job dissatisfaction, and patient mortality, *Journal of the American Medical Association, 288*, 1987-1993.

Ala-Mursula, L., Vahtera, J., Pentti, J., & Kivimaki, M. (2004). Effect of employee worktime control on health: A prospective cohort study. *Occupational Environmental Medicine, 61*, 254-261.

Ala-Mursula, L., Vahtera, J., Kivimaki, M., Kevin, M.V., & Pentti, J. (2002). Employee control over working times: Associations with subjective health and sickness absences, *Journal of Epidemiology & Community Health. 56*, 272-278.

Alexander, J. A., Lichenstein, R., Oh, H. J., & Ulman, E. (1998). A causal model of voluntary turnover among nursing personnel in long-term psychiatric settings. *Research in Nursing & Health, 21,* 415-427.

Allen, T. D. (2001). Family-supportive work environments: The role of organizational perceptions. *Journal of Vocational Behavior, 58*, 414–435

Arnetz, J. E., Aranyos, D., Ager, J., & Upfal, M. J. (2011). Worker-on-worker violence among hospital employees. *International Journal for Occupational and Environmental Health, 17*, *328-335.*

Ashford, S.J., Lee, C. & Bobko, P. (1989). Content, causes, and consequences of job insecurity: A theory-based measure and substantive test. *Academy of Management Journal*, 32(4), 803-829.

Baggs, J. G., Schmitt, M. H., Mushlin, A. I., Mitchell, P. H., Eldredge, D. H., Oakes, D., & Hutson, A. D. (1999). Association between nurse-physician collaboration and patient outcomes in three intensive care units. *Critical Care Medicine, 27*, 1991-1998.

Bakker, A. B. & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology, 22,* 309-328.

Bakker, A., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement, particularly when job demands are high, *Journal of Educational Psychology. 99*, 274 - 284.

Barnett, R. C., & Brennan, R. T. (1995). The relationship between job experiences and psychological distress: A structural equation approach, *Journal of Organizational Behavior.* 16, 259-276.

Barrera, M., Jr. (1986). Distinctions between social support concepts, measures, and models. *American Journal of Community Psychology,* 14, 413-445.

Baruch, Y., & Brooks, C. H. (2008). Survey response rate levels and trends in organizational research. *Human Relations, 62*(8), 1139-1160.

Belkic, K., Schnall, P., Landsbergis, P, & Baker, D. (2000). The workplace and cardiovascular health: conclusions and thoughts for a future agenda. *Occupational Medicine*, 15, 307-321.

Belkic, K. L., Landsbergis, P. A., Schnall P. L., & Baker, D. (2004). Is job strain a major source of cardiovascular disease risk? *Scandinavian Journal of Work, Environment, and Health,* 30, 85-128.

Bensley, L., Nelson, N., Kaufman, J., Silverstein, B., Kalat, J., & Shields, J. W. (1997). Injuries due to assaults on psychiatric hospital employees in Washington State. *American Journal of Industrial Medicine,* 31, 92-9.

Bliese, P. D. & Jex, S. M. (2002). Incorporating a multilevel perspective into occupational stress research: theoretical, methodological and practical implications. *Journal of Occupational Health Psychology* 7, 265-276.

Bosma, H., Peter, R., Siegrist, J., & Marmot, M. (1998). Two alternative job stress models and the risk of coronary heart disease. *American Journal of Public Health,* 88, 68-74.

Bowling, N. A. & Beehr, T. A. (2006). Workplace harassment from the victim's perspective: A theoretical model and meta-analysis. *Journal of Applied Psychology, 91,* 998-1012.

Brim, O. G., Ryff, C. D., & Kessler, R. C. (Eds.) (2004). *How healthy are we? A national study of well-being at midlife.* Chicago: The University of Chicago Press.

Burgard, S. A. & Ailshire, J. A. (2009). Putting work to bed: stressful experiences on the job and sleep quality. *Journal of Health & Social Behavior, 50,* 476-492.

Buysse, D. J., Reynolds, III, F. F., Monk, T. H., Berman, S. R. & Kupfer, D. J. (1989). The Sleep Quality Index: A new instrument for psychiatric practice and research. *Journal of Psychiatric Research*, 28, 193-213.

Byron, K. (2005). A meta-analytic review of work-family conflict and its antecedents. *Journal of Vocational Behavior, 67,* 169-198.

Cammann, C., Fichman, M., Jenkins, G. D., & Klesh, J. R. (1983). Assessing the attitudes and perceptions of organizational members. In S.E. Seashore, E.E. Lawler, P.H. Mirvis & C. Cammann (Eds.), *Assessing organizational change: A guide to methods, measures and practices* (pp. 71-138). New York: Wiley.

Caza, B. B. & Cortina, L. M. (2007). From insult to injury: Explaining the impact of incivility. *Basic and Applied Social Psychology,* 29, 335-350.

Chang, E. M., Hancock, K. M., Johnson, A., Daly, J., & Jackson, D. (2005). Role stress in nurses: review of related factors and strategies for moving forward. *Nursing Health Science,* 7, 57-65.

Chapman, R., Styles, I., Perry L. & Combs, S. (2010). Nurses' experience of adjusting to workplace violence: a theory of adaptation. *International Journal of Mental Health Nursing*, *19*, 186-94.

Chiaburu, D. S. & Harrison, D. A. (2008). Do peers make the place? Conceptual synthesis and meta-analysis of coworker effects on perceptions, attitudes, OCBs, and performance. *Journal of Applied Psychology, 93,* 1082-1103.

Choi, S. W., Peek-Asa, C., Sprince, N. L., Rautiainen, R. H., Flamme, G. A., Whitten, P. S., & Zwerling, C. (2006). Sleep quantity and quality as a predictor of injuries in a rural population. *American Journal of Emergency Medicine*, *24*, 189-96.

Choo, A. S., Linderman, K. & Schroeder, R. (2007). Method and context perspectives on learning and knowledge creation in quality management. *Journal of Operations Management*, *25*, 918-931.

Cohen-Charash, Y., & Spector, P. E. (2001). The role of justice in organizations: A meta-analysis. *Organizational Behavior and Human Decision Processes, 86,* 278-321.

Cohen, S. & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98,* 310-357.

Cortina, L. M., Magley, V. J., Williams, J. H., & Langhout, R. D. (2001). Incivility at the workplace: Incidence and impact. *Journal of Occupational Health Psychology*, *6*, 64–80.

Costa, G., Sartori, S., & Akerstedt, T. (2006). Influence of flexibility and variability of working hours on health and well-being. *Chronobiology International*, *23*, 1125-1137.

Dalgard, O. S., Sorensen, T., Sandanger, I., Nygard, J. F., Svensson, E., & Reas, D. L. (2009). Job demands, job control, and mental health in an 11-year follow-up study: Normal and reversed relationships. *Work & Stress*, *23*, 284-296.

De Raeve, L., Jansen, N. W. H., van den Brandt, P. A., Vasse, R., & Kant I. J. (2008). Interpersonal conflicts at work as a predictor of self-reported health outcomes and occupational mobility. *Journal of Occupational and Environmental Medicine, 66*, 16-22.

Deery, S., Walsh, J., & Guest, D. (2011). Workplace aggression: The effects of harassment on job burnout and turnover intentions. *Work, Employment, and Society, 25,* 742-759.

de Lange, A. H., Taris, T. W., Kompier, M. A., Houtman, I. L., & Bongers, P. M. (2002). Effects of stable and changing demand-control histories on worker health. *Scandinavian Journal of Work, Environment, and Health*, *28*, 94-108.

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, *86*, 499-512.

di Martino, V. (2003). Relationship between work stress and workplace violence in the health sector. Geneva: ILO/ICN/WHO/PSI Joint Programme in Workplace Violence in the Health Sector.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*, 71-75.

Dollard, M. F. & McTernan, W. (2011). Psychosocial safety climate: A multilevel theory of work stress in the health and community service sector. *Epidemiology and Psychiatric Sciences*, *20*, 287-293.

Donaldson, S. I. & Grant-Vallone, E. J. (2002). Understanding self-report bias in organizational behavior research. *Journal of Business and Psychology*, *17*(2), 245-259.

Duhart, D. T. (2001). Violence in the Workplace, 1993-99. (U.S. DOJ Publication No. 190076). Washington, DC: U.S. Government Printing Office.

Einarsen, S., Hoel, H., & Notelaers, G. (2009). Measuring exposure to bullying and harassment at work: Validity, factor structure, and psychometric properties of the Negative Acts Questionnaire – Revised. *Work & Stress*, *23*, 24-44.

Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology*, 71, 500-507

Eisenberger, R., Cummings, J., Armeli, S., & Lynch, P. (1997). Perceived organizational support, discretionary treatment, and job satisfaction. *Journal of Applied Psychology*, 82, 812-820.

Estryn-Behar, M., van der Heijden, B., Camerino, D., Fry, C., Le Nezet, O., Conway, & Hasselhorn, H. (2008). Violence risks in nursing—results from the European 'NEXT' study. *Occupational Medicine, 58,* 107-114.

Evans, S., Huxley, P., Gately, C., Webber, M., Mears, A., Pajak, S., Medina, J., Kendall, T., & Katona, C. (2006). Mental health, burnout and job satisfaction among mental health social workers in England and Wales. *British Journal of Psychiatry*, *188*, 75-80.

Fagin, L., Carson, J., Leary, J., De Villiers, N., Bartlett, H., O'Malley, P., West, M., McElfatrick, S., & Brown, D. (1996). Stress, coping and burnout in mental health nurses: findings from three research studies. *International Journal of Social Psychiatry*, *42*, 102-11.

Farrell, G.A., Bobrowski, C., & Bobrowski, P. (2006). Scoping workplace aggression in nursing: findings from an Australian study. *Journal of Advanced Nursing*, *55*, 778-87.

Findorff, M. J., McGovern, P. M., Wall, M., Gerberich, S. G., & Alexander, B. (2004). Risk factors for work related violence in a health care organization. *Injury Prevention, 10,* 296-302.

Frone, M. R., Russell, M., & Cooper, M. L. (1997). Relation of work-family conflict to health outcomes: A four-year longitudinal study of employed parents. *Journal of Occupational and Organizational Psychology, 70,* 325-335.

Ganster, D. C. (1988). Improving measures of work control in occupational stress research. In J. J. Hurrell, L. R. Murphy, S. L. Sauter, & C. L. Cooper (Eds.), *Occupational stress: Issues and developments in research* (pp. 88-99). New York: Taylor & Francis.

Gareis, K. C., Barnett, R. C., & Brennan, R. T. (2005). Individual and crossover effects of work schedule fit: A within-couple analysis. *Journal of Marriage and Family*, *65*, 1041-1054.

Gerberich, S. G., Church, T. R., McGovern, P. M., Hansen, H. E., Nachreiner, N. M, Geisser, M. S., Ryan, A. D., Mongin, S. J., & Watt, G. D. (2004). An epidemiological study of the magnitude and consequences of work related violence: The Minnesota Nurses' Study. *Occupational Environmental Medicine*, *61*, 495-503.

Goffin, R. D., & Gellatly, I. R. (2001). A multi-rater assessment of organizational commitment: Are self-report measures biased? *Journal of Organizational Behavior, 22*, 437-451.

Greenberger, E., Goldberg, W. A., Hamill, S., O'Neil, R., & Payne, C. (1989). Contributions of a supportive work environment parents' well-being and orientation to work. *American Journal of Community Psychology*, *17*, 755−783.

Greenhaus, J. H., Ziegert, J. C., & Allen, T. D. (2011). When family-supportive supervision matters: Relations between multiple sources of support and work-family balance. *Journal of Vocational Behavior, 80,* 266-275.

Griffin, M. A. & Neal, A. (2000). Perceptions of safety at work: A framework for linking safety climate to safety performance, knowledge and motivation. *Journal of Occupational Health Psychology*, *5*, 347-358.

Grzywacz, J. G., Carlson, D. S., & Shulkin, S. (2008). Schedule flexibility and stress: Linking formal flexible arrangements and perceived flexibility to employee health. *Community, Work & Family*, *11*, 199-214.

Guidroz, A. M., Wang, M. and Perez, L. M. (2012), Developing a Model of Source-specific Interpersonal Conflict in Health Care. *Stress and Health*, *28*, 69–79.

Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance, 16,* 250-279.

Hammer, L. B., Kossek, E. E., Yragui, N. L., Bodner, T. E., & Hanson, G. C. (2009). Development and validation of a multidimensional measure of family supportive supervisor behaviors (FSSB). *Journal of Management, 35,* 837-856.

Hammer, L. B., Kossek, E. E., Anger, W. K., Bodner, T. B., & Zimmerman, K. L. (2011). Clarifying work-family intervention processes: The roles of work-family conflict and family-supportive supervisor behaviors. *Journal of Applied Psychology, 96*, 134-150.

Hanrahan, N. P. & Aiken, L. H. (2008). Psychiatric nurse reports on the quality of psychiatric care in general hospitals. *Quality Management in Health Care, 17,* 210-217.

Hansen, M. A., Hogh, A., Persson, R., Karlson, B., Garde, H. A., & Orbaek, P. (2006). Bullying at work: Health outcomes, and physiological stress response. *Journal of Psychosomatic Research, 60*, 63-72.

Henderson, A.D. (2003). Nurses and workplace violence: nurses' experiences of verbal and physical abuse at work. *Nursing Leadership (Toronto, Ontario)*, *16*, 82-98.

Hinshaw, A. S. & Atwood, J. R. (1984). Nursing staff turnover, stress and satisfaction: Models, measures, and management. *Annual Review of Nursing Research*, *1*, 133-153.

Hodgson, M. J., Reed R., Craig, T., Murphy F., Lehmann, L., Belton, L. & Warren, N. (2004). Violence in healthcare facilities: lessons from the Veterans Health Administration. *Journal of Occupational Environmental Medicine*, *46,* 1158-65.

Hom, P. W., Griffeth, R. W., & Sellaro, C. L. (1984). The validity of Mobley's (1977) model of employee turnover. *Organizational Behavior and Human Performance*, *34,* 141-174.

Hopkins, K. (1997). Influences on formal and informal supervisor intervention with troubled workers. *Employee Assistance Quarterly, 13*, 33-54.

Ilies, R., Schwind, K. M., & Wagner, D. T., Johnson, M. D., DeRue, D. S., & Ilgen, D. R. (2007). When can employees have a family life? The effects of daily workload and affect on work-family conflict and social behaviors at home. *Journal of Applied Psychology, 92,* 1368-1379.

Institute of Medicine. 1999. *To err is human: Building a safer health system*. National Academy Press, Washington, D. C.

Islam S. I., Edla S. R., Mujuru P., Doyle E. J., & Ducatman A. M. (2003). Risk Factors for Physical Assault: State - Managed Workers' Compensation Experience. *American Journal of Preventive Medicine, 25*, 31-37.

Ito, H., Eisen, S. V., Sederer, L. I., Yamada, O., & Tachimori, H. (2001). Factors affecting psychiatric nurses' intention to leave their current job. *Psychiatric Services, 52,* 232-234.

Jackson, D., Clare, J., & Mannix, J. (2002). Who would want to be a nurse? Violence in the workplace – a factor in recruitment and retention. *Journal of Nursing Management*, *10*, 13-20.

Johnson, J. V. & Hall, E. M. (1988). Job strain, work place social support, and cardiovascular disease: A cross-sectional study of a random sample of the Swedish working population. *American Journal of Public Health*, *78*, 1336-1342.

JCAHO, Joint Commission on Accreditation of Healthcare Organizations. (2008). *Sentinel Event Alert: Behaviors that Undermine a Culture of Safety*, 40.

Joyce, K., Pabayo, R., Critchley, J.A., & Bambra, C. (2010). Flexible working conditions and their effects on employee health and wellbeing. *Cochrane Database Systems Review*, *17*, CD008009.

Karasek, R.A. (1979). Job Demands, job control and mental strain: Implications for job redesign. *Administrative Science Quarterly*, *24*, 285-308.

Karasek, R. A., Baker, D., Marxer, F., Ahlbom, A., & Theorell, T. (1981). Job decision latitude, job demands and cardiovascular disease: A prospective study of Swedish men. *American Journal of Public Health*, *71*, 694-705.

Karasek, R. A., & Theorell, T. (1990). *Healthy work: stress, productivity, and the reconstruction of working life* (pp. 89-103). New York, NY: Basic Books.

Keeter, S., Kennedy, C., Dimock, M., Best, J., & Craighill, P. (2006). Gauging the impact of growing nonresponse on estimates from a national RDD telephone survey. *Public Opinion Quarterly, 70*(5), 759-779.

Kessler, S. R., Spector, P. E., Change, C., & Parr, A. D. (2008). Organizational violence and aggression: Development of a three-factor violence climate survey. *Work & Stress*, *22*, 108-124.

Kindy, D., Petersen, S., & Parkhurst, D. (2005). Perilous work: nurses' experiences in psychiatric units with high risks of assault. *Archive of Psychiatric Nursing*, 19, 169-75.

Kivimaki, M., Virtanen, M., Vartia, M., Elovainio, M., Vahtera, J., & Keltikangas-Jarvinen, L. (2003). Workplace bullying and the risk of cardiovascular disease and depression. *Occupational Environmental Medicine*, *60*, 779-783.

Kossek, E. E. & Ozeki, C. (1998). Work-family conflict, policies, and the job-life satisfaction relationship: A review and directions for organizational behavior human resources research. *Journal of Applied Psychology, 83*, 139-149.

Langlois, L. E., Shannon, H. S., Griffith, L., Haines, T., Cortina, M., & Geldart, S. (2007). The effects of workplace incivility on psychological distress and health. *Occupational Environmental Medicine*, *64*, e24.

Lanza, M.L., Zeiss, R.A., & Rierdan, J. (2006). Non-physical violence: a risk factor for physical violence in health care settings. *AAOHN J*. *54*, 397-402.

Lanza, M.L., Zeiss, R., Rierdan, J. (2006). Violence against psychiatric nurses: sensitive research as science and intervention. *Contemporary Nurse*, *21*, 71-84.

Lasalvia, A., Bonetto, C., Bertani, M., Bissoli, S., Cristofalo, D., Marrella, G., Ceccato, E., Cremonese, C., De Rossi, M., Lazzarotto, L., Marangon, V., Morandin, I., Zucchetto, M., Tansella, M., & Rugerri, M. (2009). Influence of perceived organizational factors on job burnout: survey of community mental health staff. *British Journal of Psychiatry*, *195*, 537-44.

Law, R., Dollard, M. F., Tuckey, M. R., & Dormann, C. (2011). Psychosocial safety climate as a lead indicator of workplace bullying and harassment, job resources, psychological health and employee engagement. *Accident Analysis and Prevention*, *43*, 1782-1793.

Leka, S., Hassard, J., & Yanagida, A. (2012) Investigating the impact of psychosocial risks and occupational stress on psychiatric hospital nurses' mental well-being in Japan. *Journal of Psychiatric and Mental Health Nursing*, *19*, 123-131.

Levenson, R. W. & Gottman, J. M. (1985). Physiological and affective predictors of change in relationship satisfaction. *Journal of Personality and Social Psychology, 49,* 85-94.

Lipsomb, J., McPhaul, K., Rosen, J., Brown J.G., Choi, M., Soeken, K., Vignola, V., Wagoner, D., Foley, J. & Porter, P. (2006). Violence prevention in the mental health setting: the New York state experience. *Canadian Journal of Nursing Research*, *38*, 96-117.

Lokke Vie, T., Glaso, L.,& Einarsen, S. (2011). Health outcomes and self-labeling as a victim of workplace bullying. *Journal of Psychosomatic Research*, *70*, 37-43.

Magee, C. A., Stefanic, N., Caputi, P., and Iverson, D. C. (2012). The association between job demands/control and health in employed parents: The mediating role of work-to-family interference and enhancement. *Journal of Occupational Health Psychology*, *17*, 196-205.

Maslach, C., & Jackson, S. E. (1981a). *The Maslach Burnout Inventory*. Palo Alto, CA: Consulting Psychologists Press.

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology, 52,* 397-422.

McHugh, M. D., Kelly, L. A., Sloane, D. M., & Aiken, L.H. (2011). Contradicting fears: California's nurse-to-patient mandate did not reduce the skill level of the nursing workforce in hospitals. *Health Affairs, 30,* 1299-1306.

Merecz, D., Drabek, M., & Moscicka, A. (2009). Aggression at the workplace—psychological consequences of abusive encounter with coworkers and clients. *International Journal of Occupational Medicine and Health, 22,* 243-260.

Miner, K. N., Settles, I. H., Pratt-Hyatt, J. S. & Brady, C. C. (2012). Experiencing incivility in organizations: The buffering effects of emotional and organizational support. *Journal of Applied Social Psychology, 42*, 340-372.

Moen, P., Kelly, E., & Huang, Q. (2008). Work, family and life-course fit: Does control over work time matter? *Journal of Vocational Behavior*, *73*, 414-425.

Moen, P., Kelly, E. L., & Tranby, E. (2011). Changing workplaces to reduce work-family conflict: Schedule control in a white-collar organization. *American Sociological Review*, *76*, 265-290.

Moen, P., Kelly, E. L., Tranby, E., & Huang, Q. (2011). Changing work, changing health: Can real work-time flexibility promote health behaviors and well-being? *Journal of Health and Social Behavior*, *52*, 404-429.

Moen, P., Kelly, E. L., & Hill, R. (2011). Does enhancing work-time control and flexibility reduce turnover? A naturally occurring experiment. *Social Problems*, *58*, 69-98.

Myers, D., Kriebel, D., Karasek, R., Punnett, L., & Wegman, D. (2005). Injuries and assaults in a long-term psychiatric care facility: an epidemiologic study. *AAOHN J.*, 53, 489-98.

Myers, D. J., Kriebel, D., Karasek, R., Punnett, L., & Wegman, D. H. (2007). The social distribution of risk at work: acute injuries and physical assaults among healthcare workers working in a long-term care facility. *Social Science Medicine*, *64*, 794-806.

National Institute for Occupational Safety and Health. (2002). *Violence. Occupational hazards in hospitals*. Retrieved August 2, 2002 from, http://www.cdc.gov/niosh/docs/2002-101/. Publication No. 2002-101.

Needleman, J., Buerhaus, P., Mattke, S., Stewart, M., & Zelevinsky, K. (2002). Nurse-staffing levels and the quality of care in hospitals. *New England Journal of Medicine, 346*, 1715-1722.

Niedhammer, I., et al. (2009). Workplace bullying and sleep disturbances: findings from a large scale cross-sectional survey in the French working population. *Sleep*, *32*, 1211-9.

Nijman, H., Bowers, L., Oud, N. & Jansen, G. (2005). Psychiatric nurses' experience with inpatient aggression. *Aggressive Behavior*, *31*, 217-227

O'Connell, B., Young, J., Brooks, J., Hutchings, J. & Lofthouse, J. (2000). Nurses' perceptions of the nature and frequency of aggression in general ward settings and high dependency areas. *Journal of Clinical Nursing*, *9*, 602-610.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003).Common method biases in behavioral research: A critical review of the literature and recommended remedies*. Journal of Applied Psychology*, *88*(5), 879-903.

Podsakoff, P. M. & Organ, D. W. (1986). Self reports in organizational research: Problems and prospects. *Journal of Management, 12*(4), 531-544.

Poster, E.C. & Ryan, J. (1994). A multiregional study of nurses' beliefs and attitudes about work safety and patient assault. *Hospital Community Psychiatry*, *45*, 1104-8.

Poghosyan, L., Clarke, S. P., Finlayson, & Aiken, L. H. (2010). Nurse burnout and quality of care: Cross-national investigation in six countries. *Research in Nursing & Health, 33,* 288-298.

Privitera, M., Weisman, R., Cerulli, C., Tu, X., & Groman, A., (2005). Violence toward mental health staff and safety in the work environment. *Occupational Medicine (London)*, *55*, 480-6.

Probst, T. M. (2003). Development and validation of the Job Security Index and the Job Security Satisfaction scale: A classical test theory and IRT approach. *Journal of Occupational and Organizational Psychology, 76,* 451-467.

Probst, T. M., & Brubaker, T. L. (2001). The effects of job insecurity on employee safety outcomes: Cross-sectional and longitudinal explorations. *Journal of Occupational Health Psychology, 6,* 139-159.

Quick, J.C. (1999). Occupational health psychology: Historical roots and future directions. *Health Psychology*, *18*, 82-88.

Rafferty, A. M., Clarke, S. P., Coles, J., Ball, J., James, P., McKee, M., & Aiken, L. H. (2007). Outcome of variation in hospital nurse staffing in English hospitals: Cross-sectional analysis of survey data and discharge records. *International Journal of Nursing Studies, 44,* 175-182.

Reisel, W. D., Probst, T. M., Chia, S., Maloles, C. M., Konig, C. J. (2010). The effects of job insecurity on job satisfaction, organizational citizenship behavior, deviant behavior, and negative emotions of employees. *International Studies of Management and Organization, 40,* 74-91.

Repetti, R. L. (1987). Individual and common components of the social environment at work and psychological well-being. *Journal of Personality & Social Psychology*, *52*, 710-20.

Rhoades, L., & Eisenberger, R. (2002). Perceived organizational support: A review of the literature. *Journal of Applied Psychology*, *87*, 698-714

Rogelberg, S. G., & Stanton, J. M. (2007). Understanding and dealing with organizational survey nonresponse: Introduction. *Organizational Research Methods, 10*, 195–209.

Rosenstein, A. H. (2002). Nurse-physician relationships: Impact on nurse satisfaction and retention. *American Journal of Nursing, 102*, 26-34.

Rosenstein, A. H. & O'Daniel, M. (2005). Disruptive behavior and clinical outcomes: perceptions of nurses and physicians. *American Journal of Nursing, 105*, 54-64.

Rosenstein, A. H., & O'Daniel M. (2008). A survey of the impact of disruptive behaviors and communication defects on patient safety. *Joint Commission Journal of Quality and Patient Safety, 34*, 464-471.

Rosskam, E. (2009). *Using participatory action research methodology to improve worker health. Unhealthy Work: Causes, consequences, and cures* (pp. 211-228). Baywood, New York.

Santor, D. & Coyne, J. C. (1997). Shortening the CES-D to improve its ability to detect cases of depression. *Psychological Assessment*, *9*, 233-43.

Sauter, S. L., & Hurrell, J. J. (1999). Occupational Health Psychology: Origins, content, and direction. *Professional Psychology: Research and Practice*, *30*, 117-122.

Sauter, S. L., Swanson, N. G., Waters, T., Hales, T., & Dunkin-Chadwick, R. (2005). Musculoskeletal discomfort surveys used at NIOSH. In N. Stanton, A. Hedge, K., Brookhuis, E. Salas, & H. Hendrick (Eds.), *Handbook of human factors and ergonomic methods (4-1 – 4-10)*. Boca Raton: CRC Press.

Schat, A., Kelloway, E. K. (2000). Effects of perceived control on the outcomes of workplace aggression and violence. *Journal of Occupational Health Psychology*, *5*, 386-402.

Schat, A. C. H. & Kelloway, E. K. (2003). Reducing the adverse consequences of workplace aggression and violence: The buffering effects of organizational support. *Journal of Occupational Health Psychology, 8,* 110-122.

Schaufeli, W. B., Leiter, M. P., Maslach, C., & Jackson, S. E. (1996). Maslach Burnout Inventory—General Survey. In C. Maslach, S. E. Jackson, & M. P. Leiter (Eds.), *The Maslach Burnout Inventory: Test manual* (3rd ed., pp. 22-26). Palo Alto, CA: Consulting Psychologists Press.

Schnall, P., Belkic, K., Landsbergis, P. & Baker, D. (2000). Why the workplace and cardiovascular disease? *Occupational Medicine*, 15, 1-6.

Schumm, W. R., Paff-Bergen, L. A., Hatch, R. C., Obiorah, F. C., Copeland, J. M., Meens, L. D., & Bugaighis, M. A. (1986). Concurrent and discriminant validity of the Kansas Marital Satisfaction Scale. *Journal of Marriage and Family, 48,* 381-387.

Shinn, M., Wong N. W., Simko P. A., & Ortiz-Torres, B. (1989). Promoting well-being of working parents: Coping, social support, and flexible schedules. *American Journal of Community Psychology*, *17*, 31–55.

Smith, P. M. & Bielecky, A. (2012). The impact of changes in job strain and its components on the risk of depression. *American Journal of Public Health*, *102*, 352-358.

Sofield, L. & Salmond, S.W. (2003). Workplace violence. A focus on verbal abuse and intent to leave the organization. *Orthopedic Nursing*, 22, 274-83.

Spector, P. E. (1994). Using self-report questionnaires in OB research: A comment on the use of a controversial method. *Journal of Organizational Behavior*, *15*, 385-392.

Spector, P. E. (2006). *Industrial and Organizational Psychology: Research and Practice.* Hoboken, NJ: Wiley.

Spector, P. E. (2006). Method variance in organizational research: Truth or urban legend? *Organizational Research Methods*, *9*(2), 221-232.

Spector, P. E., Coulter, M. L., Stockwell, H. G., & Matz, M. W. (2007). Perceived violence climate: A new construct and its relationship to workplace physical violence and verbal aggression, and their potential consequences. *Work & Stress, 21*, 117–130.

Strazdinz, L., D'Souza, R. M, L. Y., Lim, H. Broom, D. H. & Rodgers, B. (2004). Job strain, job insecurity and health: Rethinking the relationship. *Journal of Occupational Health Psychology*, *9*, 296-305.

Swanberg, J. E., McKechnie, S. P, Ojha, M. U., & James, J. B. (2011). Schedule control, supervisor support and work engagement: A winning combination for workers in hourly jobs? *Journal of Vocational Behavior*, *79*, 613-624.

Tepper, B. J. (2000). Consequences of abusive supervision. *Academy of Management Journal, 43,* 178-190.

The Joint Commission. (July 9, 2008). Behaviors that undermine a culture of safety. Sentinel Event Alert, 40. http://www.jointcommission.org/SentinelEvents/SentinelEventAlert/sea_40.htm [accessed 9/20/2010]

Theorell, T. (2003). To be able to exert control over one's own situation: A necessary condition for coping with stressors. In J. C. Quick & L. E. Tetrick (Eds.), *Handbook of Occupational Health Psychology* (pp. 201-219). Washington, DC, US: American Psychological Association.

Thomas, L. T. & Ganster, D. C. (1995). Impact of family-supportive work variables on work-family conflict and strain: A control perspective. *Journal of Applied Psychology*, *80*, 6–15.

Tucker, P. & Rutherford, C. (2005). Moderators of the relationship between long work hours and health. *Journal of Occupational Health Psychology*, *10*, 465-476.

Tucker, A. L., & Singer, S. J. (2009). Going through the motions: An empirical test of management involvement in process improvement. Working paper, Harvard Business School, Boston.

U.S. Department of Labor, Bureau of Labor Statistics. (2001). *Survey of occupational injuries and illnesses, 2000.* Available: www.bls.gov/iif/oshwc/osh/os/osnmr0013.pdf

U.S. Department of Labor & Occupational Safety and Health Administration. (1996). *Guidelines for preventing workplace violence for healthcare and social service workers.* (No. OSHA 3148). Washington, DC: U.S. Department of Labor & Occupational Safety and Health Administration.

van der Doef, M., & Maes, S. (1999). The Job Demand-Control(-Support) model and psychological well-being: A review of 20 years of empirical research. *Work and Stress*, *13*, 87-114.

Wachter, R. M. 2004. The end of the beginning: Patient safety five years after 'To Err is Human'. *Health Affairs* Web Exclusive(W4) 534545. http://www.creighton.edu/fileadmin/user/ipe/docs/Err_is_Human_11-2004.pdf. Accessed 8/7/12.

Walrath, J. M., Dang, D., & Nyberg, D. (2010). Hospital RNs' experiences with disruptive behavior: a qualitative study. *Journal of Nursing Care Quality*, *25*, 105-16.

Ware, J. E., Gandek, B., & the IQOLA Project Group. (1994). The SF-36® Health Survey: development and use in mental health research and the IQOLA Project. *International Journal of Mental Health*, *23*, 49-73.

Wassel, James T. (2009). Workplace violence intervention effectiveness: A systematic literature review. *Safety Science*, *47*, 1049-1055.

Weiss, H. M. (2002). Deconstructing job satisfaction: Separating evaluations, beliefs, and affective experiences. *Human Resource Management Review, 12*, 173-194.

White, R. A., (2006). Perceived stressors, coping strategies, and burnout pertaining to psychiatric nurse working on locked psychiatric units, University of Michigan, *Masters Theses and Doctoral Dissertations.* Paper 84.

Winstanley, S. & Whittington, R. (2004). Aggression towards health care staff in a UK general hospital: variation among professions and departments. *Journal of Clinical Nursing*, *13*, 3-10.

Winwood, P. C., Winefield, A. H., & Lushington, K. (2006). Work-related fatigue and recovery: the contribution of age, domestic responsibilities and shiftwork. *Journal of Advanced Nursing*, *56*, 438-49.

Wood, S., Stride, C., Threapleton, K., Wearn, E., Nolan, F., Osborn, D., Paul, M, & Johnson S. (2011). Demands, control, supportive relationships and well-being amongst British mental health workers. *Social Psychiatry Psychiatric Epidemiology*, *46*, 1055-1068.

Wright, P. M., George, J. M., Farnsworth, S. R., & McMahan, G. C. (1993). Productivity and extra-role behavior: The effects of goals and incentives on spontaneous helping. *Journal of Applied Psychology*, *78*, 374-381.

Yoon, J. & Lim, J. (1999). Organizational support in the workplace: The case of Korean hospital employees. *Human Relations*, *82*, 923-945.

Yildrim, D. & Aycan, Z. (2008). Nurses' work demands and work-family conflict: A questionnaire survey. *International Journal of Nursing Studies, 45,* 1366-1378.

Yragui, N. L., Foley, M., Silverstein, B., Smith, C. & Spann, C. (2009). [Workplace violence in state psychiatric hospitals]: Unpublished raw data.

Yragui, N. L., Foley, M., Silverstein, B., Smith, C. & Spann, C. (2009). *Western State Hospital Workplace Violence Project: Final Report to Washington DSHS Mental Health Division and Western State Hospital.* Unpublished Technical Report.

Zohar, D. (2002). Modifying supervisory practices to improve subunit safety: a leadership-based intervention model. *Journal of Applied Psychology*, 87, 156-63.

Appendix A. List of measures, reliabilities, references, and sample items

Measure	# of items	α	Reference	Sample item
Violence Prevention Climate [b] Practices and Response subscale	6	.88	Kessler, S.R., Spector, P.E., Change, C., & Parr, A.D. (2008). Organizational violence and aggression: Development of a three-factor violence climate survey. *Work & Stress*, 22(2), 108-124.	Management encourages employees to report physical violence.
Workplace Violence Solutions[a]	1	-	SHARP developed	What is the most important thing your hospital could do to make it easier for you to handle aggressive patients safely?
Organizational Support [b]	3	.92	Eisenberger, R., Cummings, J., Armeli, S., & Lynch, P. (1997). Perceived organizational support, discretionary treatment, and job satisfaction. *Journal of Applied Psychology*, 82, 812-820.	My hospital cares about my opinions.
Supervisor Support [b]	3	.82	Yoon, J. & Lim, J. (1999). Organizational support in the workplace: The case of Korean hospital employees. *Human Relations*, 82, 923-945.	My supervisor can be relied on when things get tough on my job.
Coworker Support [b]	3	.80	Yoon, J. & Lim, J. (1999). Organizational support in the workplace: The case of Korean hospital employees. *Human Relations*, 82, 923-945.	My coworker is willing to listen to my job-related problems.
Staffing Adequacy [b]	2	--	Aiken, L.H., Clarke, S.P., Sloane, D.M. (2002). Hospital Staffing, organization and quality of care: Cross-national findings. *International Journal for Quality in Healthcare*, 14(1), 5-13.	There are enough staff to get the work done.
Schedule Control[b]	5	.80	Aiken, L.H., Clarke, S.P., Sloane, D.M. (2002). Hospital staffing, organization and quality of care: Cross-national findings. International Journal for Quality in Healthcare, 14(1), 5-13.	If I have a problem with my schedule, my organization helps me address it.
Schedule Satisfaction	2	--	Gareis, K.C., Barnett, R.C., & Brennan, R.T. (2005). Individual and crossover effects of work schedule fit: A within-couple analysis. *Journal of Marriage and Family*, 65, 1041-1054.	Taking into account your current work hours and schedule, how well is your work arrangement working for you?
Job Security	6	.89	Probst, T. M. (2003). Development and validation of the Job Security Index and the Job Security Satisfaction scale: A classical test theory and IRT approach, Journal of Occupational & Organizational Psychology. 76, 451–467.	My job is secure.
Patient Assault [a]	1	--	SHARP developed	If assaulted by a patient, when did the assault occur?
Disruptive Behavior[a]	22	.93	Einarsen, S., Hoel, H., & Notelaers, G. (2009). Measuring exposure to bullying and harassment at work: Validity, factor structure, and psychometric properties of the Negative Acts Questionnaire – Revised. *Work &[b] Stress*, 23(1), 24-44.	Intimidating behaviors such as finger pointing, invasion of personal space, shoving, blocking your way.

Note. [a]Open-ended question; [b] Five-point agreement scale (1 = strongly disagree; 5 = strongly agree); [c] Five-point frequency scale (1 = never; 5 = daily); [d] Five-point frequency scale (1 = never; 5 = very often); [e]Five-point frequency scale (1 = rarely or none of the time; 5 = all of the time); [f] Five-point pain scale (1 = no pain; 5 = worst pain ever in your life); [g] Seven-point frequency scale (1 = never; 7 = every day); [h]Four-point scale (1 = very bad, 4 = very good).

Witnessing Disruptive Behavior [d]	1	--	Einarsen, S., Hoel, H., & Notelaers, G. (2009). Measuring exposure to bullying and harassment at work: Validity, factor structure, and psychometric properties of the Negative Acts Questionnaire – Revised. *Work & Stress*, 23(1), 24-44.	Have you witnessed a coworker being a target of workplace bullying based on the above definition?
General Health	1	--	Ware, J.E., Gandek, B., & the IQOLA Project Group. (1994). The SF-36® Health Survey: development and use in mental health research and the IQOLA Project. *International Journal of Mental Health*, 23(2), 49-73.	In general, would you say your health is poor, fair, good, very good, excellent…?
Depressive Symptoms [e]	10	.90	Santor, D. & Coyne, J.C. (1997). Shortening the CES-D to improve its ability to detect cases of depression. *Psychological Assessment*, 9, 233-43.	You were bothered by things that usually do not bother you
Physical Discomfort/Pain[f]	9	--	Sauter, S. L., Swanson, N. G., Waters, T., Hales, T., & Dunkin-Chadwick, R. (2005). Musculoskeletal discomfort surveys used at NIOSH. In N. Stanton, A. Hedge, K., Brookhuis, E. Salas, & H. Hendrick (Eds.). Handbook of human factors and ergonomic methods (4-1 – 4-10). Boca Raton: CRC Press.	Rate your level of physical discomfort (pain, aching, stiffness, numbness, tingling, burning, etc.) in each of the following parts of your body over the past 30 days.
Physical Symptoms[d]	8	--	Brim, O.G., Ryff, C.D., & Kessler, R.C. (Eds.) (2004). How healthy are we? A national study of well-being at midlife. Chicago: The University of Chicago Press.	I had headaches.
Physical Injury[c]	6	.81	SHARP developed	Mild soreness/surface abrasion/scratches.
Sleep Disruption[h]	3	.59	Buysse, D.J., Reynolds, III, F.F., Monk, T.H., Berman, S. R. & Kupfer, D.J. (1989). The Sleep Quality Index: A new instrument for psychiatric practice and research. *Journal of Psychiatric Research*, 28(2), 193-213.	In the past month, how would you rate your sleep quality overall? (Reverse scored)
Safety Participation [b]	4	.87	Griffin, M.A. & Neal, A. (2000). Perceptions of safety at work: A framework for linking safety climate to safety performance, knowledge and motivation. *Journal of Occupational Health Psychology*, 5, 347-358.	I ensure the highest levels of safety when I carry out my job.
Job Dissatisfaction [b]	3	.89	Cammann, C., Fichman, M., Jenkins, G.D., & Klesh, J.R. (1983). Assessing the attitudes and perceptions of organizational members. In S.E. Seashore, E.E. Lawler, P.H. Mirvis & C. Cammann (Eds.), Assessing organizational change: A guide to methods, measures and practices (pp. 71-138). New York: Wiley.	All in all, I am satisfied with my job. (Reverse scored)
Turnover Intentions [b]	3	.94	Hom, P.W., Griffeth, R.W., & Sellaro, C.L. (1984). The validity of Mobley's (1977) model of employee turnover. *Organizational Behavior and Human Performance*, 34, 141-174.	If I have my own way, I will be working for some other organization one year from now.
Burnout – Exhaustion [g]	9	.91	Maslach, C., & Jackson, S. E. (1981a). *The Maslach Burnout Inventory*. Palo Alto, CA: Consulting Psychologists Press.	I feel emotionally drained from my work.
Burnout – Cynicism [g]	5	.78	Maslach, C., & Jackson, S. E. (1981a). *The Maslach Burnout Inventory*. Palo Alto, CA: Consulting Psychologists Press.	I worry that this job is hardening me emotionally.
Patient Care Quality [b]	4	.75	Aiken, L.H., Clarke, S.P., Sloane, D.M. (2002). Hospital Staffing, organization and quality of care: Cross-national findings. *International Journal for Quality in Healthcare*, 14(1), 5-13.	There are enough care providers to give quality patient care.

Note. [a]Open-ended question; [b] Five-point agreement scale (1 = strongly disagree; 5 = strongly agree); [c] Five-point frequency scale (1 = never; 5 = daily); [d] Five-point frequency scale (1 = never; 5 = very often); [e]Five-point frequency scale (1 = rarely or none of the time; 5 = all of the time); [f] Five-point pain scale (1 = no pain; 5 = worst pain ever in your life); [g] Seven-point frequency scale (1 = never; 7 = every day); [h]Four-point scale (1 = very bad, 4 = very good).

Satisfaction w/Patient Care [b]	3	.89	Hinshaw, A.S. & Atwood, J.R. (1984). Nursing staff turnover, stress and satisfaction: Models, measures, and management. *Annual Review of Nursing Research*, 1, 133-153.	I am satisfied with the quality of patient care I give.
Workplace Violence/Incivility [a]	1	-	SHARP developed	Is there anything else you would like to add about workplace violence/incivility in your hospital?

Note. [a]Open-ended question; [b] Five-point agreement scale (1 = strongly disagree; 5 = strongly agree); [c] Five-point frequency scale (1 = never; 5 = daily); [d] Five-point frequency scale (1 = never; 5 = very often); [e]Five-point frequency scale (1 = rarely or none of the time; 5 = all of the time); [f] Five-point pain scale (1 = no pain; 5 = worst pain ever in your life); [g] Seven-point frequency scale (1 = never; 7 = every day); [h] Four-point scale (1 = very bad, 4 = very good).

Appendix B. Focus Group and Individual Interview Topics

Safety training, policies, and practices

- What are recent changes in training that might have an impact on workplace violence?

Organizational safety culture

- What does it take to get work done safely?
- What are others attitudes toward managing workplace violence or patient aggressiveness?

Staffing/Scheduling Strategies – related to workload, flexibility, and violent incidents:

- Is understaffing a current problem?

  Probe: How does staffing impact workplace violence?

- How does the hospital respond to unscheduled absences?

  Probe: Are on call staff currently used?

  Are workers pulled from other wards or units?

- Have rules and routines for switching schedules at the employee's request changed in the past 2 years?
- Are there any other recent changes in approach to staffing/scheduling?

Communication:

- What kinds of things do you do that are most valuable to each other?
- What kind of interaction/communication is the most challenging during your shift?
- Is bullying or incivility a problem?

  Probe: How has this changed in the past 2 years?

Supervisor/Coworker Support

- Can you describe examples of things your supervisor has done that have been helpful? Your coworkers?
- How often do you communicate with your supervisor about your needs? Coworkers?
- What is the most common topic you communicate about with your supervisor? Coworkers?
- How does workplace violence and incivility impact the personal or family life of care providers?
- What causes you the most stress at work?
- Is there anything else you want to say about your job and workplace violence at the hospital?

Appendix C. Study Specific Aims and Hypotheses

Aim 2a: to examine the relationships between workplace psychosocial context and workplace violence and disruptive behavior has 6 testable hypotheses:

(2.1) Employees with perceptions of higher levels of violence prevention climate will report lower patient assaults, disruptive behavior, and witnessing disruptive behavior;

(2.2) Employees who perceive higher levels of organizational support, supervisor support and coworker support will report lower patient assaults, disruptive behavior, and witnessing disruptive behavior;

(2.3) Employees with supervisors who exhibit higher levels of family supportive supervision will report lower patient assaults, disruptive behavior, and witnessing disruptive behavior;

(2.4) Employees with perceptions of higher levels of staffing adequacy, schedule control, and schedule satisfaction, will report lower patient assaults, disruptive behavior, and witnessing disruptive behavior;

Aim 2b: to examine the relationships between workplace psychosocial context employee health, safety, family and work outcomes has 4 testable hypotheses:

(2.5) Employees with higher perceptions of violence prevention climate, organizational support, supervisor support, family-supportive supervisor behaviors, coworker support, staffing adequacy, schedule control, schedule satisfaction, and job security will report higher general health perceptions, lower depressive symptoms, lower levels of physical symptoms, physical discomfort-pain, injury, and sleep disruption;

(2.6) Employees with higher perceptions of violence prevention climate, organizational support, supervisor support, family-supportive supervisor behaviors, coworker support, staffing adequacy, schedule control, schedule satisfaction, and job security will have higher safety participation;

(2.7) Employees with higher perceptions of violence prevention climate, organizational support, supervisor support, family-supportive supervisor behaviors, coworker support, staffing adequacy, schedule control, schedule satisfaction, and job security will report lower work-to-family conflict, higher partner support, and higher relationship and life satisfaction;

(2.8) Employees with higher perceptions of violence prevention climate, organizational support, supervisor support, family-supportive supervisor behaviors, coworker support, staffing adequacy, schedule control, schedule satisfaction, and job security will report lower job dissatisfaction, turnover intentions, and burnout (exhaustion and cynicism) and higher patient quality of care and quality of care satisfaction.

Aim 2c: to examine the relationships between workplace violence and disruptive behavior and employee health, safety, family and work outcomes has 4 testable hypotheses:

(2.9) Employee perceptions of higher patient assaults, disruptive behavior, and witnessing disruptive behavior are related to employee health outcomes such that employees who perceive higher levels of WPV and

disruptive behavior will report lower general health perceptions, higher depressive symptoms, higher levels of physical symptoms, physical discomfort-pain, injury, and sleep disruption;

(2.10) Employee perceptions of higher patient assaults, disruptive behavior, and witnessing disruptive behavior are related to employee safety outcomes such that employees who perceive higher levels of WPV and disruptive behavior will have lower safety participation;

(2.11) Employee perceptions of higher patient assaults, disruptive behavior, and witnessing disruptive behavior are related to employee family outcomes such that employees who perceive higher levels of WPV and disruptive behavior will have higher work-to-family conflict, lower partner support, and lower relationship and life satisfaction;

(2.12) Employee perceptions of higher patient assaults, disruptive behavior, and witnessing disruptive behavior are related to employee work outcomes such that employees who perceive higher levels of WPV and disruptive behavior will have higher job dissatisfaction, turnover intentions, and burnout (exhaustion and cynicism) and lower patient quality of care and quality of care satisfaction.