The Washington State Psychiatric Hospital Work, Stress, and Health Project: Final Report to the Washington Department of Social and Health Services and Eastern State Hospital

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

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

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SHARP research program at the Washington State Department of Labor & Industries is recognized as a leader in the multidisciplinary field of occupational safety and health research. Among other work, SHARP has conducted studies 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 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 (CDC), National Institute for Occupational Safety and Health (NIOSH), and is conducted with the support of the Washington State Department of Labor & Industries, Washington Department of Social and Health Services and Eastern State Hospital.

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

Executive Summary

Overview

The growing demand for healthy workplaces creates a hospital climate in which direct care provider well-being and safety and 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 (WWSH) 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 (WWSH) Project involves collaboration between the Washington State Psychiatric Hospitals and the Washington State Department of Labor & Industries SHARP research program. The research in this report consists of a survey study involving qualitative and quantitative assessments. 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, 196 were from Eastern State Hospital. Survey respondents also provided qualitative descriptions of significant assault experiences, and suggested changes to improve the quality of their work life. The WWSH project was designed following a prior qualitative assessment of workplace violence and work context, the results of which were presented to ESH stakeholders in The Eastern State Hospital Workplace Violence Project: Final Report to Washington DSHS Mental Health Division and Eastern State Hospital (February 22, 2011).

The findings from the current survey are now being used by our Western State Hospital (WSH) Intervention Development Team, consisting of key WSH management, union and direct care provider stakeholders to develop and pilot a workplace violence prevention intervention with supervisory nurses and care providers. In addition, 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). The completed intervention will be provided to Eastern State Hospital for their modification and use.

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

Survey Findings

Aims 1-3: Describing and testing a new model of workplace resources, workplace violence, and health, family, and work relationships.

In prior state psychiatric hospital research, we investigated the nature of work context resources including scheduling, staffing, organizational support, and workplace violence experience as critical stressors by analyzing qualitative data from focus groups and individual interviews done at Eastern State Hospital (ESH). The content analysis of this data, presented in a report to ESH in 2011 found three primary themes to address: 1) control over work (including inadequate staffing levels), 2) organizational culture, and 3) training and education. These themes were generated from the issues that were most consistently reported in the focus group and interview data. These qualitative data provided the background and impetus for the Washington State Psychiatric Hospital Work, Stress, and Health Project Survey conducted in 2012 and presented in this report.

The survey data presented here are largely in alignment with our previous research – with low levels of schedule control/flexibility, organizational support and violence prevention climate being reported as connected to increased risk of patient assault incidents. In the current quantitative survey, we additionally found high levels of interpersonal aggression and incivility, information that was not reported during our prior research focus groups and individual interviews. Survey results from 2012 showed significant relationships between high levels of disruptive behavior and negative employee health, family, and work outcomes.

We conducted extensive analyses to 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 our key findings, we established support for many of our hypotheses. For example, direct care providers' who experienced high staffing adequacy reported less physical discomfort-pain, fewer depressive symptoms, less sleep disruption, less job dissatisfaction, less burnout, higher quality of patient care, and **less disruptive behavior.**

We also found that care providers with family supportive supervisors experienced less job dissatisfaction, reported providing higher quality of patient care, and reported experiencing **less disruptive behavior**. When organizational support was high, care providers also reported **less disruptive behavior.** Violence prevention climate was also found to be a significant contextual resource affecting health, family, and work-related outcomes. Care providers who responded as having high violence prevention climate reported less physical discomfort, high patient quality of care, high satisfaction with patient care, and less workplace violence (patient assault and disruptive behavior).

Finally, care providers who experienced more disruptive behavior, or assault from a patient, reported significantly worse health on almost every health outcome measured, and reported high burnout, lower quality of patient care and lower satisfaction with patient care. The corroboration of findings from our earlier report, and the methodological triangulation strengthens the validity of the overall study findings, conclusions, and recommendations.

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

Recommendation #1:

Increase Staffing Adequacy and Schedule Flexibility Support for Work-Life Management

Staffing adequacy, when low, was related to many outcomes, most importantly, increased disruptive behavior, but also worse 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 earlier qualitative findings supported addressing staffing adequacy as well and did clarify some of the complex dynamics of high disruptive behavior, low morale, high turnover, difficulty filling vacancies, and unscheduled absences – all factors that reduce staffing adequacy and stability and increase the 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
- Consider working with SHARP researchers to modify the intervention currently under development with Western State Hospital that addresses supervisor support for workplace violence prevention for patient and staff safety, coworker support, schedule flexibility, and work-family 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 at ESH have employees who report less job dissatisfaction, lower turnover intentions and higher patient quality of care and life satisfaction. 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, especially for those with less hospital tenure and the most patient contact hours
- 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 staff surveys

Recommendation #2:

Address Disruptive Behavior by Increasing Support Resources

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

- Hospital leadership should focus on developing a program to resolve disruptive behavior as a primary objective. Enlist participation from all hospital stakeholders at all organizational levels and from all disciplines
- Research interventions for disruptive behavior and adopt and implement an intervention model hospital wide, including strong and clearly delineated policies, procedures, and practices (See Hickson et al., 2007)
- 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 versus the negative effects of disruptive behavior on patient quality of care and patient and staff safety
- Create and promote a positive violence prevention and safety culture with continuous learning through effective and supportive debriefing processes and techniques

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 key resources to assist care provider's dealing with workplace violence stressors: increase staffing adequacy and schedule flexibility for work-life management, and address disruptive behavior by increasing supportive intervention resources at all levels of the organization. *Finally, we emphasize the good news from this study and report that when violence prevention climate, family support, staffing and scheduling resources are high, negative outcomes are low including patient assault and disruptive behavior*

We are pursuing the next phase of the Washington Work, Stress, and Health Project with the development of intervention training modules focused on patient and staff safety culture, social support and schedule flexibility for work-life management. Future work will be ongoing for the current WWSH project at Western State Hospital, though we will offer the final training product to Eastern State Hospital for modification as well. We look forward to continuing our work with a very dedicated and engaged WSH Intervention Development Team, and are excited about this project as we go forward to develop the supervisor training intervention and further investigate the issues surrounding workplace violence and disruptive behavior for psychiatric care providers.

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

Overview

Currently, not enough is known about 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 workplace violence in the state psychiatric hospital. As defined by the National Institute for Occupational Safety and Health (NIOSH, 2002), Type II workplace violence is violence directed at employees by customers, clients, patients, or any others for whom an organization provides services. 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 levels, 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 psychiatric hospitals 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 flexibility and supervisory support for care providers 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 and patient and staff safety related to patient assaults and disruptive behavior among coworkers.

An Occupational Health Psychology Perspective on Stress and Workplace Violence Prevention

The National Institute for 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, 1999, 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, coworker support, violence-related policies, 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 (U.S. Department of Labor, Bureau of Labor Statistics [BLS], 2001). According to the National Crime Victimization Survey, mental health workers experienced the highest rate of workplace violence in the health care sector, with 21 assaults per 1,000 workers (Harrell, 2011). 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 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, a 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, Bobrowski, & Bobrowski, 2006; O'Connell, Young,

Brooks, Hutchings, & Lofthouse, 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 et al., 1996; Lasalvia et al., 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, Styles, Perry, & Comb, 2010; di Martino, 2003; Henderson, 2003).

Previous research on psychiatric hospital employees in Washington State has shown significant occupational risks for injury due to assault (Bensley, Nelson, Kaufman, Silverstein, Kalat, & Shields, 1997). More recent research reported that 43% of surveyed staff at a university department of psychiatry had been threatened, and a quarter had been physically assaulted (Privitera, Weisman, Cerulli, Tu, & Groman, 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, Hancock, Johnson, Daly, & Jackson 2005; Estryn-Behar et al., 2008; Evans et al., 2006; Jackson, Claire, & Mannix, 2002; Sofield & Salmond, 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 and patient safety (U.S. Department of Labor & Occupational Safety and Health Administration, 1996; 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.

This research study comes out of the findings from previous research presented in The Eastern State Hospital Workplace Violence Project: Final Report to Washington DSHS Mental Health Division and Eastern State Hospital (2011). The findings were based on 2 ward observations, 3 focus group interviews with 10 direct care staff, and individual interviews with 1 union representative, 3 supervisory nurses, and 2 hospital managers. The findings were used to design the WWSH survey and results from the 2011 report highlighted three main issues for improving patient and staff safety: 1) Control over work – increase employee schedule flexibility and analyze staffing and scheduling to reduce unscheduled absences, pulling, and overtime, 2) Organizational culture – consistent policy and procedure, improved communication, and positive role-model behaviors, 3) Training and education – such as a formal peer mentoring program. This study aimed to further pursue these topics through the collection of quantitative and qualitative survey data from a larger sample of Eastern State Hospital (ESH) care providers, and to document any changes in the policies and procedures, culture, or amount of workplace violence that affect staff health, safety, family, and work outcomes.

We did find significant differences between our previous study results and the findings we present in this report. High levels of reported incivility or disruptive behavior were unexpected as these issues were not reported as concerns in the 2011 report. We also found significant supporting evidence that organizational violence prevention climate, staffing and schedule control, social support, and training were found to be related to workplace violence and health, family, and work outcomes – corroborating our earlier research. We present

these results in more detail in the results section of this report and comment on the potential relationships with, and solutions to, reports of workplace violence at ESH.

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 staffing, schedule control, organizational support, supervisor and coworker behavior, and workplace violence incidents as critical stressors using qualitative data from the Work, Stress, and Health and Safety Assessment: Care Provider Survey. Participants described 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 aspects of their work affects their health and safety.

Research Need #2: *Workplace violence research needs an empirically-supported model linking work context and critical violence 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 outcome as well as various mechanisms or processes that may impact the stressor-strain relationship.

The current study with Eastern State Hospital (ESH) answers a number of these calls. This exploratory project has support from National Institute for Occupational Safety and Health (NIOSH) and the Centers for Disease Control and 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 ESH care providers. The resulting survey was taken by a number of professionals at ESH, including MHTs, LPNs, RN2s, RN3s, and several management and administrative

professionals. 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 health, family, and work. 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 non-work 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, and work outcomes. Ultimately, the current study with state psychiatric hospitals, including ESH, 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 developments. The trainings are being 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, and will be available for Eastern State Hospital's use.

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 will focus 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 and schedule control. We are interested in a model that conceptually ties the organization of work to worker and family health, in the hope of developing workplace intervention strategies that will reduce workplace violence and improve employee health, family, and work outcomes.

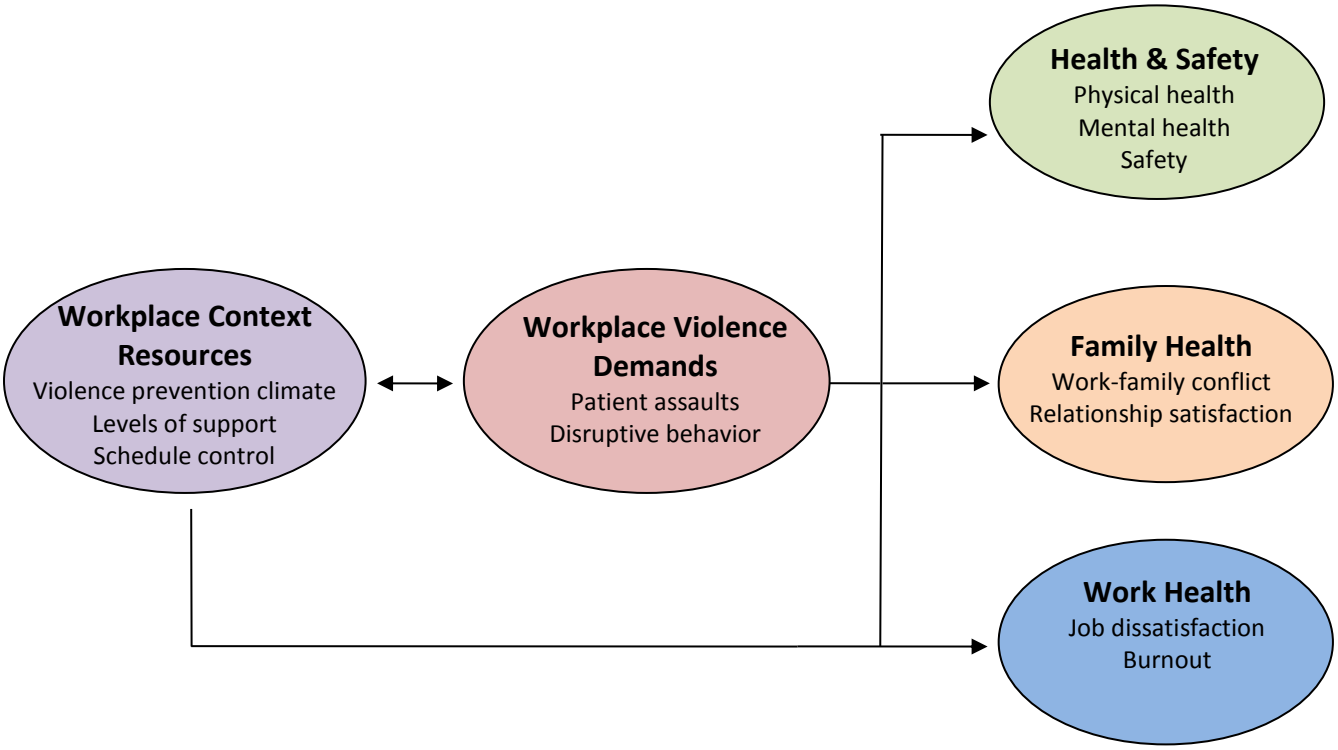
Theoretically, our model is based on the Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2007; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). The JD-R model of stress proposes that employees are different in the way they utilize organizational, social, psychological, and physical resources 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. As such, we expect a negative relationship between violence prevention climate, support, and schedule control measures with employees' workplace violence experiences. For example, higher levels of support will be related to lower 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 violence 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 beginning on page 35.

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



Research Design

Our research consisted of a collaborative effort between researchers from the Washington State Department of Labor & Industries SHARP Research Program and Eastern State Hospital management and labor groups. Eastern State Hospital consists of three acute treatment units at the hospital campus in Medical Lake, Washington. The Adult Psychiatric Unit (APU) provides inpatient hospitalization for adults 18 to 50 years old who are severely mentally ill and are committed for evaluation and treatment by a civil court proceeding. The Geropsychiatric Unit (GPU) provides psychiatric evaluation and treatment for individuals 50 years of age and older or persons under 50 years of age with medical concerns. The Forensic Services Unit (FSU) – provides evaluation and treatment services for adults prior to their trial, after they are convicted, or after they are acquitted by reason of insanity. Eastern State Hospital is a 287-bed state psychiatric hospital for 21 eastern Washington counties and has approximately 700 budgeted staff at the hospital and about 467 of whom are direct care providers.

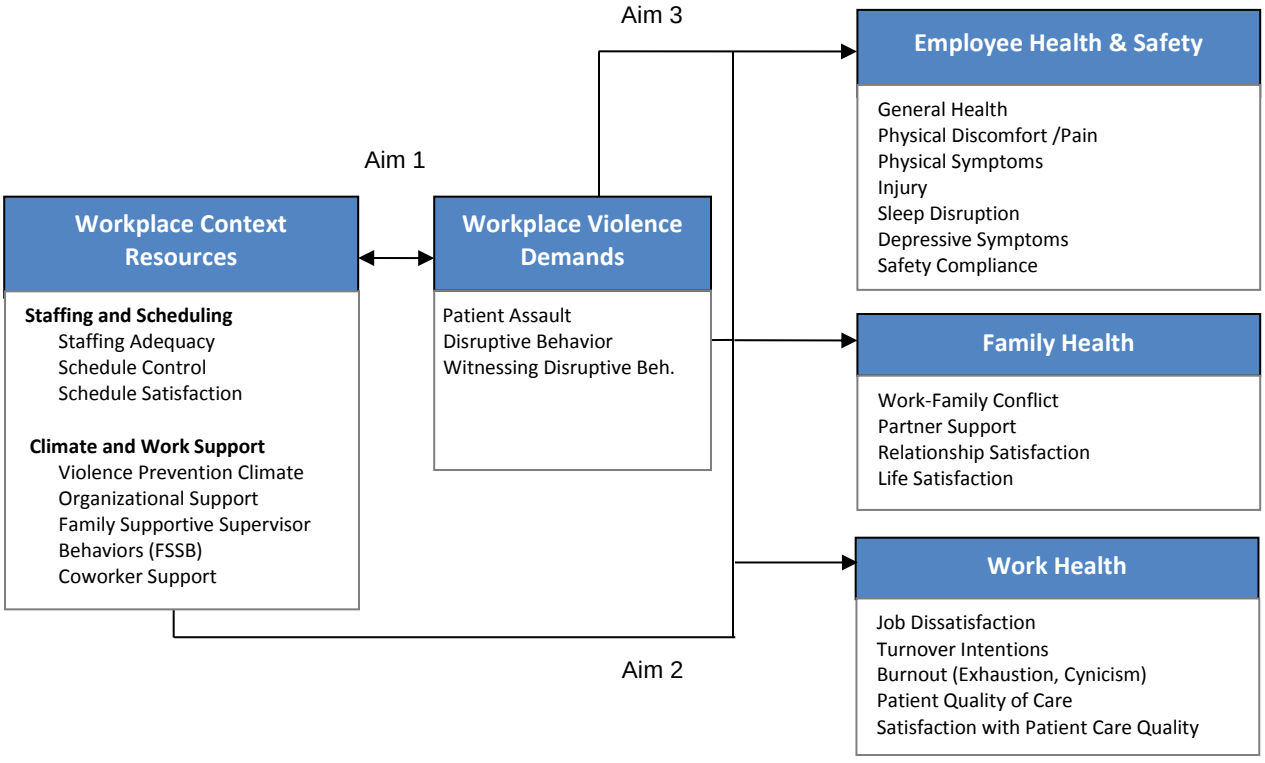
Service Employees International Union 1199 NW (SEIU) is an important stakeholder in issues affecting nurses in the state, with 22,000 healthcare workers across Washington State focused on quality patient care in the state's healthcare facilities and agencies. The Union of Physicians of Washington and 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 ESH.

SHARP research at the Washington State 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, and 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 (CDC), National Institute for Occupational Safety and Health (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 and 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, and Health Measurement Model***



In late February and early March 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

Violence 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.

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 (Revised Code of Washington 72.23.400). 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 (TJC, 2008). In addition to developing sound policies on violence and educating employees about their content, the hospital leadership team and supervisors from psychology, social work, rehabilitation therapies, and nursing have a powerful role in communicating policy to employees and ensuring that policies, procedures, and practices are reasonably followed.

A safety climate or culture involves focusing on safety relevant practices that reduce harm; and can be formed by enabling, enacting, and elaborating those patient safety premises that prioritize and translate safety practices for direct care providers and their managers (Vogus, Sutcliffe, & Weike, 2007). Previous research on nurse team priority of safety and the number of team errors reported has shown that head nurse behavioral integrity for safety positively relates to both team priority of safety and psychological safety – these results suggest that prioritizing both safety protocols and admitting mistakes against those same protocols without repercussions, is important to patient safety and is fostered by nurse leadership (Leroy, Dierynck, Anseel, Simons, Halbesleben, et al., 2012). 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.

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 (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 responses to patients and compliance with new safety procedures (Zohar, 2002). When senior management solves problems as they arise and communicates solutions to nursing staff (instrumental support) with strong and significant actions, they contribute to a supportive climate (Choo, Linderman, & Schroeder, 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.

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 better 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 non-work-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 levels are 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 levels 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 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).

Work schedule control and schedule satisfaction

Schedule control, defined here broadly 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, Schnall, Ladsbergis, & Baker, 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 schedule switching) 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 schedule switching 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 (coworkers' social support and sense of community). In the ten studies no ill health effects were reported for flexible work schedules.

Workplace Violence

Patient assault

Workplace violence has been recognized as a significant performance and health concern for nurses and nursing staff (e.g., Lanza, 2006a; 2006b). 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 (Gerberich et al., 2004). 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, Reed, Craig, Murphy, Lehman, 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). Disruptive behavior is the term used for incivility in health care and it is worthwhile noting that many terms are used for unprofessional behavior including workplace aggression, bullying, abusive supervision, and interpersonal conflict, many with similar outcomes for targets (Hershcovis, 2011).

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; The Joint Commission, 2009). 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 professionals and care providers in the hospital environment have also been reported as engaging in disruptive behavior or incivility on the job (Walrath, Dang, & Nyberg, 2005).

Some research links incivility to retention, another costly outcome for organizations. Cortina et al. (2001) also 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 and colleagues (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 others leaving the organization because of disruptive behavior.

There is evidence of a causal relationship between interpersonal conflicts at work and self-reported health and work outcomes. Coworker 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). Coworker conflict was also predictive of poor general health. Being a witness to workplace bullying and incivility has also been linked to an elevated risk of future depressive symptoms (Emdad, Alipour, Hagberg & Jenson, 2012). 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, 2005; The Joint Commission, 2009). 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 caregivers 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. Disruptive behavior interrupts good collaborative communication and reduces patient safety and staff safety as well as quality of patient care (Rosenstein & O'Daniel, 2005; 2008).

Health Outcomes

Physical health, physical discomfort-pain, physical symptoms, and physical injury

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, Swanson, Waters, Hales, & Dunkin-Chadwick, 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, supervisor and coworker 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 & Rutherford, 2005).

Coworker conflict was also predictive of poor general health (De Raeve, Jansen, van den Brandt, Vasse, & Kant, 2009). Employee injury and assault risk has also been tied to the informal social hierarchy of the organization and the presence of workplace incivility (Myers, Kriebel, Karasek, Punnett, & Wegman, 2007; Langlois et al., 2007). However, workers who have reported high levels of incivility have better physical outcomes when they perceived better organizational and emotional support (Miner, Settles, Pratt-Hyatt, & Brady, 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, disruptive behavior, 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 & Coyne, 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 & Bielecky, 2012; Wood et al., 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 et al., 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 et al., 2003). Low job control, and low job control with high job demands, have both been found to have a negative effect on mental health (Dalgard et al., 2009), while job demands by

themselves were not significantly associated with poor mental health – suggesting a significant interaction between demands and control. Other analysis suggests that targets of incivility endured psychological distress, dissatisfaction with and disengagement from their institution, and performance decline (Caza & Cortina, 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 injury, 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, Reynolds, Monk, Berman, & Kupfer, 1989). Bullying and psychological strain has been found to negatively affect sleep quality, which is predictive of stress and fatigue outcomes among nurses (Winwood, Winefield, & Lushington, 2006; Niedhammer, David, Degioanni, Drummond, Philip, & 143 occupational physicians, 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 disruption, as well as, job strain and job stress (Costa, Sartori, & Akerstedt, 2006; Burgard & Ailshire, 2008). Sleep quantity and sleep disruption have been associated with an increased risk of injury in a general sample (Choi et al., 2006); and participation in a work-time flexibility program has been found to be associated with positive changes in health-related behaviors, including better sleep quality (Moen, Kelly, Tranby, & Huang, 2011).

Safety compliance

Safety compliance refers to core safety behaviors that employees need to carry out in order to maintain a safe working environment and that are a basic part of employees' job requirements (Griffin & Neal, 2000). In the context of the healthcare field, examples of safety compliance would include following blood and bodily fluid precautions, as well as following safe guidelines for the use of de-escalation, seclusion, and restraint for violence prevention. Research has shown that self-reported safety behavior in the workplace is negatively related to subsequent incidents and injuries in the workplace (Neal & Griffin, 2006; Probst & Brubaker, 2001).

Relevant to the current study, in a recent research study with hospital staff, Neal and Griffin (2006) found that self-reported safety behavior was associated with a reduction in work group accident rates, possibly because increased safety behaviors create a safer work environment. Another recent study of unionized health care workers and nurses found that higher levels of family-to-work conflict were significantly associated with lower levels of safety compliance (Cullen & Hammer, 2007). Additionally, employees who report high levels of perceived job insecurity tend to exhibit lower levels of safety compliance (Probst & Brubaker, 2001). A strong organizational safety climate (i.e., perceptions of organizational and management attitudes towards safety and its relevance to the organization; Zohar, 1980) has been linked to increased safety compliance. Furthermore, a strong organizational safety climate can weaken the negative effects of perceived job insecurity on safety compliance (Probst, 2003).

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 is 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 et al., 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 non-work). A goal of the study was to examine the ways in which work demands can impact employees' non-work 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 non-work 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, Paff-Bergen, Hatch, Obiorah, Copeland, 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.

Work Outcomes

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 and 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 also 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, Clarke, Coles, Ball, James, 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, Walsh, & Guest, 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 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 aimed 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 Eastern 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. 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 (i.e., 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 ESH, 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, Clarke, Sloane, Lake, & Cheney, 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 measures. 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 Eastern State Hospital. First, announcements regarding the purpose of the survey and opportunity to participate were made via the ESH intranet and through emails to direct care providers. Members of the SHARP research team then met with the ESH Executive Leadership Team to explain the purpose of the survey and answer questions. We rotated a survey administrator through each hospital unit and shift in available rooms the course of a week to recruit and administer paper surveys. Finally, we also set up a Survey Monkey link and through flyers, the intranet, and email communications we recruited direct care providers who preferred to complete the survey online.

Participant Characteristics

A total of 196 direct care providers and supervisors completed the survey. The sample size was reduced to 190 after excluding cases with a significant amount of missing data on key variables – the sample size for direct care provider analysis was further reduced to 178 cases. We present the study sample characteristics in Table 1 and Table 2 below. Our response rate for direct care staff was about average for organizational research, with approximately 33% of direct care providers participating in this study (see Appendix B). As Table 19 shows, we did have better response rates from LPNs and PSNs. Follow-up survey of this population is suggested for a larger sample size and better response rate, especially from MHT and Psychology staff.

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

	Frequency	Percent
Gender (N = 172)		
Male	68	39.5
Female	104	60.4
Age (N = 172)		
18-29 years	18	10.5
30-39 years	25	14.5
40-49 years	43	25.0
50-59 years	65	37.8
60-69 years	21	12.2
Ethnicity (N = 178)		
White	147	82.6
Multi-Ethnic	8	4.5
Black/African American	3	1.7
Asian	5	2.8
Native Hawaiian/Pacific Islander	2	1.1
American Indian/Alaskan Native	1	.6
Hispanic	1	.6
Declined to answer	11	6.2
Education (N = 175)		
High School/GED	29	16.6
2-yr Assoc. Degree	41	23.4
Some College	49	28.0
Bachelor's Degree	47	26.9
Graduate Degree	9	5.1
Relationship Status (N = 170)		
Married, Living as Married	116	68.2
Widowed	5	2.9
Divorced or Separated	25	14.7
Never Married	20	11.8
Domestic Partner	4	2.4
Dependent Children at Home (N = 178)		
0 Children	100	56.2
1 Child	24	13.5

2 Children	32	18.0
3 Children	10	5.6
4 Children	8	4.5
5 or 6 Children	4	2.3
Caring for an Elderly Adult (N = 163)		
No	101	62.0
Yes	62	38.0

The majority of respondents are: white, married or living as married, female, age 40 or older, and have an education level of at least a 2-year Associate degree. The majority of respondents did not have a dependent child at home; however, almost 44% of respondents did have at least one child at home and 38% of staff surveyed reported caring for an elderly adult outside of work. This is important because it exemplifies the family and personal responsibilities of staff outside of work and the potential opportunities to decrease work-to-family conflict by increasing family supportive supervisory behaviors (FSSB).

Table 2. ***Eastern State Hospital direct care provider work and demographic characteristics***

	N	Mean	Standard Deviation	Minimum	Maximum
Hour Length of Typical Shift	168	8.01	.15	8	10
Overtime Hours per Week	168	1.91	4.36	0	26
Hours Worked – Total per Week	172	43.43	9.41	20	96.5
Position Tenure (years)	169	6.16	6.00	.08	27.0
Organization Tenure (years)	170	11.72	9.11	.08	34.0
Occupational Tenure (years)	171	14.87	9.98	.08	50.0
Number of ward pulls (past 6 months)	157	9.41	22.01	0	200
Number of Patients Cared for	156	29.13	13.47	4	100

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 Eastern State Hospital for an average of 11.7 years, and have been at their current position for about 6 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, about 29 patients, with a range between 4 to 100 patients, reflecting occupational discipline and the number of hours an employee may work (i.e., full-time versus part-time employment). While the average shift length was reported to be just above 8 hours, the average number of hours worked per week reported was slightly greater than 40 hours indicating a small but significant number of staff working overtime and second jobs. While the average number of overtime hours worked per week was reported to be about 2 hours, the range was highly skewed so that while most were not reporting overtime, a few respondents

reported as many as 26 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 200 times (or about twice a day for 6 months). This average may be influenced by the inclusion of float staff, but over half of respondents reported being pulled at least twice [*data not shown*]. As a snapshot of the characteristics of work for direct-care staff who participated in this survey, this data reflects a generally significant hospital tenure and a range of occupational characteristics, with a minority of staff reporting high amounts of overtime and often being pulled to different wards.

Results: Critical Stressors and Negative Work Experiences

To address the aims of this study, we investigated the nature of work context resources such as scheduling, staffing, organizational support, supervisor and coworker behavior, and workplace violence incidents as critical stressors using qualitative and quantitative data from the 2012 Care Provider Work, Stress, and Health Survey. Included in the survey were three unrestricted questions that asked for suggestions for workplace violence prevention, a description of their assault (if assaulted), and finally an open-ended question on workplace violence and incivility at the hospital. Participants described to us their perceptions of the work context present at the hospital, their incidents of assault if applicable, and their frustrations and sources of work-related stress. Here we aim to offer the perspectives of direct-care staff members and their supervisors, to more fully understand care providers' perceptions of and experiences with workplace violence.

Content Analysis Method

The themes named below are broad, and based on the responses from three open-ended questions included in the survey (see also, Appendix A):

- What is the most important thing your hospital could do to make it easier for you to handle aggressive patients safely?
- [If answered 'Yes' to being assaulted in the past 2 years] What happened?
- Is there anything else you would like to add about workplace violence/incivility in your hospital?

The themes below were chosen after systematic review and content analysis of all the textual responses from the survey open-ended questions. We analyzed the text broadly for general themes and insight into the contextual issues surrounding workplace violence for direct care providers. Themes were selected because they were mentioned repeatedly by different respondents, with strong or detailed language, and were relevant to understanding the psychosocial climate and/or experiences of workplace violence and incivility, as perceived by hospital employees. These themes will be considered in relationship to the quantitative survey results we present later in the report.

> "Staffing issues are mainly what dictate the potential for workplace violence, at least 50% of the time it feels that staffing is inadequate in relation to the acuity of the ward. I understand that my supervisor does not control this, but this shows a definite need for increased amount of staffing on the wards."

Qualitative Themes

Staffing Adequacy and Support for Work-Life Culture

Staffing adequacy, or perceptions of low staffing levels that affect patient-to-staff ratios, ward team structure, and staff and patient safety, was a strong theme mentioned in our 2009 research project and continued in the open-ended survey responses to this 2012. 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 absences due to calling in sick (Aiken, Clarke, & Sloane, 2002; Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Needleman, Buerhaus, Mattke, Stewart, & Zelevinsky, 2011; Rafferty et al., 2007). In our qualitative analysis, 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. Participants reported that the expected use of sick leave for unscheduled absences was part of the hospital culture, contributing to a pattern of low staffing adequacy, low organizational commitment, and low job satisfaction.

> "[Provide] Staffing levels that allow staff to complete required duties, and yet also allows for flexibility in covering emergent or unexpected changes in staffing levels. In other words not lowering staffing to the absolute lowest permitable levels on a routine basis."

> "I have worked for many years at ESH, over 30 years in mental health. Most of my experience at ESH - especially in patient care has been good to excellent. Over the past especially 5 years having *enough staff* to give quality care to each patient has and continues to be diminishing. Most supervisors have been good to excellent. Currently the supervisor on my ward appears to be of afraid of angry volatile patients - doesn't follow treatment plans with those patients. Weekend positions have been taken away and given over to RN positions. This has diminished MHT ability to have time off for personal experience. Especially with the taking away of trading days option. This gives a feeling of diminishment among MHT staff. Some increase in unscheduled leave results. MHT's with knowledge and experience - who are daily FRONT LINE workers often develop *'I don't care'* attitudes for periods of time. Under the current administration, MHT respect is the lowest I have experienced at ESH..."

Our quantitative survey data indicates that high staffing adequacy was significantly and related to reporting less disruptive behavior, while high schedule satisfaction was significantly associated with fewer patient assaults, less disruptive behavior, and less witnessing disruptive behavior. The concerns reported by participants in the interviews and focus groups in our 2012 report regarding staffing inadequacy and risk of assault are in alignment with this surveys' quantitative data, thus strengthening these findings. The qualitative and quantitative results from this survey indicate that staffing is a critical and significant issue where direct care providers perceive that current staffing levels are unsafe.

> "I do not feel that assaults on staff by patients are taken seriously in this hospital. I do not feel that there is adequate support for staff that are assaulted. I have not seen adequate follow-up from management after assaults have occurred. No one has offered to debrief me after a coworker has been assaulted."

Social Support and Communication

Social support from the organization, immediate supervisors, and coworker teams is a component of organizational culture and refers to positive social interactions that build good work relationships and provide assistance and information to staff. A lack of organizational and supervisor support was often cited in the qualitative response data as affecting staff and patient safety, quality of care, and positive staff-patient interactions, especially after a patient assault incident. Debriefing is a specific form of support designed to follow-up with care providers after an incident. Respondents reported that debriefings were rare, and that formal and informal responses following an incident were lacking from supervisors and upper-level management in supportive tone, value, and occurrence.

One way for the organization and supervisors to demonstrate support for direct-care providers is by performing appropriate, thoughtful, and timely debriefings, and by making debriefings an important and consistently emphasized part of hospital policy and procedure.

> "When workers are assaulted or patients assault others, reports of the assaults are often ignored by upper management… Many staff I have talked with say about such paperwork 'You're wasting your time. [*Management*] throws those forms away so that no bad publicity will come to the hospital….' [The] lack of consequences for negative actions invites further assaults …This threatens the safety of patients and staff."

Communication from management, from the organization, and from supervisors was a consistent theme from the interviews and focus groups undertaken with staff in 2009, to the open-ended survey responses here. 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. The lack of communication in regards to decisions that affect ward staff was perceived as indication of a lack of organizational and supervisory respect and support. The lack of effective and clear communication was also cited a major contextual issue contributing to the perpetuation of incivility, psychological aggression, and other unprofessional behaviors.

> There are several things in place to prevent violence [and] debrief -- none of which are seen by ward workers. I was selected one year ago to be part of a CISM team… a team whose purpose is to debrief a ward/shift after a fairly significant event - we were supposed to meet quarterly to keep up on skills etc. -- nothing has happened since the initial training. One particular incident happened [where] a male peer assaulted another male peer - actually stomped on his head with his foot… *No Debriefing - none*. I, as I assume others, would appreciate a debriefing after an incident like that - *it would make me feel valued* and that this is not an expected aspect of my job to process that event ALONE or at home."

Managers and supervisors that listen and respond to the care providers' concerns about their job responsibilities, job stressors, and their views on the quality of patient care, provide emotional and instrumental resources to their employees. These are simple, but important and respectful ways for hospital staff to increase communication and support for their employees, and in turn, improve the morale of direct care staff.

Disruptive behavior (incivility) may be a consequence of a lack of social support for direct care providers -- especially supervisor and organizational support. This is suggested by the results from our quantitative survey data that show social support to be significantly related to workplace violence and disruptive behavior. When workplace social support was high reports of disruptive behavior were low.

> "This has been an ongoing experience, for me, the last 15 years. I have never experienced an organization that has kept their distance from line staff as ESH does. I have never experienced a group who do not solicit input before decisions are made and do not provide feedback on any input provided..."

Training

> "More training for… how to handle aggressive patients safely - signs and symptoms [and] violence prevention training…"

The desire for more frequent, effective, and appropriate training was repeatedly brought up as a source of frustration and as a possible solution to escalating situations, communication breakdowns, and injuries resulting from violent incidents. The importance of training was emphasized by 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: signs and signals of escalation, prevention and self-defense, proper debriefings, 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.

> "More training for staff… It seems [the] administration is hyper-critical yet they don't give staff the tools to become better. No staff development at all unless you go on your own…"

The lack of appropriate training and ability to provide consistent refresher training may be 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 and patient safety skills. When training does occur, supervisors have a critical role in promoting the training on the ward through communicating the value of the exercise, role modeling behaviors that reinforce the training content, and promoting the positive values of the organization. Therefore, training should include supervisory training on the unique skills supervisors' need for ensuring high quality patient care and fostering patient safety culture.

Conclusions

Staffing adequacy is the strongest theme to emerge from the 2011 research report that persists in the quantitative and qualitative data from the 2012 survey open-ended questions. It also appears to have a reverberating effect on many of the issues concerning health, work-stress and workplace violence and incivility. Low staffing adequacy is 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 residential facility for patients with severe mental illness. When staffing levels are minimally calculated, the amount of flexibility to individual schedules is also minimal, and perhaps even nonexistent.

In the 2012 survey data, survey respondents reported that the persistent stress due to low staffing adequacy contributed to low staff morale, emotional exhaustion, and dissatisfaction with work. 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, low social support and poor

communication, disruptive behavior, and lack of training, may leave patients and care providers at greater risk for harm.

The major theme of low staffing adequacy, and its relationship to workplace incivility, a lack of schedule flexibility, burnout, and lower patient and staff safety, which emerged from our qualitative data, is in alignment with our quantitative survey results. Taken together, these results suggest that low staffing adequacy is an important factor in staff and patient well-being and safety. This corroboration of findings from two data sources and data types over time, strengthens the impact of the overall study conclusions and recommendations related to increasing staffing adequacy and social support.

Results: Testing the Washington Workplace Violence Stress and Health Model

Testing the Core Study Relationships

We tested the Washington Work, Stress, and Health Model described in Figure 1 (p.15). 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 for Aim 2 investigated 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 3) and by care provider position (see Table 4). Tables 5 and 6 present the results of two models which examine the relationships between organizational context (work schedule and work support resources) on patient assaults and disruptive behavior. Following these, Tables 7-11 show the results of the multiple regression analyses for the organizational context in relation to care provider health, family, and work outcomes. 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 starting on the next page, discussing all of the findings for each one in turn.

Table 3. ***Workplace violence experienced by ESH direct care providers by type of violence***

Workplace Violence	*N*	Frequency / Yes	%
Patient Assault (past 2 years)	178	107	60.1
Disruptive Behavior			
(weekly, daily)	178	88	49.4
(past year)	178	165	92.7
Witnessing Disruptive Behavior	178	102	57.3

Note: Housekeeping/custodial staff included in "direct care provider" analyses because of their exposure to patients, risk of assault, and disruptive behavior.

We asked participants to respond to whether they had been assaulted in the past 2 years and 60% of Eastern State Hospital care providers reported being assaulted by a patient. A high percentage (92%) of care providers reported experiencing any disruptive behavior in the past year and almost 50% experiencing aggressive behavior from coworkers and supervisors on a weekly or daily basis. Finally, 57% of care providers reported witnessing disruptive behavior among coworkers in the past year.

A concern with the 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 patients or hospital staff. These results and quotes from our open-ended survey questions suggest that disruptive behavior is a significant issue for direct care providers at ESH.

Mental Health Technicians (MHTs), Psychiatric Security Attendants (PSAs), RN2s, and RN3s experienced the highest percentages of assault among the participants who contributed to the study (Table 4). We want to interpret these results with caution, however, because of possible bias in self-reported responses which may limit the representativeness of the results relative to the population of eligible ESH care providers that could potentially have participated in the survey. The interpretation of these results is also limited, as a significant number of respondents chose not to list their staff position out of concern for confidentiality.

Table 4. ***Workplace violence experienced by ESH employees by position.***

Care Provider Position	ESH Employees *N*= 190	Patient Assaults* *N*= 108	% of staff assaulted
RN4, admin/mgmt	10	1	.93
RN3	14	12	11.11
RN2	34	21	19.44
LPN	11	9	8.33
PSN	6	2	1.85
Physician	3	1	.93
Psychologist	0	0	0
Social Worker	4	1	.93
Mental Health Tech (MHT)	57	39	36.11
Psychiatric Security Attendant (PSA)	14	12	11.11
Rec. Therapist & Rehab. Therapist	9	3	2.78
Other	28	7	6.48

*Physical assault from a patient in the past 2 years

The effects of organizational work context on workplace violence outcomes

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 5. ***The effects of work schedule resources on patient assaults and disruptive behavior***

	Workplace Violence Outcomes		
Organizational Resources Predictors	**Patient Assault *N*= 159-163**	**Disruptive Behavior *N*= 159-163**	**Witnessing Disruptive Behavior *N*= 152-156**
Staffing Adequacy	-.09	**-.33*** **	**-.16***
Variance explained (R^2)	.05	**.13*** **	**.09***
Schedule Control	**-.17***	**-.25****	-.12
Variance explained (R^2)	**.07***	**.09****	.08
Schedule Satisfaction	-.07	-.04	-.01
Variance explained (R^2)	.05	.03	.07

Note: The analyses above include step 1 control variables of: age, gender, education, staff position, and unit area. Work schedule variables were entered individually in Step 2. β = standardized regression weight. *p < .05, **p < .01, ***p < .001.

Patient assaults. No significant associations were found between patient assault and staffing adequacy and schedule satisfaction, however, schedule control is associated with assault from a patient. It is important that we emphasize the serious and significant affects that assault can have on direct care providers' health and well-being. This model may illustrate different pathways that disruptive behavior and patient assaults are influenced by work context resources, but more research is needed.

Disruptive behavior. We also found that high levels of staffing adequacy and schedule control are associated with low disruptive behavior or incivility among employees in the hospital. The variance explained (R^2) in the disruptive behavior analyses are 13% and 9% for staffing adequacy and schedule control respectively, and both are highly significant. *Building resources along the lines of increasing staffing adequacy and schedule control or schedule flexibility is one approach Eastern State Hospital can take to eliminate disruptive behavior.*

Witnessing disruptive behavior. Similarly, we found that staffing adequacy is also associated with witnessing disruptive behavior. The variance explained (R^2) is high and significant at 9%. This model may reflect the large direct effects of staffing adequacy on stress-related disruptive behavior, whereby witnessing incivility between coworkers is impacted by the presence or absence of staffing resources. Building organizational resources in terms of work schedule and staffing may be important to eliminating all forms of workplace violence and incivility.

Table 6. ***The effects of work support resources on patient assaults and disruptive behavior***

	Workplace Violence Outcomes		
Organizational Resources Predictors	**Patient Assault *N*= 165-169**	**Disruptive Behavior *N*= 161-165**	**Witnessing Disruptive Behavior *N*= 155-158**
Violence Prevention Climate	**-.18***	**-.40*****	**-.29*****
Variance explained (R^2)	**.08***	**.18*****	**.15*****
Organizational Support	**-.19***	**-.41*****	**-.26****
Variance explained (R^2)	**.09***	**.19*****	**.14***
Family Supportive Supervisor Behaviors	-.14	**-.33*****	**-.21****
Variance explained (R^2)	.07	**.13*****	**.11****
Coworker Support	-.06	**-.19***	-.03
Variance explained (R^2)	.05	**.06***	.07

Note: The analyses above include step 1 control variables of: age, gender, education, staff position, and unit area. Work support variables were entered individually in Step 2. β = standardized regression weight. *p < .05, **p < .01, ***p < .001.

Patient assaults. We found significant relationships between patient assault and violence prevention climate and organizational support. When respondents reported higher violence prevention climate and organizational support, they also reported fewer patient assaults. The variance explained (R^2) for each analysis is 8% and 9% respectively, and each is highly significant. This suggests that more distal resources at the organization-level can have a significant impact on staff safety and risk of assault. Again, it is important that we emphasize the serious and significant effects that assault can have on direct care providers' health and well-being.

Disruptive behavior. We also found significant relationships between violence prevention climate, organizational support, family supportive supervisor behaviors and coworker support, and experiencing disruptive behavior. High levels of violence prevention climate, organizational support, family supportive supervisor behaviors, and coworker support are associated with low disruptive behavior, or incivility, among employees in the hospital. The variance explained (R^2) for each analysis is 18%, 19%, 13%, and 6%. *Building resources along the lines of increasing violence prevention climate, organizational support, family supportive supervisor behaviors, and coworker support is one approach Eastern State Hospital can take to eliminate disruptive behavior.*

Witnessing disruptive behavior. Similarly, we found significant relationships between violence prevention climate, organizational support and family supportive supervisor behaviors, and witnessing disruptive behavior.

High levels of violence prevention climate, organizational support, and family supportive supervisor behaviors are associated with low levels of witnessing disruptive behavior, or incivility, among employees. The variance explained (R^2) for each analysis is also significant, explaining 15%, 14%, and 11% of the total amount of variance for each model. Again this suggests that *building work support resources such is one approach Eastern State Hospital can take to prevent disruptive behavior.*

In the analyses examining staffing adequacy, schedule control and satisfaction, and social support at different levels of the organization, we found that higher schedule control, violence prevention climate, and organizational support were linked to fewer reports of patient assaults. We also found that higher staffing adequacy and schedule control are significantly related to fewer reports of coworker disruptive behavior. The data also indicate that higher levels of violence prevention climate, organizational support, family supportive supervisor behaviors (FSSB), and coworker support are related to fewer reports of disruptive behavior. That patient assault is related to fewer work schedule and work support resources, suggests that disruptive behavior and patient assault are qualitatively different types of workplace violence.

The effects of organizational context on care provider health, family and work outcomes

In this section (Tables 7-11) 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 resources as predictors of the employee outcomes. Again, 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 calculate the relationship between different sets of predictor variables and an outcome variable.

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

	Health Outcomes			
Organizational Resources Predictors Step 2	**General Health *N*= 135**	**Physical Discomfort *N*= 135**	**Physical Symptoms *N*= 135**	**Physical Injury *N*= 135**
Analysis A	β	β	β	β
Staffing and Schedule Resources				
Staffing Adequacy	.12	**-.35*** **	**-.30** **	**-.21***
Schedule Control	.03	-.03	-.05	-.16
Schedule Satisfaction	.02	.11	.05	.06
Variance explained (R^2)	.07	**.16** **	**.12** **	**.19***
Analysis B				
Levels of Support	*N*= 137	*N*= 137	*N*= 137	*N*= 137
Violence Prevention Climate	.10	**-.30** **	**-.20***	**-.24***
Family Supportive Supervisor Behaviors	.08	-.03	-.00	.02
Coworker Support	-.08	-.01	- .01	.05
Variance explained (R^2)	.08	**.13***	**.06***	**.15***

Note: The analyses above include step 1 control variables of: age, education, tenure, 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 analysis (A) comparing staffing adequacy, schedule control and satisfaction, we find that better staffing adequacy is significantly related to less physical discomfort/pain, fewer physical symptoms, and fewer physical injuries. The variance explained by the models for physical discomfort/pain, physical symptoms, and physical injury was high and highly significant, at 16%, 12% and 19% respectively.

The analysis (B) compared social support at different levels in the organization in relation to health outcomes. Violence prevention climate is significantly related to the health outcomes of physical discomfort/pain, physical symptoms, and physical injury. The variance explained by the models is significant, at 13%, 6% and 15% respectively.

Table 8. ***The effects of organizational context resources on health and safety outcomes***

	Health & Safety Outcomes		
Organizational Resources Predictors Step 2	**Depressive Symptoms *N*= 135**	**Sleep Disruption *N*= 145**	**Safety Compliance *N*= 135**
Analysis A	β	β	β
Staffing and Schedule Resources			
Staffing Adequacy	**-.25****	**-.36*****	-.16
Schedule Control	-.08	.07	**.30****
Schedule Satisfaction	-.10	-.09	.11
Variance explained (R^2)	**.16****	**.16*****	**.13****
Analysis B			
Levels of Support	*N*= 137	*N*= 145	*N*= 137
Violence Prevention Climate	**-.24***	**-.25***	-.00
Family Supportive Supervisor Behaviors	-.05	.03	**.22***
Coworker Support	-.02	.09	**.29*****
Variance explained (R^2)	**.12***	**.08***	**.17*****

Note: The analyses above include step 1 control variables of: age, education, tenure, 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 analysis (A) comparing staffing adequacy, schedule control and satisfaction, we find that higher staffing adequacy is significantly related to fewer depressive symptoms and less sleep disruption, while higher reported schedule control is related to greater safety compliance. The variance (R^2) explained for all three health and safety outcomes was significant at 16%, 16% and 13% respectively.

The analysis (B) compared social support at different levels in the organization in relation to health and safety outcomes. Here, the data indicate that higher levels of violence prevention climate are related to lower levels of self-reported depressive symptoms and less sleep disruption. Family supportive supervisor behaviors and coworker support are also significantly related to safety compliance. The variance (R^2) explained for each model iss significant, especially the safety compliance model at 17% variance explained.

Table 9. ***The effects of organizational context resources on family-related outcomes***

	Family Outcomes			
Organizational Resources Predictors Step 2	**Work-Family Conflict *N*= 108**	**Partner Support *N*= 108**	**Relationship Satisfaction *N*= 108**	**Life Satisfaction *N*= 108**
Analysis A				
Staffing and Schedule Resources	β	β	β	β
Staffing Adequacy	-.14	.16	.15	**.34****
Schedule Control	-.05	-.19	-.19	.14
Schedule Satisfaction	**-.54*****	.18	**.23***	.18
Variance explained (R^2)	**.42*****	.10	.11	**.29*****
Analysis B				
Levels of Support	*N*= 111	*N*= 111	*N*= 111	*N*= 111
Violence Prevention Climate	**-.31****	-.07	-.06	.19
Family Supportive Supervisor Behaviors	-.12	**.24***	.15	**.24***
Coworker Support	.17	.10	.08	.06
Variance explained (R^2)	**.20*****	.09	.06	**.15****

Note: The analyses above include Step 1 control variables of: age, education, position tenure, staff position, shift, 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 schedule satisfaction, we find that better staffing adequacy is related to greater life satisfaction, while greater schedule satisfaction is significantly related to less work-to-family conflict and greater relationship satisfaction. The variance (R^2) explained for both the work-to-family conflict and life satisfaction models are quite high for organizational research, and highly significant, at 42% and 29% respectively. The high effect sizes are indicative of the strong contributions these organizational resources make to these personal and family outcomes.

The analyses (B) compared social support at different levels in the organization in relation to family-related outcomes. Here, the data indicate that higher levels of violence prevention climate are related to less work-to-family conflict, and family supportive supervisor behaviors are significantly related to perceptions of greater partner support and life satisfaction. The variance (R^2) explained for both the work-to-family conflict and life satisfaction models is significant, at 20% and 15% respectively. That these work-support variables are significant in these analyses supports the model design and suggests a spillover effect between work and home domains.

Table 10. ***The effects of organizational context resources on work-related outcomes: Job dissatisfaction and burnout***

	Work Outcomes		
Organizational Resources Predictors Step 2	**Job Dissatisfaction *N*= 132**	**Burnout Exhaustion *N*= 132**	**Burnout Cynicism *N*= 132**
Analysis A			
Staffing and Schedule Resources	β	β	β
Staffing Adequacy	**-.23****	**-.35*****	**-.37*****
Schedule Control	**-.39*****	-.15	-.16
Schedule Satisfaction	**-.22****	**-.21***	-.12
Variance explained (R^2)	**.43*****	**.33*****	**.30*****
Analysis B			
Levels of Support	*N*= 131	*N*= 131	*N*= 131
Violence Prevention Climate	**-.39*****	**-.41*****	**-.43*****
Family Supportive Supervisor Behaviors	**-.38*****	-.18	-.14
Coworker Support	-.02	-.01	.04
Variance explained (R^2)	**.42*****	**.32*****	**.30*****

Note: The analyses above include step 1 control variables of: education, position tenure, shift, 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 analysis (A) comparing staffing adequacy, schedule control, and schedule satisfaction, the data indicate that higher staffing adequacy is significantly related to lower job dissatisfaction, lower burnout – exhaustion and lower burnout – cynicism. Higher reported schedule control is also related to lower job dissatisfaction, and finally, higher schedule satisfaction is related to lower job dissatisfaction and lower burnout - exhaustion. Each model had very high levels of variance explained; 43%, 33% and 30% of variance accounted for, respectively. These are very high effect sizes in organizational behavior research and are indicative of the strong contributions these staffing and schedule resources make to employee work outcomes.

Analysis (B) compared social support at different levels in the organization in relation to work outcomes. Here, the data indicate that higher levels of violence prevention climate and higher reported family supportive supervisor behaviors are related to lower amounts of job dissatisfaction. Also higher levels of violence prevention climate are related to significantly lower amounts of burnout – exhaustion and burnout - cynicism. Each model again had very high levels of variance explained; 42%, 32% and 30% of variance accounted for, respectively. These are also very high effect sizes in organizational research and are indicative of the strong contributions these support resources make to work outcomes.

Table 11. ***The effects of organizational context resources on work-related outcomes: Turnover intentions, patient quality of care, and satisfaction with patient care quality***

	Work Outcomes		
Organizational Resources Predictors Step 2	**Turnover Intentions *N*= 132**	**Patient Quality of Care *N*= 132**	**Satisfaction with Patient Care *N*= 132**
(Analysis A)			
Staffing and Schedule Resources	β	β	β
Staffing Adequacy	**-.28****	**.77*****	**.26****
Schedule Control	-.04	**.22*****	.16
Schedule Satisfaction	**-.27****	.02	.18
Variance explained (R^2)	**.24*****	**.81*****	**.21*****
(Analysis B)			
Levels of Support	*N*= 131	*N*= 131	*N*= 131
Violence Prevention Climate	**-.34*****	**.59*****	**.40*****
Family Supportive Supervisor Behaviors	**-.20***	**.20****	**.23***
Coworker Support	.18	.00	-.03
Variance explained (R^2)	**.23*****	**.58*****	**.28*****

Note: The analyses above include step 1 control variables of: education, position tenure, shift, 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 analysis (A) comparing staffing adequacy, schedule control, and schedule satisfaction we find that higher staffing adequacy is significantly related to each work-related outcome: lower turnover intentions, better self-reported patient quality of care, and higher satisfaction with patient care. Higher reported schedule control is also significantly related to higher patient quality of care, while higher schedule satisfaction is significantly related to lower turnover intentions. All three analyses have large and significant effect sizes. Most importantly, the staffing and schedule resources along with the control variables, account for 81% of the model variance for patient quality of care.

The analysis (B) compared social support at different levels in the organization in relation to work outcomes. Here, the data suggest that higher levels of violence prevention climate and family supportive supervisor behaviors are related to lower turnover intentions, higher levels of patient quality of care, and higher satisfaction with patient care. The variance explained in each model is high for organizational research and highly significant, accounting for 23%, 58%, and 28% of the variance, respectively.

Workplace Violence and Disruptive Behavior Relationships with Care Provider Outcomes

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 in turn.

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

	Health Outcomes			
Workplace Violence Predictors Step 2	**General Health *N*= 149**	**Physical Discomfort *N*= 153**	**Physical Symptoms *N*= 150**	**Physical Injury *N*= 149**
	β	β	β	β
Patient Assault	-.86	**.27****	**.38****	**.74*****
Variance explained (R^2)	.06	**.14***	**.10****	**.24*****
Disruptive Behavior	-.17	**.32*****	**.41*****	**.34****
Variance explained (R^2)	.08	**.16*****	**.21*****	**.13****
Witnessing Disruptive Behavior	-.31	.07	.04	.11
Variance explained (R^2)	.06	.08	.05	.09

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

Health Outcomes

General health, physical discomfort-pain, physical symptoms, and physical injury. We find no effects for reports of general health in relation to the workplace violence variables. However, physical discomfort-pain, physical symptoms, and physical injury are associated with patient assault and disruptive behavior. Care providers who reported experiencing assault from a patient and more disruptive behavior also reported more physical discomfort, more physical symptoms, and more physical injuries. The variance explained (R^2) in each analyses is high and highly significant, ranging from 10% for the relationship between patient assault and physical discomfort, to 24% for the relationship between patient assault and physical injury.

It is interesting that higher levels of disruptive behavior are significantly related to care provider physical injury and stress-related physical discomfort and physical pain. Disruptive behavior among hospital employees may contribute to a stressful environment for patients who overhear and may respond anxiously to care providers' stress. In addition, care providers experiencing stress from coworker disruptive behavior may have

more difficulty responding to patient needs therapeutically – both of these issues 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*= 149**	**Sleep Disruption *N*= 147**	**Safety Compliance *N*= 151**
	β	β	β
Patient Assault	**.34****	**.27***	-.03
Variance explained (R^2)	**.14****	**.07***	.04
Disruptive Behavior	**.38*****	**.34*****	.05
Variance explained (R^2)	**.21*****	**.13*****	.05
Witnessing Disruptive Behavior	.05	.01	.01
Variance explained (R^2)	.07	.03	.04

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 compliance. We found no effects for reports of depressive symptoms, sleep disruption or safety compliance in relation to witnessing disruptive behavior. However, patient assault and disruptive behavior are significantly associated with depressive symptoms and sleep disruption. Care providers who reported more patient assaults and more disruptive behavior also reported more depressive symptoms and more sleep disruption. The variance explained (R^2) in these analyses is high and highly significant, ranging from 13% for the relationship between disruptive behavior and sleep disruption, to 21% for the relationship between disruptive behavior and depressive symptoms. These findings indicate that workplace violence, in the form of patient assault and disruptive behavior, is significantly associated with the both the physical health and psychological well-being of direct-care providers, and again points toward the important role of disruptive behavior as a stressor in psychiatric care providers' mental and physical health outcomes.

Table 14. ***The effects of workplace violence on family-related outcomes: Work-family conflict, partner support, relationship satisfaction, and life satisfaction***

	Family Outcomes			
Workplace Violence Predictors Step 2	**Work-Family Conflict *N*= 166**	**Partner Support *N*= 123**	**Relationship Satisfaction *N*= 124**	**Life Satisfaction *N*= 160**
	β	β	β	β
Patient Assault	**.38****	-.00	.17	**-.15***
Variance explained (R^2)	.07	.08	.05	**.09***
Disruptive Behavior	**.49*****	**-.21****	-.30	**-.35****
Variance explained (R^2)	**.14*****	**.13****	.07	**.13****
Witnessing Disruptive Behavior	.06	-.03	-.09	-.00
Variance explained (R^2)	.03	.09	.06	.05

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 find no effects for reports of relationship satisfaction in relation to the workplace violence variables. However, more patient assaults is related to higher work-to-family conflict and lower life satisfaction. Direct care providers who reported more disruptive behavior also reported more work-to-family conflict, lower partner support, and lower life satisfaction. The variance explained (R^2) for each analysis is significant at 14% and 13%. These findings suggest that disruptive behavior is a powerful stressor that has a negative spillover effect on psychiatric care providers' family and personal life outside of work. Patient assault is also significantly related to work-to-family conflict and life satisfaction outcomes, further supporting the suggestion of spillover effects from workplace violence on the non-work life of direct care providers.

Table 15. ***The effects of workplace violence on work-related outcomes: Job dissatisfaction, and burnout – exhaustion and cynicism***

	Work Outcomes		
Workplace Violence Predictors Step 2	**Job Dissatisfaction *N*= 151**	**Burnout Exhaustion *N*= 152**	**Burnout Cynicism *N*= 153**
	β	β	β
Patient Assault	**.30***	**.86*****	**.84*****
Variance explained (R^2)	**.10***	**.19*****	**.23*****
Disruptive Behavior	**.55*****	**.48*****	**.90*****
Variance explained (R^2)	**.21*****	**.25*****	**.31*****
Witness Disruptive Behavior	.06	**.27*****	**.23****
Variance explained (R^2)	.08	**.17*****	**.19*****

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. Both, patient assault and disruptive behavior are significantly related to all three work outcome variables of *job dissatisfaction*, *burnout – cynicism*, and *burnout – exhaustion*. Care providers who reported more witnessing disruptive behavior reported higher levels of burnout – exhaustion and cynicism. As with other care provider outcomes, our findings indicate the significant role that *patient assaults* and *disruptive behavior* can have on care providers' reports of job dissatisfaction and burnout. The variance explained (R^2) for these models, is significant, from 10% to 31%.

These relationships suggest that exposure to workplace violence negatively impacts work-related outcomes in the form of job dissatisfaction, work-stress and burnout.

Table 16. ***The effects of workplace violence on work-related outcomes: Turnover intentions, patient quality of care, and satisfaction with patient care quality***

	Work Outcomes		
Workplace Violence Predictors Step 2	**Turnover Intentions *N*= 151**	**Patient Quality of Care *N*= 151**	**Satisfaction with Patient Care *N*= 149**
	β	β	β
Patient Assault	.11	**-.51*** **	**-.37***
Variance explained (R^2)	.07	**.11***	**.11***
Disruptive Behavior	**.47****	**-.61*** **	**-.43*** **
Variance explained (R^2)	**.14****	**.20*** **	**.16****
Witnessing Disruptive Behavior	.04	**-.14****	-.05
Variance explained (R^2)	.07	**.13***	.08

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 find no effects for reports of turnover intentions or satisfaction with patient care in relation to our measure of *witnessing disruptive behavior*. However, turnover intentions, patient quality of care, and satisfaction with patient care are all associated with reporting *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, *patient assault* and *witnessing disruptive behavior* variables are significantly associated with low patient quality of care scores, and patient assault was significantly related to lower satisfaction with patient care. These findings add to an emerging pattern in our data that provides evidence regarding the strong impact of disruptive behavior on psychiatric care providers' health and work experiences, most significantly here, on their perceptions of the quality of patient care explaining 20% and 16% of variance in the model for disruptive behavior and witnessing such behavior.

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 assault and disruptive behavior because these 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. We are developing this with direct-care staff and stakeholders at Western State Hospital, but our eventual training product will be available to Eastern State Hospital for modification to fit the organization's needs.

Work Context Resources:

High Staffing Adequacy is related to:

- low physical discomfort-pain
- low physical symptoms
- low physical injury
- low depressive symptoms
- low sleep disruption
- high life satisfaction
- low job dissatisfaction
- low burnout – exhaustion
- low burnout – cynicism
- low turnover intentions
- high patient quality of care
- high satisfaction with patient quality of care
- **low disruptive behavior**
- **low witnessing disruptive behavior**

High Schedule Control is related to:

- high safety compliance
- low job dissatisfaction
- high patient quality of care
- **low patient assault**
- **low disruptive behavior**

High Schedule Satisfaction is related to:

- low work-to-family conflict
- high relationship satisfaction
- low job dissatisfaction
- low burnout – exhaustion
- low turnover intentions

High Violence Prevention Climate is related to:

- low physical discomfort – pain
- low physical symptoms
- low physical injury
- low depressive symptoms
- low sleep disruption
- low work-to-family conflict
- low job dissatisfaction
- low burnout – exhaustion
- low burnout – cynicism
- low turnover intentions
- high patient quality of care
- high satisfaction with patient quality of care
- **low patient assault**
- **low disruptive behavior**
- **low witnessing disruptive behavior**

High Organizational Support is related to:

- **low patient assault**
- **low disruptive behavior**
- **low witnessing disruptive behavior**

High Family Supervisor Supportive Behaviors are related to:

- high safety compliance
- high partner support
- high life satisfaction
- low job dissatisfaction
- low turnover intentions
- high patient quality of care
- high satisfaction with patient care
- **low disruptive behavior**
- **low witnessing disruptive behavior**

High Coworker Support is related to:

- high safety compliance
- **low disruptive behavior**

Workplace Violence Demands and Health, Family, and Work Outcomes:

Patient Assault is related to:

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

High Disruptive Behavior is related to:

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

High Witnessing Disruptive Behavior is related to:

- high physical injury
- high burnout – exhaustion
- high burnout – cynicism
- low patient quality of care

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. We propose that organizational culture and relational aspects of the workplace are necessary targets of supervisor and care provider behavioral interventions. Interventions we propose to develop in collaboration with Western State Hospital will target employee and supervisor support for schedule flexibility, and supervisor and coworker support for violence prevention and safety, and work-family integration.

In our analyses, we found a pattern of results from the organizational context that demonstrates the need to build organizational resources through increasing *staffing adequacy* and *schedule satisfaction, as well as designing interventions targeted at disruptive behavior and organizational/supervisor support for work-life integration*. We repeat here that staffing adequacy is a complex issue that the organization must prioritize for resolution with further examination and action.

We found many significant patient assault and disruptive behavior relationships from our survey data. In talking with the Western State Hospital Intervention Development Team that we have been meeting with since mid-March of 2012, 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. However, coworker 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 risk hazard and a strong stressor for care providers. We pay close attention to the results for patient assault for this reason, and emphasize the importance of those relationships such as the relationships of Poor violence prevention climate and poor organizational support with patient assault which negatively impact this highly stressful form of workplace violence. State psychiatric hospital work with severely mentally ill patients is psychologically demanding. With the workplace violence conditions of patient assault combined with coworker disruptive behavior, hospital workers potentially work under high chronic stress conditions. Providing hospital workers with a violence prevention climate and support resources is one way hospital management can reduce the negative impact of these stressors on employee health, family and work.

We want to highlight *violence prevention climate* and *family supportive supervision* as points of intervention because these variables were related to a large number of health, family, and work outcomes as well as 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 a prevention climate and 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. Through developing a culture of work-life engagement and integration, the hospital leadership can increase an important organizational resource for the well-being of care providers and, in turn, for the well-being of their patients.

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 and Schedule Flexibility Support for Work-Life Management

Staffing adequacy, when low, was related to many outcomes, most importantly, increased disruptive behavior, but also worse 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 earlier qualitative findings supported addressing staffing adequacy as well and did clarify some of the complex dynamics of high disruptive behavior, low morale, high turnover, difficulty filling vacancies, and unscheduled absences – all factors that reduce staffing adequacy and stability and increase the 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
- Consider working with SHARP researchers to modify the intervention currently under development with Western State Hospital that addresses supervisor support for workplace violence prevention for patient and staff safety, coworker support, schedule flexibility, and work-family 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 at ESH have employees who report less job dissatisfaction, lower turnover intentions and higher patient quality of care and life satisfaction. 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, especially for those with less hospital tenure and the most patient contact hours
- 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 staff surveys

Recommendation #2:

Address Disruptive Behavior by Increasing Support Resources

High levels of disruptive behavior and witnessing disruptive behavior are powerful work stressors at ESH and are taking a toll on the health, well-being, and morale of care providers. Patient and care provider safety are at risk as well as patient quality of care. According to our survey data disruptive behavior is directly related to many

health, family, and work outcomes and occurs among care providers, management, and union representatives. Eliminating disruptive behavior should be a major goal for Eastern State Hospital. Specifically:

- Hospital leadership should focus on developing a program to resolve disruptive behavior as a primary objective. Enlist participation from all hospital stakeholders at all organizational levels and from all disciplines
- Research interventions for disruptive behavior and adopt and implement an intervention model hospital wide, including strong and clearly delineated policies, procedures, and practices (See Hickson et al., 2007)
- 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 versus the negative effects of disruptive behavior on patient quality of care and patient and staff safety
- Create and promote a positive violence prevention and safety culture with continuous learning through effective and supportive debriefing processes and techniques

We are pursuing the next phase of the Washington Work, Stress, and Health Project with the development of intervention training modules focused on patient and staff safety culture, social support and schedule flexibility for work-life management. Future work will be ongoing for the current WWSH project at Western State Hospital, though we will offer the final training product to Eastern State Hospital for modification as well. We look forward to continuing our work with a very dedicated and engaged WSH Intervention Development Team, and are excited about this project as we go forward to develop the supervisor training intervention and further investigate the issues surrounding workplace violence and disruptive behavior for psychiatric care providers.

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 key resources to assist care provider's dealing with workplace violence stressors: increase staffing adequacy and schedule flexibility for work-life management, and address disruptive behavior by increasing supportive intervention resources at all levels of the organization. ***Finally, we emphasize the good news from this study and report that when violence prevention climate, family support, staffing and scheduling resources are high, negative outcomes are low including patient assault and disruptive behavior.***

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 state psychiatric hospitals 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, Silverstein, & Jellison, 2011) 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 state psychiatric hospitals, collecting administrative data on objective outcomes such as unscheduled absences and actual turnover would strengthen the study design.

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 and perceptions of staffing adequacy cannot capture this complexity. Specific objective 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 research on the complexity of achieving staffing adequacy is needed in health care organization research.

Future work will be ongoing for the current WWSH project at Eastern 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 WSH Intervention Development Team as we go forward to develop the proposed intervention, which will be shared with Eastern State Hospital for modification

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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 – Open Ended Question	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 compliance [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 – Open Ended Question	Is there anything else you would like to add about workplace violence/incivility in your hospital?
Workplace Assault [a]	1	-	SHARP developed – Open Ended Question	[*If assaulted*] What happened?

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. Other Descriptive Statistics

Table 17. ***Direct Care Providers – Descriptive Statistics for Social Support Measures***

	Descriptive Statistics				
Organizational Resources	**N**	**Mean**	**Standard Deviation**	**Minimum**	**Maximum**
Violence Prevention Climate	178	2.94	1.04	1	5
Organizational Support	176	2.14	.99	1	5
Family Supportive Supervisor Behaviors	176	3.11	1.03	1	5
Coworker Support	176	3.82	.84	1	5

Table 18. ***Response Rate by Position***

Care Provider Position	*Number of Direct Care providers N= 457*	Direct Care Provider Survey respondents *N= 152*	Response Rate %
RN3	40	14	.35
RN2/RN1	92	34	.37
LPN	26	11	.42
PSN	8	6	.75
Physician/Psychiatrist	21	3	.14
Psychologist	12	0	0
Social Worker	20	4	.20
Mental Health Tech (MHT)	154	57	.37
Psychiatric Security Attendant (PSA)	49	14	.29
Rehab Therapists (OT/PT/RT)	35	9	.26

*Note: Other care provider positions not included in this analysis includes physician aides and assistants, forensic therapists, nurse specialists, custodial/housekeeping workers, and other positions outside the care provider categories specified

Appendix C. Study Specific Aims and Hypotheses

Aim 1: to examine the relationships between workplace psychosocial context and workplace violence and disruptive behavior has 6 testable hypotheses:

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

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

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

(1.4) 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 2: to examine the relationships between workplace psychosocial context and 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, will report lower general health perceptions, higher depressive symptoms, higher 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, will have lower safety compliance;

(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, will report higher work-to-family conflict, lower partner support, and lower 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, will report higher job dissatisfaction, turnover intentions, and burnout (exhaustion and cynicism) and lower patient quality of care and quality of care satisfaction.

Aim 3: to examine the relationships between workplace violence and disruptive behavior and employee health, safety, family and work outcomes has 4 testable hypotheses:

(3.9) 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;

(3.10) 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 compliance;

(3.11) 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;

(3.12) 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.