COMPLIANCE WITH SAFETY PRACTICES AMONG NURSES: EXPLORING THE LINK BETWEEN ORGANIZATIONAL SAFETY CLIMATE, ROLE DEFINITIONS, AND SAFE WORK PRACTICES

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ABSTRACT

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Accidental exposure to bloodborne infections is a serious occupational hazard affecting thousands of health care workers. According to surveillance evidence, the level of compliance with safety regulations among health care workers is often low. This cross-sectional, correlational research investigated psychological processes involved in safety compliance. Occupational safety and industrial/organizational psychology theories were integrated to identify organizational and psychological factors that are associated with safety compliance among hospital nurses. The work-systems model of occupational safety proposed by DeJoy, Gershon, and Murphy (1998) was expanded for this study by incorporating the construct of role definition (Hofmann, Morgeson, & Gerras, 2003; Morrison, 1994). 170 nursing professionals and their 103 coworkers employed at two Mid-Western medical centers completed self-administered surveys. The final sample of 95 matched nurse-coworker dyads was analyzed. Safety compliance ratings provided by a coworker were positively correlated with self-reported compliance-specific role definitions, overall job satisfaction, conscientiousness, positive mood at work, and individually-perceived safety climate within one's hospital unit. Safety compliance was inversely correlated with negative mood at work. Men were less likely to comply with safety, compared to women. Compliance-specific role definitions moderated the conscientiousness-compliance relationship such that, when role definitions were broad, the conscientiousness-compliance relationship was weak. Role definitions mediated the relationship between negative mood and compliance. Practical and theoretical implications of these findings are discussed.

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INTRODUCTION

Accidental exposure to bloodborne pathogens is an occupational hazard that impacts thousands of health care workers (HCWs). This type of occupational injury inflicts a tremendous toll in terms of human and economic costs. The risk of exposure is real for thousands of HCWs including nursing staff, lab workers, doctors, homecare providers, and housekeepers who have contact with patients and patients' specimens while working in hospital, homecare, and laboratory settings (NIOSH, 1998). The risk of injuries significantly increases when HCWs do not follow safety guidelines. The present study addresses this commonly occurring problem by focusing on safety compliance and by identifying its psychological and organizational predictors.

Before the problem can be addressed, there is still a great deal to be learned about the factors that predict compliance with safety regulations. The aim of the present study was to explore the psychological processes involved in adhering to safer work practices. This study was also an attempt to integrate two distinct areas of research-- occupational safety and industrial/organizational psychology-- to identify organizational (i.e., work conditions and safety climate) and individual factors (i.e., personality, job attitudes, and role definitions) that predict compliance with safety regulations. The work-systems model of occupational safety proposed by DeJoy, Gershon, and Murphy (1998) was expanded for this study by incorporating the construct of role definition (Hofmann, Morgeson, & Gerras, 2003; Morrison, 1994). In addition, the present study was an extension of Clark, Zickar, and Jex (manuscript under review) and a further investigation of the effect of role definition breadth on organizational behavior. The results of this exploratory study may inform future research efforts and help improve work practices.

Workplace Injury

Workplace injury is a pervasive and costly problem. The National Safety Council (1999) reported that in 1998 there were 5,100 workplace fatalities and 3.8 million disabling injuries in the United States. According to a United States Bureau of the Census report (2000), 80 million days of productivity were lost due to work-related accidents in 1998. In addition to economic costs associated with loss of productivity, injuries have substantial psychological costs. Workplace injury and accidents have been linked to reduced job satisfaction, increased intent to quit (Barling, Kelloway, & Iverson, 2003), as well as lingering psychological symptoms similar to posttraumatic stress disorder (Asmundson, Norton, Allerdings, Norton, & Larsen, 1998). Barling et al. (2003) studied both frequency and severity of workplace injuries among employees from a variety of occupations. The authors found that employees who are involved in accidents at work feel dissatisfied with their jobs and are more likely to think about leaving.

Occupational Injuries Associated with Bloodborne Pathogens

The National Institute for Occupational Safety and Health (NIOSH) identified the health care industry as a high-risk sector for occupational injuries. High rates of occupational injuries in health care are attributed to dramatic organizational changes involving staff reduction, long work hours, complex skill mix, and high role demands (NIOSH, 2002). Another important risk factor is potential of exposure to bloodborne contaminates associated with providing patient care. HCWs who come in contact with contaminated patients' blood and specimens are at risk of becoming infected themselves. Exposure to bloodborne pathogens could cause serious or fatal infections. HCWs are at risk for becoming infected when they accidentally cut or puncture their skin with contaminated sharp objects (i.e., percutaneous injuries) and when they get splashed in the face with contaminated body fluids while caring for infected patients. The Centers for

Disease Control and Prevention (CDC) estimate that HCWs sustain between 600,000 and 800,000 percutaneous injuries annually. Current evidence from around the world suggests that accidental splashes are common in many medical settings (Mamoun & Ahmed, 2005; Mattner & Tillmann, 2004; Tarantula, et al., 2005). The rates of infection due to splashes are more difficult to estimate because HCW are not legally required to report those incidents.

Of primary concern is the occupational exposure to the human immunodeficiency virus (HIV), hepatitis B (HBV), and hepatitis C (HCV). According to the data provided by the CDC, not all exposed individuals become infected and the risk of infection after an exposure varies according to the type of infection and the health status of the exposed employee. The risk from a single needlestick or cut exposure to HBV-infected blood ranges from 6% to 30%. For HCV, the risk is approximately 1.8%, whereas, for HIV, the risk is found to be below 0.1%. Despite multiple preventive measures, the rate of occupational exposure and subsequent infection with bloodborne pathogens such as viruses and microorganisms is still a major cause for concern (National Institutes of Occupational Safety and Health (NIOSH), 1998; Occupational Safety and Health Administration (OSHA, 1991). CDC has estimated that approximately 400 HCWs have been infected with HBV in 2001. In the period between 1985 and 2001, there have been 57 documented cases and 138 possible cases of occupationally acquired HIV among HCWs (CDC, 2003).

Universal Precautions

Despite its low base rate, infection due to an occupational exposure to bloodborne pathogens is a real and potentially deadly threat for thousands of health care workers. The aim of the present study was to reduce the danger of occupational exposure through better

understanding of organizational and psychological mechanisms involved in compliance with obligatory safety precautions.

Workplace injuries in health care can be reduced by improving medical equipment and by changing employees' behavior through promoting safer work practices. CDC (2003) has estimated that 62 to 88 percent of sharps-related injuries could potentially be prevented through the use of safer medical devices such as retractable needles (i.e., engineering controls). Another approach to reducing injuries is to focus on promoting safer work practices among employees. Universal Precautions (UP) is a set of guidelines for work practices that have been developed by the CDC in 1987 to prevent percutaneous injuries and protect HCWs from other types of accidental exposure to bloodborne pathogens. The objective of UP is to minimize HCWs' direct contact with blood and other potentially contaminated body fluids by treating all patients' specimens as potentially contaminated. In addition to promoting the use of engineering controls, it promotes such work practices as wearing protective clothing, not re-capping used needles, proper disposal of used sharps (i.e., needles and scalpels), and frequent hand-washing. Implementing UP has shown to significantly reduce the rates of exposure and infection (Wong et al., 1991).

Non-compliance

In 1991, after the passage of the Occupational Safety and Health Administration Blood-Borne Pathogens Standards (OSHA, 1991), compliance with UP became mandatory. Despite this, non-compliance with safety policies remains a major cause of work-related injuries in health care settings (Dement, et al., 2004; Hersey & Martin, 1994; Probst & Brubaker, 2001; Sax, et al, 2005). Despite a general increase in awareness of the risks associated with exposure, there is deeply troubling evidence of a widespread lack of compliance with UP among health care

workers (CDC, 1997; Gershon et al., 1995). Gershon and colleagues measured 11 UP-related work behaviors and found that self-reported rates of full compliance among nurses ranged from 63 to 97 percent. For example, only 63% of respondents reported "always" wearing recommended eye protection.

Non-compliance with safety regulations appears to be a major risk factor contributing to workplace injuries. Before the problem of non-compliance can be addressed, there is a great deal to be learned about the factors that predict compliance with safety regulations. Complex and multidetermined work behaviors such as safety compliance can only be fully understood when they are examined in the broader organizational context. DeJoy at al. (1998) proposed a comprehensive work-systems model of occupational safety and health that incorporates job/task, worker, and environmental/organizational factors. De Joy et al.'s model is reproduced in Figure 1. In DeJoy's theoretical model, organizational factors are represented by physical and social characteristic of the work environment such as workplace design and organizational safety climate. According to DeJoy et al., medical settings are complex and dynamic systems that involve groups of highly specialized employees who are interacting not only with each other but also with various types of medical equipment and technology. Workload and situational demands may vary from one setting to another leading to varying degree of emphasis on compliance with safety. Overall safety climate in the organization is an important contextual predictor of safety compliance.

According to DeJoy et al.'s model, worker factors pertain to knowledge, skills, attitudes, and beliefs related to safety practices. Many studies suggest that most HCWs today posses adequate knowledge of UP practices. A national survey found that 89% of patient care staff have attended at least one training session on infection control practices (Hersy & Martin,

1994). However, it was also found that knowledge does not always lead to full compliance (Gershon et al., 1995). It is also important to consider HCWs' beliefs about their personal health risks and threats associated with occupational exposure and their beliefs in the effectiveness of UP. Not all HCWs may put equal emphasis on absolute safety compliance. Hoffman-Terry et al. (1992) found that some medical and surgical residents fail to formally report every single exposure incident because they do not view every exposure as a significant health risk. This contradicts the guiding principle of UP— treating all patients' specimens as potentially contaminated and dangerous. Job/task factors identified by DeJoy at al. are the unique physical and psychological demands of each particular job that contribute to the risk of exposure. Health care field is very specialized and every setting is associated with unique set of job demands as well as with specialized medical equipment. For example, a surgical nurse working in a hospital has a task set that is very different from that of a personal care assistant's who is providing home patient care. A work-systems model of safety behavior posits that worker, job/task, and environmental factors may be equally important in determining safety compliance. A comprehensive study of safety compliance should incorporate variables from each of these categories. Such a model is proposed and tested in the present study. DeJoy's et al model is further improved by including the construct of role definitions and by proposing interactive effects of work-system elements.

PRESENT STUDY

DeJoy et al.'s (1998) theoretical model emphasizes the complexity of work systems but it contains no predictions about the interrelationships between job/task, worker, and organizational predictors. The existing model is too general and, therefore, not very practical because it does not specify any causal links between its elements. A well-developed model would allow researchers as well as health care practitioners to better understand each variable's unique contribution to predicting safety compliance. Research in this area should also consider the possibility of interactions between the components of the work system as well as main effects.

The present study is an attempt to further develop DeJoy et al.'s model of safety behavior and to apply role theory and the multi-level theory to further investigate the links and possible cross-level interactions between the predictors. In the present study, an updated model of safety compliance was developed and empirically tested by integrating the knowledge accumulated by industrial/organizational psychologists and occupational safety researchers. The proposed model incorporated the following key components:

- *Safety compliance* is the outcome variable. It refers to nurses' actual observable behavior on the job as indicated by their adherence to the CDC proscribed safety practices outlined in the Universal Precautions. Safety compliance was observed and reported by nurses' coworkers.
- *Compliance-related role definition* is nurses' subjective perceptions of whether or not compliance with UP is an expected and required part of their jobs. Role definition

was expected to be a strong predictor of safety compliance and to interact with other predictors.

- Worker variables such as *personality variables*, *mood*, and *job attitudes* were expected to predict safety compliance, but this relation was expected to be moderated by role definitions.
- *Organizational safety climate* is a group-level environmental variable that was expected to be related to both role definition and safety compliance.

Each of these variables is further explained below.

Role Definition

Role definition is the employee's subjective assessment of the broadness of the category of behaviors that he or she is required to perform by his or her employing organization (Bachrach & Jex, 2000). Traditionally, most researchers have adopted the supervisor's point of view when defining what was or was not a required work behavior. Morrison (1994) was one of the first researchers to stress the importance of understanding how job incumbents conceptualize their job responsibilities. Morrison (1994) suggested that employees' perspectives should be represented by their self-reported role definitions. Role definitions can be symbolized by two overlapping concentric circles (See Figure 2). An employee's perceptions of the entire behavioral domain of his or her organizational performance is included within the larger circle, whereas the behaviors that are believed to be required and expected lie within the boundary of a smaller central circle. Behaviors outside of the central circle would be considered discretionary. Depending on the breadth of the employee's unique role definitions, a specific behavior such as compliance with safety regulations may either lie outside of the boundary of job requirement domain or be included within it.

Morrison found evidence of variance in role definition breadth between medical center employees who held clerical jobs. Office employees who held equivalent jobs and had identical job descriptions nevertheless held different perceptions of the breadth of their formal roles. Those employees who included many behaviors in the required category were more likely to perform those behaviors compared to their coworkers who held narrow perceptions of their roles. Morrison attributed this to the fact that employees more closely associate required behaviors with organizational rewards and sanctions compared with non-required behaviors (Katz, 1964; Organ, 1988; Puffer, 1987). Therefore, the overall motivation to perform required behaviors should be greater compared to discretionary behaviors.

This explanation is consistent with the Expectancy Theory of work motivation. Vroom's (1964) theory posits that employees associate each work behavior with a particular organizational outcome such as a reward (e. g., promotion) or a sanction (e. g., termination). Obtaining a desired reward or avoiding a punishment is a universal motivator. Behaviors that are strongly associated with an outcome are said to be high on instrumentality. In an organizational setting where rewards are contingent on employees' performance, required behaviors should carry higher instrumentality compared to discretionary behaviors. If a person believes that performing a particular behavior is likely to lead to a desired outcome, his or her motivation is expected to be strong. Similarly, if an employee believes that a failure to perform a particular behavior is strongly associated with punishment, he or she is likely to perform that behavior to avoid the negative outcome.

Recently, employees' role definitions have been linked to actual performance and other important organizational outcomes (Hofmann, Morgeson, & Gerras, 2003; Tepper, Lockhart, & Hoobler, 2001; Tepper & Taylor, 2003; Zellars, Tepper, & Duffy, 2003). Research

found consistent evidence that employees who have broad role definitions are more likely to engage in behaviors that go above and beyond their formal job requirements (i.e., organizational citizenship). Tepper and Taylor (2003) found that among members of the National Guard, organizational citizenship behavior (OCB) role definition was positively correlated with their actual OCBs ($r = .19$, $p < .01$). Role breadth and role performance were correlated .29 in a study by Morgeson, Delaney-Klinger, and Hemingway (2005). Hoffmann et al. (2003) found that safety role definitions predicted actual safety compliance ($r = .39$, $p < .01$). In all above-mentioned studies, role definition was the best predictor of behavior.

Role definition is a central component of the model tested in the present study. The present study is an attempt to further explain the motivational influence of role definition on work behavior in general and safety compliance in particular. The breadth of nurses' role definitions with respect to safe work practices was expected to be positively linked to their actual adherence to safety regulations because required behaviors were believed to elicit stronger motivation to perform them. For this study, I measured role definitions that were specific to compliance with Universal Precautions. The present study specifically focused on nurses' individual perceptions of whether UP compliance was a formally required part of their jobs and whether or not they expected to be rewarded for compliance and punished for non-compliance. It was predicted that those nurses who perceived behaviors outlined in UP as a formal work requirement associated with rewards and sanctions would be more likely to comply in their daily work compared to those who saw compliance with UP as more discretionary and did not believe that compliance leads to rewards.

Hypothesis 1: Self-reported compliance-specific role definitions will be positively correlated with coworkers' ratings of safety compliance. Nurses who view

compliance-specific behaviors as a job requirement will be more likely to demonstrate compliance with safety regulations compared to those who view safety compliance as a discretionary behavior.

Hypothesis 2: Compliance-specific role definitions will predict a unique portion of safety compliance variance after controlling for other predictors.

Personality Predictors of Safety Compliance

Conscientiousness. As described by Barrick and Mount (1991), conscientiousness reflects dependability, being responsible, hardworking, and thorough. Theses characteristics are highly desirable in many organizational settings. People who are high on this personality trait are more likely to perform better then those who are not as conscientious (Barrick & Mount, 1991). Barrick et al. (2001) summarized years of previous research and concluded that conscientiousness and emotional stability are positively correlated with job performance in virtually all types of jobs. The upper bounds of validity estimates were found to be in the high .30s. Moreover, conscientiousness is positively associated with successful performance after training. For training performance, the estimated true correlation was .27. The authors conclude that conscientiousness is the best trait-oriented motivation variable for explaining variance in job performance.

In addition to predicting work performance, conscientiousness had also been linked to safety and accidents. Arthur and Graziano (1996) investigated predictors of driving accident involvement among college students and found significant inverse relation between conscientiousness and driving accident involvement. Individuals who rate themselves as more self-disciplined, responsible, reliable, and dependable are less likely to be involved in driving accidents than those who rate themselves lower on these attributes. Similarly Cellar, Nelson,

York, and Bauer (2001) found a significant inverse relationship between conscientiousness and the total reported number of not-at-fault work-related accidents alone, as well as the total reported number of work-related accidents. Wallace and Vodanovich (2003) found that conscientiousness was negatively correlated with unsafe behavior and accidents at work. This relationship was found among production workers (r = -.33, p < .05) as well as military personnel (r = -.14, p < .05). For the role enlargement hypothesis (i.e., mediation) to be supported there has to be a link between conscientiousness and safety compliance.

Hypothesis 3: Conscientiousness scores will be positively correlated with safety compliance. Employees who are higher on conscientiousness will be more likely to comply with safety regulations compared to those who are low on conscientiousness.

Mood. Emotions are important predictors of behavior in general and work performance in particular. Eysenck and Calvo (1992) argued that anxiety causes worry, and worry impairs performance on tasks with high attentional or short-term memory demands. According to the processing efficiency theory, worry causes a reduction in the storage and processing capacity of the working memory system available for a concurrent task and an increment in on-task effort and activities designed to improve performance. This theory is applicable to a complex and demanding work setting such as health care. HCWs who experience anxiety and negative emotional states would demonstrate impaired safety compliance compared to their coworkers who report pleasant emotional states.

Hypothesis 4a: Coworkers' ratings of safety compliance will be positively correlated with positive mood scores. Employees who are higher on positive mood at work will be more likely to comply with safety regulations compared to those who are lower on positive mood.

Hypothesis 4b: Coworkers' ratings of safety compliance will be negatively correlated with negative mood at work. Employees who are higher on negative mood will be less likely to comply with safety regulations compared to those who are lower on negative mood.

Job Satisfaction. The job satisfaction-job performance relationship has been widely researched in IO psychology. Several models of this relationship has been proposed: satisfaction as a cause of job performance, job performance as a cause of job satisfaction, reciprocal relationship between job performance and job satisfaction, a moderated relationship, and several others (See Judge, Thoreson, Bono, & Patton, 2001). Despite many years of intense interest, research has not yet provided conclusive confirmation or disconfirmation of any of the models. The link between job satisfaction and performance has been established through empirical evidence. In Judge et al.'s (2001) meta-analysis, based on 312 correlations, the average corrected correlation between job satisfaction and job performance was found to be .30 across all studies and .19 across studies that included nurses.

Attitude theory grounded in social psychology is often used to explain the relationship between job satisfaction and work behaviors. Eagly and Chaiken (1993) stated that "people who evaluate an attitude object favorably tend to engage in behaviors that foster or support it" (p 12). Following this logic, employees who favorably evaluate their jobs (i.e., have high job satisfaction) would behave accordingly and demonstrate high quality work performance. Blau's (1964) social exchange theory was also used to explain why highly satisfied employees seem to put more effort into their job performance. Employees who find their jobs pleasant and enjoyable may feel obligated to reciprocate by engaging in an organizationally valued behavior such as safety compliance (Hofmann et al., 2003). Hofmann et al. suggested that safety

compliance is one of the avenues that employees use to reciprocate high quality relationships with their organizations.

The job satisfaction-safety link has been strongly supported in the empirical literature. Probst and Brubaker (2001) found that job satisfaction was positively related to safety knowledge and motivation over time. Similarly, Gyekye and Salminen (2005) found that individuals who had high job satisfaction were also more likely to follow safe work practices. In Barling's et al. (2003) study, work related injuries were negatively correlated with job satisfaction, $r = -.12$, $p < .01$. I predicted that job satisfaction would correspond to greater safety behavior among nurses.

Hypothesis 5: Self-reported job satisfaction scores will be positively correlated with coworkers' ratings of safety compliance.

Mediation vs. Moderation

Research suggests that, despite their significant correlation with work performance, personality and attitude predictors leave a substantial amount of variance unexplained (Borman et al., 2001). This has led several researchers to suggest that there might be an intervening variable affecting the relationship between personality, attitude and performance. Penner, Midili, and Keglemeyer (1997) suggested that full understanding of employees' performance motivations requires going beyond their personality and considering employees' unique perceptions of their organizational roles. In a recent meta-analysis, Barrick Mount, and Judge (2001) point out that very little is known about the mechanisms through which distal personality predictors affect job performance. The influence is believed to operate through more proximal motivational predictors (Kanfer & Ackerman, 1989). Barrick et al. (2001) suggest that "the inclusion of both proximal and distal motivation constructs into a unified motivational model

will significantly advance our understanding of antecedents to job performance (p. 25)." I believe that role definition may be one of many likely motivational variables that affect the predictor- job performance relation.

Two contradictory theories have been proposed in extant literature. According to Morrison's (1994) initial hypothesis, role definitions should *mediate* the relationship between employee attitudes and behavior. Morrison found that employees who were affectively committed to their organization and were satisfied with their jobs defined their jobs broadly and tended to include more citizenship behaviors in the required category which, in turn, caused them to perform citizenship behaviors more frequently. Tepper, Lochart and Hoobler (2001) refer to the mediation model as *role enlargement effect*. Morgeson, Delanwy-Klinger and Hemingway (2005) found that role definitions mediated the relationship between job autonomy, cognitive ability, job-related skill and job performance. Hofmann, Morgeson, and Gerras (2003), however, tested the role enlargement effect of safety citizenship role definitions among military personnel and found no support for the mediation hypothesis. Hofmann et al. found that role definitions did not mediate the relationship between Leader Member Exchange and safety citizenship among the military personnel.

An alternative *moderation* model, or *role discretion effect*, states that role definitions affect the strength of the relationship between employee attitudes and their performance (Tepper et al., 2001). Tepper and colleagues found that the relationship between justice perceptions and organizational citizenship was stronger for those employees who had narrow role definitions, (e.g., those who defined organizational citizenship as extra-role) (Tepper & Taylor, 2003: Tepper et al., 2001). The present study is exploratory in nature; therefore, I tested both role discretion

(H3) and role enlargement (H4) hypotheses. The role enlargement hypothesis is depicted in Figure 3 and the role discretion hypothesis is depicted in Figure 4.

> *Hypothesis 6: Compliance-specific role definitions will mediate the relationship between personality and attitude predictors and safety compliance. Specifically, personality and attitude will predict role definition, which, in turn, will predict safety compliance.*
>
> *Hypothesis 7: Compliance-specific role definitions will moderate the relationship between personality and attitude predictors and safety compliance. Specifically, when safety compliance is viewed as a job requirement (i.e., broad role definition), the relationship between personality, attitudes and compliance will be weak, whereas when compliance-specific role definitions are narrow the relationship will be statistically significant.*

Personality as a Predictor of Safety-Specific Role Definition

Morrison (1994) proposed a dynamic model of role definitions and predicted that the boundaries between behaviors that are conceptualized as required and discretionary would vary across individuals and situations. Morrison (1994) suggested that "perceived job breadth is likely to depend on individual factors ... as well as on contextual factors" (p. 1564). This is consistent with Graen's (1976) conception of role-defining. Graen (1976) theorized that, in the course of learning their organizational and social roles, new employees modify the established patterns of work behavior. Graen called this process role-defining. Instead of being a passive recipient of a role, the new employee adapts a unique role that is only partially defined by the organization to better suite his or her personal style. An employee, who is naturally predisposed to conscientiously follow rules, is more likely to adopt a work role that maximizes the fit between

her personality and the job she performs by integrating strict compliance with regulations into the category of formally required behavior. Therefore it is possible that personality (i. e., distal predictor) influences internalized role definitions (i. e., proximal predictor). However, there have been few empirical investigations of the relationship between personality variables and role definitions. Several possible predictors of role definition are described below.

Conscientiousness. A HCW who describes herself as "exacting in my work" should be more likely to incorporate careful safety compliance into her required job behavior compared to a more careless coworker. Clark et al. (manuscript under review) tested this proposition and found that conscientious food service workers were in fact more likely to rate OCB-specific tasks as a required part of their jobs, $r = .34$, $p < .01$.

> *Hypothesis 8: Conscientiousness scores will be positively correlated with self-reported compliance-related role definition. Employees who describe themselves as being higher on conscientiousness will be more likely to define safety compliance as a formal part of their job responsibilities compared to those who are low on conscientiousness.*

Positive Mood. Isen and Baron (1991) found that positive affect influences cognitive processes, such as inclusiveness of categorization. Specifically, weak exemplars were more likely to be rated as category members by subjects who reported feeling happy. Mood manipulation was also found to have a significant effect on role definition breadth. By experimentally manipulating participants' moods before having them categorize job tasks, Bachrach and Jex (2000) found that participants in a positive mood condition engaged in broader task categorization than participants in a negative mood condition. Following a mood manipulation, participants in the positive mood condition included more job tasks in the

"required" category compared to participants in the negative mood condition. In the present study, instead of participants' mood, their general stable predisposition toward positive or mood at work is assessed. Clark et al. (manuscript under review) found a positive correlation between positive mood and OCB-specific role definition, $r = .25$, $p < .01$.

Hypothesis 9a: Self-reported role definition will be positively correlated with positive mood scores. Employees who are higher on positive mood will be more likely to define safety compliance as a formal part of their job responsibilities compared to those who are lower on positive mood.

Hypothesis 9b: Self-reported role definition will be negatively correlated with negative mood scores. Employees who are higher on negative mood will be less likely to define safety compliance as a formal part of their job responsibilities compared to those who are lower on negative mood.

Job Satisfaction

Job satisfaction is employees' psychological response to his or her job. It has been found to be positively correlated with role definitions (Clark et al., 2004; Morrison, 1994). People who are satisfied with their jobs define their formal responsibilities more broadly, compared to their dissatisfied coworkers. This occurs even when employees have identical formal job descriptions. Several researchers linked broad role definitions with job satisfaction (LePine, Erez, & Johnson, 2002; Organ & Ryan, 1995). Morrison (1994) found that job satisfaction was positively correlated with conscientiousness-specific role definitions ($r = .11$, $p < .05$) and with keeping up role definitions ($r = .15$, $p < .05$) in a sample of office workers. Clark et al. (manuscript under review) observed a correlation of .45 between food service employees'

satisfaction with their jobs and their role definitions. Similarly, I predicted that employees who are generally satisfied with their jobs would demonstrate broader role definitions.

Hypothesis 10: Job satisfaction scores will be positively correlated with safety-related role definition.

Safety climate

Safety climate refers to the employees' socially constructed shared perceptions of safety behaviors and practices that are formally enforced and rewarded by the organization. Safety climate provides a general frame of reference for developing organizational expectations (Hofmann et al., 2003; Zohar, 1980). When organizational safety climate is strong, there is an increased emphasis on safety performance as expressed by management's support for safety, absence of workplace barriers to compliance, frequent safety-related feedback and training, and availability of necessary equipment (Gershon et al., 2000). Climate is believed to emerge from consensual motive-relevant assessments of key features of the organizational environment (Zohar & Luria, 2005). In Zohar and Luria's (2005) definition, "The core meaning of climate relates, therefore, to socially construed indications of desired role behavior, originating simultaneously from policy and procedural actions of top management and from supervisory actions exhibited by shop-floor or frontline supervisors" (p. 616).

Safety climate is significantly correlated with work safety behavior in general and UP compliance in particular (DeJoy et al, 2000; Gershon et al., 1994; Grosh at al., 1999; Hofmann et al., 2003). Gershon et al. (1995) found that respondents who perceive a strong commitment to safety at their organization are over two and a half times more likely to be fully compliant with UP then respondents who do not perceive a strong safety climate. Moreover, safety climate has been identified as a social-cognitive mediator between environmental attributes and relevant

outcomes. Zohar and Luria (2004) found that safety climate partially mediated the relationship between supervisory scripts and injury rate during the 6-month period following climate and script measurement. Hofmann et al. (2003) integrated role theory, social exchange, and climate research and found that safe working practices among the members of a military unit are related to Leader Member Exchange (LMX), compliance-specific role definitions, and safety climate within the military unit. Unit-level safety climate influenced the relationship between leader-member exchange and compliance-specific role definitions. Safety climate acted as a contextual cross-level moderator such that, in the strong safety climate situation, employees who report high LMX were more likely to view safety behaviors as part of their formal role responsibilities. In a situation of weak safety climate, this relationship was not found. Similarly to Hofmann and Stetzer (1996), this moderation effect was a cross-level phenomenon with LMX and safety behavior measured on an individual level and safety climate measured on a group level.

In organizational climate research in general and in safety climate research in particular, it is common to conceptualize climate as a group-level variable and to aggregate measures of climate across the appropriate unit of analysis (Hofmann, Morgeson, & Gerras, 2003; Morgeson & Hofman, 1999; Zohar & Luria, 2005). Organizational safety policies are often initiated by upper management but are directly implemented and supervised by unit managers who are lower in the organizational hierarchy (Zohar, 2003). The model assumes that lower-level supervisors have discretion in policy implementation allowing for between-group variation. Climate within a work unit can therefore be measured by individual report and be aggregated to a subunit level.

It is reasonable to expect that in data collected from a variety of specialized medical settings (i.e., psychiatric, rehab, and surgical units) there will be variance in safety climate

between those units as well as agreement within the units. Therefore, I expected that the data in the present study will be multilevel in nature. Personality, job satisfaction, compliance-specific role definitions and safety behavior were measured on an individual level whereas organizational safety climate was measured on a group level. Specifically, nurses were asked to provide information about compliance-specific climate present in their hospital unit. The climate measure should reflect ratings of shared unit properties and there was a logical reason to believe that climate measures are non-independent and are clustered by hospital unit membership (Bliese, 2000).

Hypothesis 11: Group-level safety climate within hospital units will moderate the relationship between nurses' personality characteristics and job attitudes and their compliance-specific role definitions. The relationship between job satisfaction, personality, and role definition will be strong when safety climate within the hospital unit is strong.

METHOD

Sample and Procedure

712 nursing professionals employed at two Midwestern hospitals were recruited to participate in this study. Hospital A was located in a small town in North-Central Ohio. Hospital B was located in a large city in Northwest Ohio. At hospital A, the researcher personally handed out survey packets containing two surveys accompanied by pre-addressed postage-paid return envelopes during staff meetings after providing verbal instructions and answering questions. This was not possible at hospital B, a much larger hospital. After meeting with nurse managers and explaining the study to them, the researcher distributed survey packets via inter-office mail. In the cover letter accompanying each survey packet, the focal employee was instructed to fill out a self-report questionnaire containing predictor measures and to identify a coworker and ask him or her to fill out a survey containing the dependent measure. The criteria for selecting a coworker were working proximity and frequent work-related interaction. The two surveys were clearly marked, printed on paper of different color, and accompanied by separate return envelopes to insure the confidentiality of coworker's ratings. The two surveys in each packet were marked with a unique numerical code that was later used for linking them. All participation was voluntary. Participants were assured that their responses would nave no impact on their own or their coworker's job evaluations and/or compensation levels. Respondent's confidentiality was protected. All respondents were entered into a lottery-style drawing to win one of 20 $20.00 gift certificates.

Return Rate

171 focal HCWs completed self-report surveys and 103 coworker surveys were mailed back directly to the principle investigator. The overall return rate for self-report surveys

was 24%. The return rate was 34% and 14% for hospital A and B, respectively. It is possible that the return rate from hospital A was higher because the experimenter was able to recruit participants in person and there was a stronger sense of the hospital administration's endorsement of the study. The exact return rate for coworker surveys was impossible to estimate because the researcher does not know how many coworker surveys were actually distributed by the focal employee and how many were discarded. Additional problems with coworkers' surveys were detected by examining the returned surveys. Specifically, some respondents from hospital B mistakenly filled out both self- and coworker surveys themselves making it impossible to identify the nurse-coworker dyad. This became obvious after comparing return address information, handwriting, and demographic information. This problem was more prevalent in the sample from hospital B and it was most likely caused by respondents' misunderstanding of the written instructions. 20 incorrectly filled out coworker surveys were discarded.

The final sample consisted of 95 matched nurse-coworker pairs. 59 dyads were from hospital A and 46 dyads were from hospital B. The un-matched (N = 76) sample consisted of 42 nurses from hospital A and 34 nurses from hospital B. There were 9 un-matched coworker surveys. The un-matched and matched focal nurse samples were compared on several variables of interest. The results of several one-way ANOVAs indicate that there were no significant group differences in terms of role definitions, job satisfaction, conscientiousness, mood, and safety climate perceptions. On average, coworkers reported that they worked with the focal person for 7 years. The majority of focal nurses were female (90%) and worked as registered nurses (60%), followed by licensed practical nurses (24%). Overall, five HCW occupations were represented in the sample. See Table 1 for focal HCW sample composition. 61% were between the ages of 35 and 54. Respondents' average tenure with their hospitals was 7 years and 2 months, ranging from

one month to 35 years. 51% of respondents indicated that supervising others was a part of their job. The final matched sample included data from 20 different hospital units (e.g., cardiac intensive care, rehabilitation unit, emergency room, neonatal intensive care, and others). Three of these units provided only a single dyad.

Instrument

Focal Employee Survey Instruments: Safety-related role definitions were measured by modified Gershon's et al. (1995) UP compliance scale. See Appendix B for the complete item listing. The 13-item instrument was administered to focal employees. A seven-item subscale adopted from the original 13 items was used in the analyses. The original scale was designed to measure whether workers follow a variety of specific CDC recommended work practices, such as, proper disposal of used sharps, proper care and use of needles, and use of protective clothing (disposable gloves, face masks, and protective outer clothing). By modifying the instructions, the scale was adopted to measure role definitions. Instead of reporting a frequency of engaging in a particular behavior, respondents were asked to indicate if a particular compliance-specific behavior was expected and required part of their job. The participants were instructed to rate each behavior using a 5-point response scale from 1 (*Definitely exceeds my job requirements*) to 5 (*Definitely part of my job*). In accordance with the procedure used by Tepper et al. (2001), the anchors were defined as follows: "Behaviors that are *part of your job* are those that you are rewarded for doing or punished for not doing, "and "behaviors that *exceed your job requirements* are those that you don't have to do—you wouldn't be rewarded for doing them nor would you be punished for not doing them." The item ratings were averaged to form an aggregated score. High aggregated scores indicated broad role definitions. All predictor variables were self-reported and were measured using a 5-point response scale from 1 (*Strongly disagree*) to 5 (*Strongly agree)*.

Conscientiousness was measured using 10 items each developed by Goldberg (IPIP, 2001). *Mood at work* was measured using Watson, Clark, and Tellegen's (1988) 20-item Positive and Negative Affectivity scale. Overall *job satisfaction* was measured by Brayfield and Rothe's (1951) 5-item scale. *Organizational safety climate* was measured by a 20-item hospital safety scale developed by Gershon et al. (2000). The scale was specifically developed for use in a hospital setting and to incorporate several dimensions of safety climate: management support for safety, workplace barriers to compliance, availability of equipment, safety-related feedback and training. As recommended by Zohar (1980), organizational safety climate was measured on a group level. Therefore the items were worded so they refer to the participant's entire hospital unit. To measure the overall safety climate all items were aggregated. *Control variables* such as age, sex, tenure, and supervisory status were also assessed. Focal employee instruments are presented in Appendix B.

Coworker Survey Instrument: Safety compliance was measured by a 7-item subscale adapted from Gershon's et al. (1995) 13-item UP compliance measure. The coworker was instructed to report how often the focal person follows CDC recommended work practices, specifically whether he or she uses barrier protection (gloves, eye protection, protective outer clothing). Each behavior was rated on a 5-point response scale from 1 (*Never*) to 5 (*Always*). High score indicated high levels of compliance. Coworkers also reported how long they knew the focal person and provided their own demographic information. See Appendix A for coworker instrument.

ANALYSIS AND RESULTS

Scale Analyses

Compliance-specific Role Definitions. Initial reliability analysis of the 13-item safety-related role definition scale resulted in a Cronbach's Alpha of .62. Several items had low corrected item-total correlations contributing to the overall low internal consistency of the 13-item scale. The results of the reliability analysis and item-level statistics are presented in Table 2. To improve the internal consistency of the measure, six items that demonstrated corrected item-total correlations below .29 were removed from the scale. Many of the discarded items had high means and low standard deviations. For example: "*Disposing of sharp objects into a sharps container,* " $M = 4.99$, *S.D.* = .15, and "*Washing hands after removing disposable gloves* ," $M = 4.91$, *S.D*. = .42. The resulting 7-item scale has internal consistency of .73. See Table 3 for item-level statistics. The aggregated role definition scale scores were computed. The distribution of compliance-specific role definition scores was negatively skewed, skeweness = -2.63, $M = 4.77$, *S. D.* = .40. Respondents demonstrated high self-reported levels of compliance-specific role definition.

Safety Compliance. Similarly to role definition scores, coworker-reported compliance measure was modified. The resulting 7-item scale had a Cronbach's Alpha of .90. See Table 4 for item-level and item-total statistics. The outcome measure was also negatively skewed, skewness = -2.29, $M = 4.56$, *S. D*. = .68, indicating that coworkers provided high ratings of compliance among focal nurses.

Safety Climate Scale. Gershon's 17-item safety climate measure was modified to increase internal consistency. Two reverse-coded items: "On my work unit, nurses usually have too much to do to always follow Universal Precautions" and "My work area is crowded," were removed

from the scale due to their low corrected item-total correlation resulting in a 15-item scale with Alpha of .89. Removing two items improved the initial Cronbach's Alpha value of .87.

All remaining measures were used in their original form. Descriptive statistics and internal consistency coefficients are presented in Table 5. All measures demonstrated acceptable levels of internal consistency with Cronbach's Alphas ranging from .78 to .92 (see Nunnally, 1978).

Individual Level Analyses

Correlational Analyses. Bivariate correlations are presented in Table 5. As predicted, HCW's safety compliance was positively correlated with role definitions, $r = .28$, $p < .01$. Hypothesis 1 was supported: self-reported broad role definitions corresponded with more frequent safety compliance, as rated by a coworker. Safety compliance was also positively correlated with job satisfaction, conscientiousness, positive mood, and individual-level safety climate and negatively correlated with negative mood. All previously hypothesized predictors were significantly correlated with safety compliance. Sex was the strongest demographic predictor of compliance ($r = -.45$, $p < .01$) indicating that women ($N = 97$) were more likely to comply with safety regulations compared to their male peers ($N = 5$). To further investigate the mean gender differences in coworker-reported compliance, a *t* test was conducted. According to their coworkers, women ($M = 4.38$) were more likely to comply with safety regulations compared to men ($M = 3.14$), $t\ (90) = 4.77$, $p < .01$, Cohen's $d = 2.20$.

Five different HCW job classifications were represented in the sample: registered nurse, state tested nursing assistant, licensed practical nurse, nursing student, and personal assistant (See Table 1 for demographics). To investigate the effect of occupation on compliance, a one-way ANOVA was conducted on the dependent variable with HCWs occupation as a random

factor. The results indicate that there were no meaningful between-group mean differences in terms of safety compliance, F (4, 41) = .81, p = .53. There were no statistically significant between-hospital mean differences in terms of safety compliance, F (1, 101) = 3.14, p = .08. There were no between-unit mean differences in compliance, F (18, 74) = 1.37, p = .17. Therefore, occupation, unit, and hospital group memberships were not used as control variables.

Contrary to the predictions, HCW's compliance-specific role definitions were unrelated to job satisfaction or personality predictors with the exception of negative affectivity, r = -.23, n = 167, p < .01. This indicates that nurses who were experiencing negative emotions at work were less likely to view compliance as a required behavior. The non-significant bivariate correlation coefficients were .14, n = 169, for job satisfaction, .12, n = 167, for conscientiousness, .13, n = 166, for positive mood. On an individual level, perceptions of safety climate within hospital units were positively correlated with self-reported role definitions, r = .28, n = 166, p < .01, indicating that perceived strong emphasis on safety within a hospital unit corresponded to broad compliance-specific role definitions.

To test for the presence of between-unit mean differences in role definition, a one-way ANOVA was conducted with role definition as an outcome and hospital unit as a random factor. The results indicated that there were statistically significant between-unit differences in role definitions, F (19, 144) = 1.95, p < .05, η^2 = .20. Non-surgical hospital units tended to have the lowest mean role definition scores. Hospital units were dummy-coded to be used as control variables in regression analyses. Hospital units explained 10% of variance in role definition. After controlling for hospital units, individual-level safety climate and negative affectivity combined explained an additional 6% of variance resulting in an adjusted R^2 of .16. See Table 7 for hierarchical regression analyses results.

To test whether compliance-specific role definitions explained unique variance in safety compliance after controlling for other predictors, hierarchical regression analysis was conducted. See Table 8 for results. In Step 1, gender, sex, tenure, supervisory status, job satisfaction, conscientiousness, positive and negative mood and safety climate were entered into the regression equation. This equation resulted in an adjusted R^2 of .34, $\Delta F = 5.43$, $p < .01$. In the second step, compliance role definition was entered into the regression equation. This new equation resulted in an adjusted R^2 of .37, with an incremental R^2 of .04, $\Delta F = 4.86$, $p < .01$. Thus, hypothesis 2 was supported. Safety-specific role definition explained an additional 4% of unique variance in safety compliance after controlling for all other hypothesized predictors. All predictors combined explained 37% of variance in safety compliance leaving 63% of variance unaccounted for. Due to high colinearity among predictors, only sex, tenure, job satisfaction, and role definition had statistically significant regression slopes (Refer to Table 7).

Role Enlargement Model. For the mediation hypothesis to be supported there had to be a significant relationship between a predictor and the mediator variable (Baron & Kenney, 1986). As the bivariate correlation results presented in Table 5 indicate, role definition (i.e., the hypothesized mediator) was unrelated to most of the hypothesized predictors, with the exception of negative mood. Therefore, I concluded that the effect of conscientiousness, positive mood and job satisfaction on safety compliance was direct.

To test whether role definition mediated the relationship between negative affectivity and compliance ratings, mediated regression analysis was conducted with compliance as outcome, role definition as a moderator, negative mood as a predictor, and sex and tenure as control variables. This hypothesis was tested in accordance with the four-step regression procedure developed by Baron and Kenny (1986). According to this method, the magnitude of

mediation is determined by the reduction of the effect of the predictor on the outcome, once the mediator variable is added to the model.

In the first step, the direct path between negative mood and compliance was estimated, while controlling for sex and tenure. In the second step, safety compliance was regressed on role definition, the proposed mediator, while controlling for nurses' sex and tenure. In the third step, compliance was regressed on negative mood while controlling for role definition, sex and tenure. The change in the coefficient strength between negative mood and the outcome estimated in steps one and three was evaluated. After the effect of role definition was controlled for, the coefficient paths from negative mood to the outcome became smaller in magnitude but still statistically significant. The results presented in Table 8 indicate that role definition partially mediated relations between negative mood at work (i.e., the predictor) and safety compliance. To test whether this partial mediation effect was statistically significant, the Sobel (1982) test of mediation was performed with the aid of an online interactive calculation tool developed by Preacher and Leonardelli. The outcomes of the Sobel test confirmed the mediation hypothesis. Refer to Table 7. Hypotheses 6 was partially supported.

Interaction Analysis. Role discretion effect, states that role definitions affect the strength of the relationship between employee attitudes and their performance (Tepper et al., 2001). It was predicted that compliance-specific role definition would moderate the relationship between conscientiousness, mood and job satisfaction predictors and safety compliance. Specifically, when safety compliance is viewed as a job requirement (i.e., broad role definition), the relationship between conscientiousness, mood and job satisfaction and compliance would be weak, whereas when compliance-specific role definitions are narrow the relationship would be statistically significant.

To test Hypothesis 7, four moderated multiple regression analyses were conducted with safety compliance as an outcome variable. Results are summarized in Table 9. In Step 1 of the hierarchical regression, demographic control variables, one of the predictors (conscientiousness, negative and positive mood, or job satisfaction), and role definition were entered. In Step 2, the multiplicative interaction term between the predictor and role definition was entered. The change in R^2 for Step 2 was examined to determine whether role definition x predictor interaction term explained significant incremental variance in safety compliance. In one out of four moderated regression analyses the regression slope for interaction terms was statistically significant indicating that role definition had an effect on the strength of the relationship between conscientiousness and safety compliance. For conscientiousness and role definition the interaction term was statistically significant, $\beta = -2.36$, $p = .05$. Adding the interaction term to the model resulted in an incremental R^2 of .03, $\Delta F = 3.96$, $p < .05$, above and beyond conscientiousness and role definition. There was partial support for the role discretion model. The results are graphically represented by Figure 6. The results indicate that, as predicted in Hypothesis 7, when role definition is broad, the relationship between conscientiousness and safety compliance tends to be weaker compared to narrow role definition. In other words, broad role definition appears to have a buffering effect. Hypothesis 7 was partially supported.

Multilevel Analysis

Climate is believed to be a compositional construct and a product of a bottom-up process (Zohar & Luria, 2005). It is generally assumed that, in case of bottom-up processes, the lower-level (i.e. individual) data can be combined to represent phenomena at higher (i.e., hospital unit) levels (Bliese, 2000). A compositional process would result in an aggregated variable that is essentially identical to lower-level construct. The climate measure used in the present study

referred to safety climate within HCW's hospital unit. It was expected to reflect ratings of shared unit properties. Climate measures were expected to be non-independent and to be clustered by hospital unit membership

It is generally recommended that the data should be tested to establish the conformity of the data to the level of theory (Klein, Dansereau, Hall, 1994). To assess if the safety climate data in the present study should be aggregated to a unit level, several recommended analyses were conducted on un-aggregated individual level data. Between-unit variance, homogeneity of climate perceptions, and within-group agreement and reliability were assessed. A one-way random-effects ANOVA was conducted on safety climate data with unit entered as random effect. The results suggested that there was no meaningful variance between 20 units included in the sample, F (19,140) = 1.44, p = .11, η^2 = .16. The results indicated that only 16% of variance in safety climate could be attributed to unit membership.

To determine whether group level aggregation is appropriate, within-group agreement was assessed. Within group agreement is used to establish the construct validity of the measurement model in composition models. For each group, r_{wg} was computed using procedures described in James, Demaree, and Wolf (1984). The following formula is used to estimate interrater agreement for judges' mean scores on J items that are "essentially parallel."

$$r_{WG(J)} = \frac{J[(1-(\overline{s_{xj}^2}/\sigma_{EU}^2)]}{J[(1-(\overline{s_{xj}^2}/\sigma_{EU}^2)]+(\overline{s_{xj}^2}/\sigma_{EU}^2)}$$

Where $r_{WG(J)}$ is the within-group interrater agreement, $\overline{s_{xj}^2}$ is the mean of the observed unit variances on the J items, and σ_{EU}^2 is the variance that would be expected if all judgments have been due exclusively on measurement error, providing that the null distribution is rectangular in

shape. The variance due to judgment error was estimated using the following formula: $\sigma_{EU}^2 = (A^2 - 1)/12$, where A corresponds to the number of alternatives in the response scale for X_j, which was presumed to vary from 1 to A. For the safety climate measure, A = 5. For this sample, $J = 15$, and $\sigma_{EU}^2 = 2$. Using these values, median $r_{WG(15)}$ = .95, range from .82 to .98. Using rectangular null distribution may result in overestimation of within-group interrater agreement if the rating bias is present. When the null distribution is believed to have a strong negative skew due to rater leniency, James et al. (1984) suggest replacing the error variance estimate σ_{EU}^2 with σ^2_{LS}. For a 5-point response scale σ^2_{LS} = .44. Using these parameters, the median $r_{WG(15)}$ = .89, range from .19 to .91.

Following Bliese's (2000) recommendation, intraclass correlations were computed to estimate the reliability of the climate measure. This was done to determine whether the aggregate-level variable and lower-level variable could be considered equivalent. ICC(1) and ICC(2) were computed from a one-way random-effects ANOVA using Bartko's (1976) formula:

$$ICC(1) = \frac{MSB - MSW}{MSB + [(k-1) * MSW]} \qquad ICC(2) = \frac{MSB - MSW}{MSB}$$

Where MSB is between-group mean square, MSW is within-group mean square, and *k* is an average unit group size (*k* = 5.31).

The ICC(1) is a measure of the reliability associated with a single assessment of the group mean or an index of interrater reliability, ICC(1) = .05. ICC(2) provides an estimate of the reliability of the group means, ICC(2) = .27. ICC(1) results indicated that there was very little unit-level variability for safety climate (only 5% of the variance in individuals' responses were a function of group membership), which indicates considerable individual level variability and little reliable between-group variability. ICC(2) results indicated that the group means had low

reliability and were weakly differentiated from one another (James, 1982). The results indicate that, even though, there was some consensus among hospital unit members in terms of their perceptions of safety climate in their unit, both intraclass correlations were low, indicating insufficient levels of within unit reliability and agreement to justify aggregation of safety climate scores to unit level. According to Bliese (2000), when ICC(1) values are close to zero, the magnitude of lower-level relationships is virtually identical to the magnitude of aggregate-level relationships.

The analyses of the data indicated that they did not conform to the originally predicted level of theory. Multilevel data structure for the safety climate measure was not supported by the results of low interrater agreement and intra-class correlations. Safety climate appeared to be an individual-level variable more similar to an individual interpretation of the environmental cues rather than a shared socially-constructed phenomenon. Instead of using HLM method to test cross-level hypotheses, as was done by Hofmann et al. (2002), hierarchical regression analysis was used to test the same hypotheses on an individual level of analysis. Despite the change in the level of theory, the relationship between safety climate and role definition was predicted to follow a similar pattern.

> *Hypothesis 11(revised): Individual-level perceptions of safety climate within hospital units will moderate the relationship between nurses' personality characteristics and job attitudes and their compliance-specific role definitions. The relationship between job satisfaction, personality, and role definition will be strong when safety climate within the hospital unit is strong.*

To test the revised Hypothesis 11, four moderated multiple regression analyses were conducted with role definitions as an outcome variable. In Step 1 of the hierarchical regression,

demographic control variables (i.e., age and sex), one of the predictors (conscientiousness, negative and positive mood, or job satisfaction), and safety climate were entered. In Step 2, the multiplicative interaction term between the predictor and safety climate was entered. The change in R^2 for Step 2 was examined to determine whether individually- perceived safety climate x predictor multiplicative interaction term explained significant incremental variance in safety compliance. See Table 10 for the results. In two moderated regression analyses, interaction terms did explain statistically significant incremental variance indicating that safety climate perceptions had an interactive effect on the strength of the relationship between job satisfaction, negative mood and role definitions. When safety climate perceptions were strong, the predictor-role definition relationship became virtually non-existent. It appears that safety climate is a very powerful environmental cue that helps nurses to identify organizationally-mandated behaviors and shapes their compliance-specific role definitions. When strong safety climate is perceived, nurses tend to include compliance in the required category. When safety climate is weak, individual factors such as job satisfaction and negative mood have a chance to influence role definitions. Revised Hypothesis 11 was partially supported.

DISCUSSION

Compliance with safety regulations among health care workers was the criterion variable in this study. The objective of this research was to identify individual and organizational factors that contribute to increased compliance with safety regulations. Specifically, HCWs' compliance with Universal Precautions, a set of guidelines designed to reduce exposure to bloodborne pathogens, was used to represent one important aspect of safety compliance in health care. According to DeJoy's et al. (1995) work system model of safety behavior in general and UP compliance in particular, a combination of worker, job/task, and organizational factors predict whether or not a HCW will follow required safety regulations. In accordance with DeJoy et al.'s recommendations, a variety of predictor variables were included in the present study. Based on theoretical considerations and evidence from previous research, I selected several variables among numerous potential predictors of safety compliance. Worker variables were represented by job satisfaction, conscientiousness, and mood. Job/task category was represented by compliance-specific role definition. And finally, safety climate was included to represent contextual/organizational predictors of safety behavior.

The overall ratings of safety compliance were high indicating that hospital nurses in this sample were taking the required safety precautions. These results are not surprising. High levels of safety compliance are to be expected considering the many years of concentrated effort on the part of the CDC and OSHA to implement and oversee safe work practices in the health care industry. Mandatory safety training and compliance monitoring have been widely implemented since the passage of the Occupational Safety and Health Administration Blood-Borne Pathogens Standards (OSHA, 1991). Investigating variance in safety compliance in a highly regulated setting such a health care organization presents several methodological

problems. Mainly, safety compliance is not a discretionary behavior. The external pressure on HCWs to comply with safety regulations is extremely strong because of the seriousness of the potential consequences of non-compliance. Compliance, however, is still far from absolute (Gershon et al.,.1994; Gershon & Karkashian, 1994).

Non-compliance with safety regulations is a main cause of occupational injuries in health care. That is why it was important to investigate whether nurses have actually internalized the safety-related job requirements or whether some still consider compliance to be a discretionary behavior. Role definition, or nurse's understanding of his or her safety compliance-specific job requirements, was hypothesized to be an important predictor of safety compliance. Self-reported role definition scores tended to be high indicating that most nurses do not consider compliance to be at their discretion. This is very different from previous studies that investigated the construct of role definition in the context of organizational citizenship behavior, a category of organizational performance that is not mandated by the organization (Bachrach & Jex, 2000; Hofmann et al., 2003; Morrison, 1995; Tepper et al., 2001; Tepper & Taylor, 2003; Zellars et al, 2003). Even though it was low, there was still some variance in compliance-specific role definitions. As predicted, self-reported role definition breadth was positively correlated with coworkers' ratings of safety compliance. HCWs whose perceptions of job requirements and expectations included diligently following safety regulations demonstrated stricter adherence to those regulations, as rated by their coworkers.

Motivation theory provides one possible explanation of this relationship. Employees should be motivated to perform those work behaviors that are strongly associated with organizational rewards or sanctions. By including safety compliance in the category of required behavior, HCWs are more likely to comply in order to obtain organizational rewards and avoid

sanctions. Moreover, role definition contributed significant incremental validity when it was included in the model with other self-reported predictors of safety compliance.

The personality trait of conscientiousness was also positively correlated with safety compliance. Conscientious nurses were more likely to comply with safety regulations compared to their less conscientious counterparts. These findings are consistent with Barrick et al.'s (2001) conclusion that conscientiousness is the best trait-oriented predictor of job performance. The validity of conscientiousness seems to generalize across settings and types of job performance. It is especially useful for predicting complex work behaviors that require being thorough and following rules such as compliance with safety guidelines. The relationship between conscientiousness and safety compliance was stronger for those employees who held narrow role definitions. Broad role definitions appeared to buffer the link between conscientiousness and safety compliance. When safety compliance is seen as a central part of nurse's job and not a discretionary behavior, conscientiousness has no affect on his or her compliance. This is consistent with the role discretion hypothesis that proposes that role definition may set the boundaries for predictor-performance relationship (Tepper et al., 2001). In the presence of broad role definitions, personality is less likely to have a direct influence on behavior.

As predicted, mood was related to safety compliance. Nurses who reported high positive mood (i.e., being interested, alert, and exited) at work were more likely to comply with safety compared to their counterparts who did not report high positive mood. Nurses who were high on negative mood described themselves as irritable, distressed, and upset. These respondents were less likely to comply with safety regulations compared with less distressed coworkers. This suggests that distress is an impediment to safety compliance whereas being in a good mood makes one more likely to comply. The processing efficiency theory (Eysenck &

Calvo, 1992) suggests that anxiety impairs performance on tasks with high attentional or short-term memory demands. This theory may help explain the link between mood and safety compliance. Nurses who are upset or distressed while providing patient care may be too preoccupied to devote their cognitive resources to safety aspects of their work. Whereas their counterparts who are in good moods are able to successfully attend to many cognitive demands of their complex work environment.

The negative mood-compliance relationship was partially mediated by role definition. It appears that negative mood may have been partially responsible for narrow role definitions (Bachrach & Jex, 2000) which in turn were related to decreased safety compliance. The results provide some support for the role enlargement, or as in this case, role narrowing, hypothesis that states that role definition is a proximal predictor of organizational behavior (Morrison, 1995). These findings suggest that health care providers should be concerned about their employees' emotional well-being at work. By striving to reduce potential causes of distress common in healthcare such as understaffing, role overload, and work-family conflict, employers could make health care a safer place for employees as well as patients.

Job satisfaction was positively related to compliance. Nurses who were generally satisfied with their jobs were more likely to comply compared to their dissatisfied coworkers. It is possible that safety compliance is a behavior that is guided by the principal of social exchange (Hofmann et al., 2003). Employees who find their jobs pleasant and enjoyable may feel obligated to reciprocate by engaging in an organizationally valued behavior such as safety compliance. There was no support for role enlargement hypothesis. Contrary to Morrison's (1995) findings, role definition did not mediate the job satisfaction-compliance relationship.

Women were significantly more likely to comply with safety precautions compared to men. It is somewhat difficult to interpret this gender effect because of very unequal sample sizes: 87 females and 5 males. This pattern of behavior may be a reflection of gender differences in risk taking and sensation seeking. Men, on average, are more likely to take risks and to engage in potentially self-destructive behaviors, compared to women (Waldron, 1997; Zuckerman, 1979). Future research efforts should address this issue using better gender-balanced samples. This could be a challenge in nursing research as it has been traditionally a female-dominated occupation. In the current sample, males were also more likely to be dissatisfied with their jobs, report lower conscientiousness, higher negative and lower positive mood at work, compared to their female peers. Are male nurses unhappy? More research is needed to investigate if this pattern exists in other health care settings or populations such as medical residents. Age, tenure, job classification, and supervisory status were unrelated to the outcome.

Safety climate is an important contextual variable in safety research. It helps individuals interpret cues in their working environment to identify organizationally important behaviors. When there is strong managerial support for safety, adequate safety feedback and training, few obstacles to compliance, and when necessary equipment is provided, nurses are more likely to utilize their safety knowledge. In the present sample, individually perceived safety climate within a hospital unit was positively correlated with compliance among nurses in that unit. Those nurses who perceived high emphasis on safety within their hospital unit were more likely to comply. They were also more likely to form broad compliance-specific role definitions that incorporated diligent compliance into the required behavior category. These findings suggest that health care organizations that emphasize safety through training and other managerial practices may see an increase in safety compliance among their employees.

The hypothesis about the unit-level nature of safety climate was not supported by the data. It appears that, in the present sample, employees did not share strong common perceptions about the safety climate within their units. Statistical analyses suggested that, despite working on the same hospital unit, nurses had dissimilar perceptions of emphasis on safety. This may be attributed to the fact that hospital setting is a complex environment and employees attend to multiple safety-related cues in their work setting. According to Zohar and Luria (2004), safety climate strength also depends on extent to which the management follows consistent patterns of behavior when implementing safety. If the patterns of managers' behavior are variable and managers inexplicably modify the priority of safety, the consensus among group members will be reduced. The hypotheses were re-examined with safety climate conceptualized as an individual-level perception and not as a shared socially-constructed phenomenon.

In their investigation of organizational citizenship among food service employees, Clark et al. (manuscript under review) found that OCB-specific role definition breadth was related to conscientiousness, agreeableness, affectivity, and job satisfaction. Despite expectations, there was no link between compliance-specific role definitions, employees' conscientiousness, positive mood, and job satisfaction. Negative affect at work was the only personality variable correlated with role definition. This may be attributed to the type of psychological mechanisms that may be responsible for safety role definitions. Additional data collected during this study support this supposition. Organizational citizenship-specific role definitions collected from the same sample were correlated with self-reported conscientiousness, agreeableness, affectivity, and job satisfaction replicating Clark's et al. findings (manuscript under review). Safety-related role definitions appear to be a distinct phenomenon, dissimilar to previously studied OCB-specific role definitions.

The findings suggest that safety-specific role definitions are highly sensitive to environmental cues. In the present study, most personality and attitude predictors were unrelated to safety role definitions, whereas, individual perceptions of safety climate were positively related to role definition breadth. When employees perceived a strong emphasis on safety within their unit, they were more likely to have broad role definitions. Moreover, there were statistically significant between-unit differences in role definitions. HCW's hospital units explained 21% of their role definition variance with employees of non-surgical hospital units reporting lower overall role definition means. In highly specialized health care setting, role definitions specific to safety compliance may be more influenced by strong environmental cues and less by the employee's personality.

It is also possible that having had or having witnessed a work-related injury may influence nurse's safety-specific role definition. Nurses working on surgical units are at a higher risk of exposure to contaminants and are more likely to have a first- or second-hand experience with occupational exposure. They may be more directly aware of the potential life-saving benefits of safety compliance and, as a consequence, consider it an important part of their job responsibilities. More research is needed to further investigate this hypothesis.

Previously, researchers have raised several questions about the nature of role definition construct and its role in predicting work behavior (Hofmann et al., 2003; Morrison, 1994; Tepper et al., 2001). It has been suggested that role definition mediates the relationship between predictors and work performance (Morrison, 1994). Current results suggest that role definition may have a buffering effect on the predictor- safety compliance relationship. It also appears that individuals with broad compliance-specific role definitions are more consistent in their compliance. Their work performance is less affected by their emotions and/or job attitudes

(Tepper et al., 2001). Whereas those who have narrow role definitions are likely to demonstrate a stronger link between their mood, attitudes, and safety compliance. From the employer's point of view, broad role definition might be very desirable because it acts as a buffer against potentially negative influences on job performance. A person who believes that a particular behavior is an expected and required part of his or her job will consistently perform that behavior despite negative mood, low job satisfaction, or, as in Tepper et al.'s (2001) study, low organizational justice perceptions.

Implications. These findings may have important implications for organizational theory and practice. Role definition appears to be an important predictor of organizational behavior. It suggests that employees actively define their own roles and behaviors. Role definition has motivational properties that are linked to more consistent performance in a variety of organizational settings. These findings suggest that role theory could be useful in further exploration of safety behavior. In the future, this exploration should expand beyond cross-sectional research designs and consider clarifying causal links between role definition and behavior. Based on cross-sectional results of this study, I am unable to completely rule out the possibility that performance may influence role definitions or that this relationship may be reciprocal in nature.

Present finding may have important implications for human resource management in general and employee selection in health care professions in particular. Pre-employment assessment of job applicants' conscientiousness may help employers identify future employees who are likely to adhere to life-saving safety regulations. Selecting conscientious employees may lead to fewer work-related injuries and reduced economic and human costs.

In addition to compliance with Universal Precautions, the present model could also help explain a wide variety of other safety behaviors. Pre-employment assessment of job-specific role definition breadth could be useful in predicting future work performance. It has the desirable criterion as well as content validity and would be face valid in the eyes of the test-taker. The expanded model may provide useful information for researchers and practitioners who are interested in predicting and managing organizational performance. In situations where noncompliance is a threat to employees' health and well being, such as health care, it would be valuable for the employers to be able to ensure broad role definition. More research is needed to determine the organizational processes that influence the formation of role definition. Can role definition be influenced by training, feedback, or social interactions with coworkers? These and other questions will be answered through future research efforts.

Limitations.

In survey research, measures are often obtained from a single source. This raises concern about introducing common method variance together with meaningful variance. The data in the present study were obtained from coworker dyads of hospital nurses. Predictor measures were reported by the focal person, whereas the outcome variable was reported by his or her coworker. By obtaining the information about safety compliance from a knowledgeable peer, I attempted to reduce the common method bias. Social desirability is a potential threat to validity of self-reported measures of socially desirable behaviors such as compliance with safety. Not relying solely on self-report is a methodological strength of this study. This could have been an even stronger study had it been possible to randomly assign peers to each focal nurse. Instead of being randomly selected, peers were nominated by focal nurses themselves and were likely to be their personal friends. It is still possible, therefore, that coworker rating variance may have been

contaminated by leniency bias and social desirability. To make their friend appear in a more positive light, the coworker may have provided inflated ratings of his or her compliance. To obtain less contaminated and more relevant measures, in future research compliance should be assessed using a variety of methods and sources such as a combination of self-report, supervisor ratings, and records of reported injuries.

The validity and generalizability of present findings may have been negatively impacted by low return rates. Unfortunately it was impossible to compare the respondents to non-respondents to determine if there were important systematic differences between the two groups. Non-response is a common problem in organizational survey research. Researchers have identified several characteristics that distinguish survey respondent from non-respondents (Rogelberg, Conway, Sederburg, Spitzmüller, Aziz, & Knight, 2003; Rogelberg, Luong, Sederburg, & Cristol, 2000; Spitzmüller, Glenn, Barr, Rogelberg, & Daniel, 2006). It has been found that non-respondents tend to have lower job satisfaction, weaker commitment to their organizations, and stronger turnover intentions (Rogelberg et al., 2000). So-called active non respondents who intentionally disregard organizational surveys are also less conscientious (Rogelberg et al., 2003). Passive non-respondents, those who forget to fill out the survey, tend to be low on agreeableness. Individuals who fail to comply with safety regulations may have similar psychological profiles to those who fail to complete organizational surveys. Non-respondents in the two participating hospitals may have been the non-compliant or low-compliant employees missing from the final sample. The obtained sample may have not been representative of the entire population with respect to a least two important psychological variables—conscientiousness and job satisfaction (Rogelberg et al., 2003). It is likely that the ranges of scores on several key variables were restricted as a consequence of non-response.

Low return rates combined with reliance on matched pairs for many hypotheses tests and possible range restrictions have created some methodological problems. There were 95 matched survey pairs leaving the remaining 73 focal surveys unmatched and excluded from most, though not all, analyses. Matched and un-matched focal nurse surveys were compared on several characteristics and there were no statistically significant group differences in terms of predictor variables. The size of the sample and restricted range, however, may have negatively impacted the power of the analyses, especially when interaction hypotheses were tested. Despite this, the present study produced outcomes that may be both theoretically and practically valuable.

The negative skew of the measures and low variability in compliance-specific role definitions and compliance ratings might be a reflection of strong emphasis on safety in health care and be attributed to the fact that UP compliance has been strictly enforced in hospitals for almost 15 years. Few hospital employees would consider safety compliance to be a discretionary behavior, as the data indicate. Moreover, Gershon's measure was not designed to capture discretionary behaviors. Despite the low level of discretion associated with safety compliance in a hospital setting, there was still evidence that health care workers do form unique perceptions of their job requirements and expectations. Many of the present findings are far from being conclusive. I hope that this exploratory study helps stimulate future research investigations in this important area of organizational performance.

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Table 1. Occupational Composition of the Focal HCW Sample

Focal HCW's Occupation	Frequency	Percent	Valid Percent
Registered Nurse	102	60.0	61.1
Licensed Practical Nurse	41	24.1	24.6
Nursing Student	13	7.6	7.8
Personal Care Assistant	8	4.7	4.8
State Tested Nurse Aid	2	1.2	1.2
Other	1	.6	.6
Missing	3	1.8	
Total	170	100.0	

Table 2. Reliability Analysis: Item-Level Descriptive Statistics and Item-Total Statistics for 13-item Compliance-specific Role Definitions Scale.

	Item Statistics		Item-Total Statistics			
Compliance-specific Role Definition Scale Items	Mean	SD	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
*1. Disposing of sharp objects into a sharps container**	*4.99*	*0.15*	*56.73*	*16.27*	*0.01*	*0.62*
*2. Washing hands after removing disposable gloves.**	*4.91*	*0.42*	*56.81*	*15.49*	*0.20*	*0.61*
3. Wearing a disposable outer garment that is resistant for blood and body fluids whenever there is a chance of soiling my clothes at work	4.59	0.85	57.13	13.48	0.34	0.58
4. Wearing disposable gloves whenever there is a chance of soiling my clothes at work with blood or body fluids	4.96	0.24	56.76	15.39	0.46	0.60
5. Wearing protective eye shields whenever there is	4.67	0.73	57.05	13.62	0.40	0.57

possibility of a splash or splatter in my eyes						
6. Wearing a disposable face mask whenever there is a possibility of a splash or splatter in my mouth	4.67	0.76	57.05	13.12	0.47	0.56
7. Disposing of all potentially contaminated materials into a labeled bag for disposal as biomedical waste	4.89	0.46	56.83	14.68	0.41	0.59
*8. Promptly wiping up all potentially contaminating spills with a disinfectant**	*4.48*	*1.04*	*57.24*	*13.59*	*0.21*	*0.62*
9. Refraining from eating or drinking while working in an area where there is a possibility of becoming contaminated	4.71	0.67	57.01	14.22	0.33	0.59
*10. Taking special caution when using scalpels or other sharp objects**	*4.72*	*0.89*	*57.00*	*14.24*	*0.19*	*0.61*
*11 Refraining from recapping needles that have been contaminated with blood**	*4.81*	*0.74*	*56.91*	*14.18*	*0.29*	*0.59*
*12. Wearing gloves while drawing a patient's blood**	*4.41*	*1.31*	*57.31*	*12.80*	*0.19*	*0.64*
13. Treating all materials that have been in contact	4.91	0.33	56.81	15.39	0.32	0.60

with patients' body fluids as if they were infectious

Note. $N = 168$. Cronbach's Alpha = .618. * Item was removed because of low corrected item-total correlation.

Table 3. Reliability Analysis: Item-Level Descriptive Statistics and Item-Total Statistics for modified 7-item safety compliance-specific Role Definition Scale.

Items	Mean	S. D.	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1. Wearing a disposable outer garment that is resistant for blood and body fluids whenever there is a chance of soiling my clothes at work	4.60	0.84	.53	.69
2. Wearing disposable gloves whenever there is a chance of soiling my clothes at work with blood or body fluids	4.96	0.24	.43	.73
3. Wearing protective eye shields whenever there is possibility of a splash or splatter in my eyes	4.67	0.73	.59	.66
4. Wearing a disposable face mask whenever there is a possibility of a splash or splatter in my mouth	4.68	0.76	.69	.63
5. Disposing of all potentially contaminated materials into a labeled bag for disposal as biomedical waste	4.89	0.45	.41	.71
6. Refraining from eating or drinking while working in an area where there is a possibility of becoming contaminated	4.70	0.68	.33	.73
7. Treating all materials that have been in contact with patients' body fluids as if they were infectious	4.91	0.32	.32	.73

Note. $N = 171$. Cronbach's Alpha = .734.

Table 4. Reliability Analysis: Item-Level Descriptive Statistics and Item-Total Statistics for 7-item Coworker-reported Safety Compliance Subscale

Item Statistics

Items	Mean	S. D.	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1. Wears a disposable outer garment that is resistant for blood and body fluids whenever there is a chance of soiling his/her clothes at work	4.45	1.00	.81	.88
2. Wears disposable gloves whenever there is a chance of soiling his/her hands at work with blood or body fluids	4.74	0.74	.73	.89
3. Wears protective eye shields whenever there is possibility of a splash or splatter in his/her eyes	4.31	1.04	.73	.89
4. Wears a disposable face mask whenever there is a possibility of a splash or splatter in his/her mouth	4.34	1.03	.74	.89
5. Disposes of all potentially contaminated materials into a labeled bag for disposal as biomedical waste	4.73	0.71	.78	.88
6. Refrains from eating or drinking while working in an area where there is a possibility of becoming contaminated	4.52	0.80	.54	.91
7. Treats all materials that have been in contact with patients' body fluids as if they were infectious	4.67	0.75	.75	.89

Note. N = 103. Cronbach's Alpha = .903:

Table 5. Descriptive Scale Statistics, Bivariate Correlations, and Internal Consistency Coefficients

Variable	Mean	S. D.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Age	3.30	1.12	-										
2. Sex[1]	1.06	0.24	-.07	-									
3. Supervisory Status[2]	1.56	0.51	-.06	-.03	-								
4. Tenure[3]	83.70	96.59	.37**	-.02	-.14	-							
5. Role Definition	4.77	0.38	.13	.04	-.08	.11	(*.73*)						
6. Job Satisfaction	4.02	0.63	.15	-.24**	.12	.07	.14	(*.79*)					
7. Conscientiousness	4.31	0.49	-.02	-.15*	.06	-.10	.12	.16*	*(.85)*				
8. Positive Mood	4.02	0.61	.04	-.21**	.12	-.08	.13	.60**	.39**	(*.90*)			
9. Negative Mood	1.55	0.41	-.11	.31**	-.07	-.15	-.23**	-.51**	-.25**	-.44**	(*.79*)		
10. Safety Climate	4.13	0.59	.12	-.17*	.16	.10	.27**	.36**	.20*	.40**	-.32**	(*.89*)	
11. Safety Compliance	4.54	0.70	.16	-.45**	-.05	-.04	.28**	.46**	.26*	.41**	-.40**	.36**	(*.90*)

Note. * $p < .05$. ** $p < .01$ Sample sizes range from 86 to 160 due to missing data. [1]Feale was coded as 1 and male was coded as 2. [2]Non-supervisors were coded as 2 and supervisors were coded as 1. [3]Tenure was measured in months. Cronbach's Alpha's are presented in parentheses.

Table 6. Hierarchical Linear Regression Analysis. Outcome Variable: Coworker's Ratings of Safety Compliance.

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	S. E.	*Beta*	*t*	*p*
Step 1	Predictors					
1	Sex	-.99	.31	-.32	-3.13	.05
2	Tenure	-.00	.00	-.20	-1.96	.05
3	Age	.06	.07	.08	.80	.43
4	Supervisory Status	-.12	.14	-.08	-.82	.41
5	Job Satisfaction	.33	.16	.28	2.00	.05
6	Conscientiousness	.28	.18	.16	1.55	.13
7	Positive Mood	.07	.16	.06	.42	.67
8	Negative Mood	-.04	.20	.03	-.21	.83
9	Safety Climate	.11	.14	.09	.78	.44
Model Summary:		Adjusted R^2 = .34**				
Step 2	Predictors					
1	Sex	-1.17	.32	-.38	-3.70	.00
2	Tenure	.00	.00	-.20	-2.09	.04
3	Age	.03	.07	.04	.38	.71
4	Supervisory Status	-.12	.14	-.08	-.87	.39
5	Job Satisfaction	.32	.16	.27	1.98	.05

6	Conscientiousness	.24	.18	.14	1.35	.18
7	Positive Mood	.06	.15	.05	.41	.68
8	Negative Mood	.02	.20	.01	.09	.93
9	Safety Climate	.04	.14	.03	.29	.77
10	Safety role definitions	.41	.18	.23	2.21	.03
	Model Summary:		Adjusted R^2 = .37**,		ΔR^2 = .04*	

Note. * $p < .05$, ** $p < .01$.

Table 7. Hierarchical Linear Regression Analysis. Outcome Variable: Self-Reported Role Definition.

Model	Predictors:	Unstandardized Coefficients		Standardized Coefficients		
		B	S. E.	*Beta*	*t*	*p*
Step 1						
	Hospital Units	-	-	-	-	-
	Model Summary:	Adjusted $R^2 = .10$, $\Delta R^2 = .21$**, $\Delta F = 1.91$, $p < .05$				
Step 2						
	Hospital Units	-	-	-	-	-
	Negative Mood	-.13	.08	-.14	-1.64	.10
	Safety Climate	.13	.05	.19	2.33*	.02
	Model Summary:	Adjusted $R^2 = .16$, $\Delta R^2 = .06$**, $\Delta F = 5.64$, $p < .00$				

Note. * $p < .05$, ** $p < .01$

Table 8. Regression Results for the Mediating effect of Compliance-specific Role Definitions. Negative Mood is the Predictor Variable.

	Unstandardized Regression Weights					
	Step 1	Step 2	Step 3	Step 4		Sobel Test
Outcome Variable	*c*	*a*	*b*	*c*-*c*′	*c*’	*t*
Safety Compliance	-.45**	-.24**	.72**	.15	-.30*	2.21*

Note. *c* is a path estimate for the outcome regressed on negative mood; *a* is a path estimate for safety-specific role definitions regressed on negative mood; *b* is a path estimate for the outcome variable regressed on role definition; *c*’ is a path coefficient for the outcome regressed on negative mood after the effect of role definition was accounted for; *c* – *c*’ is the change in initial path coefficient for the outcome regressed on negative mood after the effect of role definition was accounted for.

* $p < .05$, ** $p < .01$.

Table 9. Test of Role Discretion Hypotheses: Moderated Linear Regression. Outcome Variable: Safety Compliance.

	Unstandardized Coefficients		Standardized Coefficients		Model Summary		
					Adjusted		
	B	S. E.	*Beta*	*t*	R^2	ΔR^2	ΔF
Predictor: Conscientiousness							
Step 1					.31	.34**	10.91**
Sex	-1.51	.28	-.48	-5.33**			
Tenure	.00	.00	-.15	-.164			
Conscientiousness	.22	.13	.15	1.60			
Role Definition	.53	.16	.30	3.21**			
Step 2					.28	.02	2.17
Sex	-1.52	.28	-.48	-5.46**			
Tenure	.00	.00	-.15	-1.72			
Conscientiousness	2.80	1.30	1.89	2.14*			
Role Definition	2.70	1.10	1.51	2.45*			
Interaction Term	-.55	.28	-2.36	-1.99*			
Predictor: Negative Mood					.33	.36**	11.85**

	Step 1						
Sex		-1.36	.30	-.43	-4.58**		
Tenure		.00	.00	-.15	-1.67		
Negative Mood		-.30	.15	-.20	-2.00*		
Role Definition		.51	.16	.30	3.13**		
	Step 2					.32	.00	.00
Sex		-1.36	.30	-.43	-4.51**		
Tenure		.00	.00	-.15	-1.65		
Negative Mood		-.25	1.08	-.16	.23		
Role Definition		.53	.47	.30	1.14		
Interaction Term		.01	.23	-.03	-.05		
Predictor:							
Positive Mood							
	Step 1					.36	.39**	13.41**
Sex		-1.37	.28	-.44	-3.91**		
Tenure		.00	.00	-.14	-1.65		
Positive Mood		.29	.10	.26	2.85**		
Role Definition		.50	.16	.28	3.15**		
	Step 2					.36	.00	.95
Sex		-1.39	.28	-.44	-4.97**		
Tenure		.00	.00	-.14	1.58		
Positive Mood		1.40	1.14	1.24	1.23		

Role Definition	1.28	.82	.72	1.57			
Interaction Term	-.23	.24	-1.17	-.98			
Predictor:							
Job Satisfaction							
Step 1					.40	.42**	15.85**
Sex	-1.26	0.27	-0.40	-4.61**			
Tenure	.00	.00	-.21	-2.51*			
Job Satisfaction	0.40	0.10	0.35	3.91**			
Role Definition	0.48	0.15	0.27	3.14**			
Step 2					.39	.00	.64
Sex	-1.30	0.27	-0.41	-4.67**			
Tenure	.00	.00	-.21	2.43*			
Job Satisfaction	1.40	1.25	1.22	1.12			
Role Definition	1.22	.93	.68	1.31			
Interaction Term	-0.21	0.26	-1.05	-.80			

Note. * $p < .05$, ** $p < .01$.

Table 10. Results of Moderated Linear Regression: Test of Climate-predictor Interaction.

	Unstandardized Coefficients		Standardized Coefficients		Model Summary		
Predictor:	*B*	S. E.	*Beta*	*t*	Adjusted R^2	ΔR^2	ΔF
Step 1					.09	.11**	4.65**
Age	.04	.02	.12	1.52			
Sex	.23	.13	.14	1.74			
Conscientiousness	.06	.06	.08	1.01			
Safety Climate	.17	.05	.27	3.37**			
Step 2					.08	.00	.55
Age	.04	.03	.12	1.55			
Sex	.22	.13	.13	1.73			
Conscientiousness	.43	.38	.43	.90			
Safety Climate	.46	.39	.71	1.90			
Interaction Term	-.06	.09	-.62	-.75			
Step 1					.11	.14**	6.11**
Age	.03	.03	.10	1.30			
Sex	.30	.13	.18	2.29*			
Negative Mood	-.18	.08	-.20	-2.44*			
Safety Climate	.15	.05	.24	2.97**			
Step 2					.16	.05	9.26**
Age	.03	.03	.10	1.33			

Sex		.32	.13	.19	2.50*		
Negative Mood		-1.31	.38	-1.41	-4.48**		
Safety Climate		-.28	.15	-.43	-1.85		
Interaction Term		.29	.09	1.20	3.04**		
	Step 1					.08	.11**	4.60**
Age		.04	.03	.11	1.45		
Sex		.23	.13	.14	1.74		
Positive Mood		.03	.05	.05	.59		
Safety Climate		.18	.05	.27	3.27**		
	Step 2					.09	.01	1.43
Age		.04	.03	.11	1.47		
Sex		.23	.13	.14	1.77		
Positive Mood		.40	.32	.63	1.28		
Safety Climate		.55	.32	.85	1.74		
Interaction Term		-.09	.07	-.97	-1.20		
	Step 1					.09	.12**	5.02**
Age		.04	.03	.11	1.48		
Sex		.24	.13	.14	1.83		
Job Satisfaction		.06	.05	.09	1.08		
Safety Climate		.17	.05	.27	3.24		
	Step 2					.11	.03	4.85*
Age		.04	.03	.11	1.49		

Sex	.26	.13	.16	2.02*
Job Satisfaction	.73	.31	1.19	2.35*
Safety Climate	.83	.30	1.28	2.74**
Interaction Term	-.16	.07	-1.75	-2.20*

Note. * $p < .05$, ** $p < .01$.

Figure Captions

Figure 1. DeJoy et al.'s (1998) work-system model of occupational safety and health.

Figure 2. The Dynamic Model of Role Definition. Clear circles represent the entire job task domain; shaded inner circles represent the core job tasks, and dashed ellipses represent tasks related to organizational citizenship.

Figure 3. Role enlargement hypothesis (H3): Role definition as a mediator.

Figure 4. Role discretion hypothesis (H4): Role definition as a moderator.

Figure 5. Conceptual model including multi-level hypotheses

Figure 6. Interaction graph: Role definition as a moderator of the relationship between conscientiousness and safety compliance.

Figure 7. . Interaction graph: Climate as a moderator of the relationship between negative mood and compliance-specific role definition.

Figure 8. Interaction graph: Climate as a moderator of the relationship between negative mood and compliance-specific role definition.

Figure 1. DeJoy et al.'s (1998) work-system model of occupational safety and health.

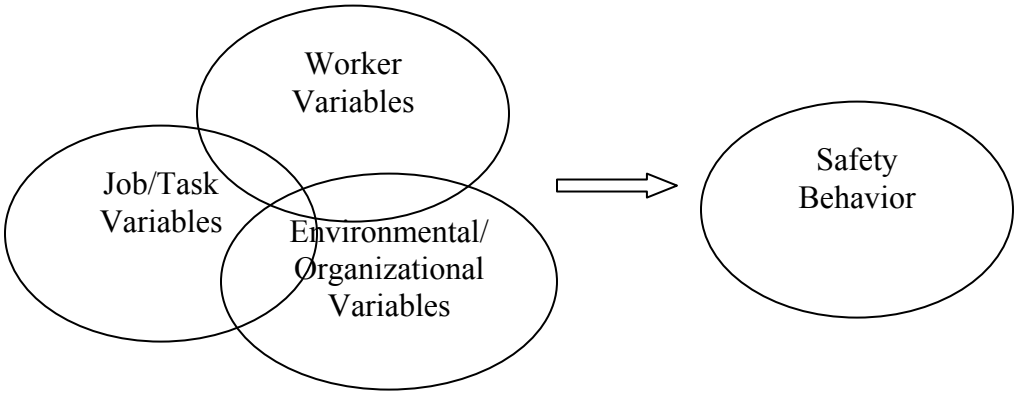
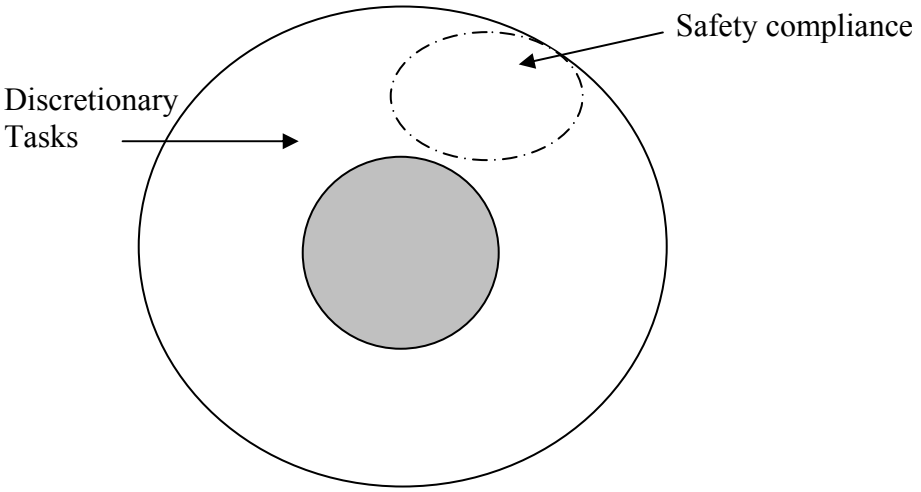


Figure 2. The Dynamic Model of Role Definition. Clear circles represent the entire job task domain; shaded inner circles represent the core job tasks, and dashed ellipses represent tasks related to safety compliance.

A. An Example of Narrow Role Definitions



B. An Example of Broad Role Definitions

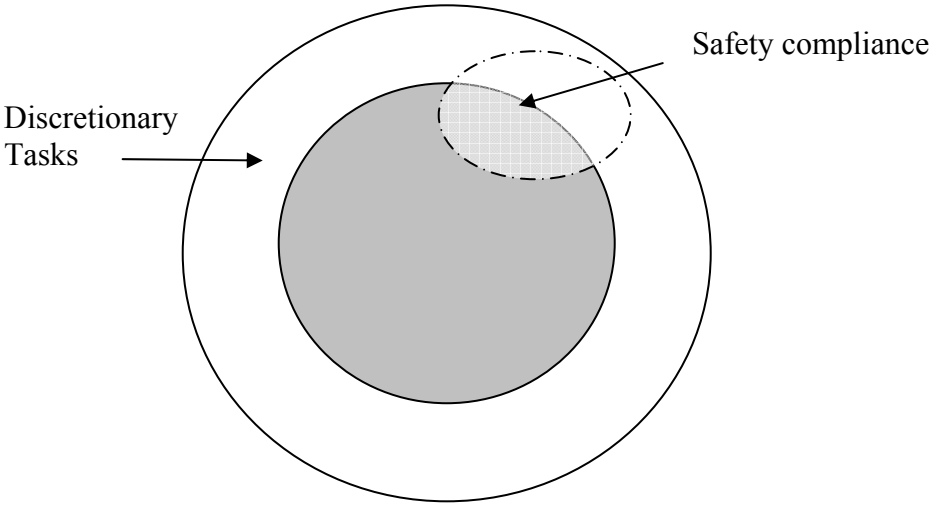


Figure 3. Role enlargement hypothesis (H3): Role definition as a mediator.

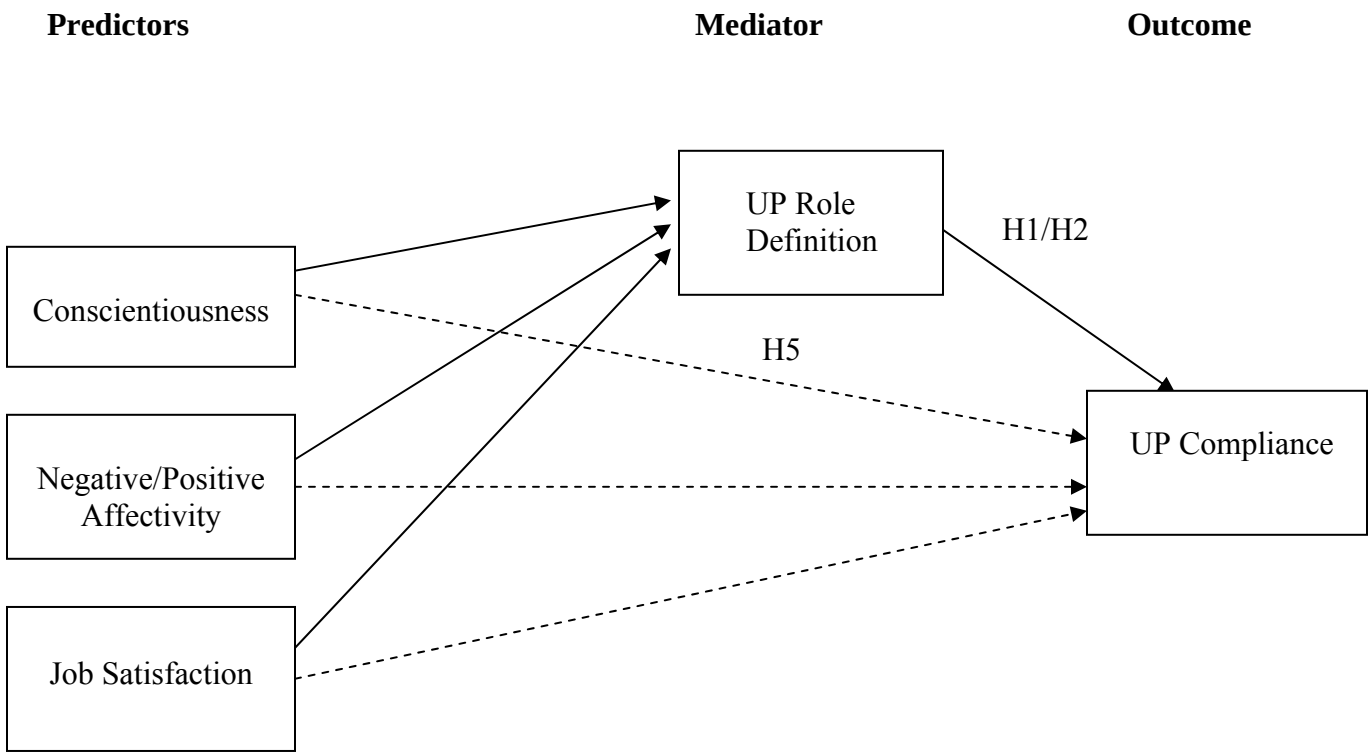


Figure 4. Role discretion hypothesis (H4): Role definition as a moderator.

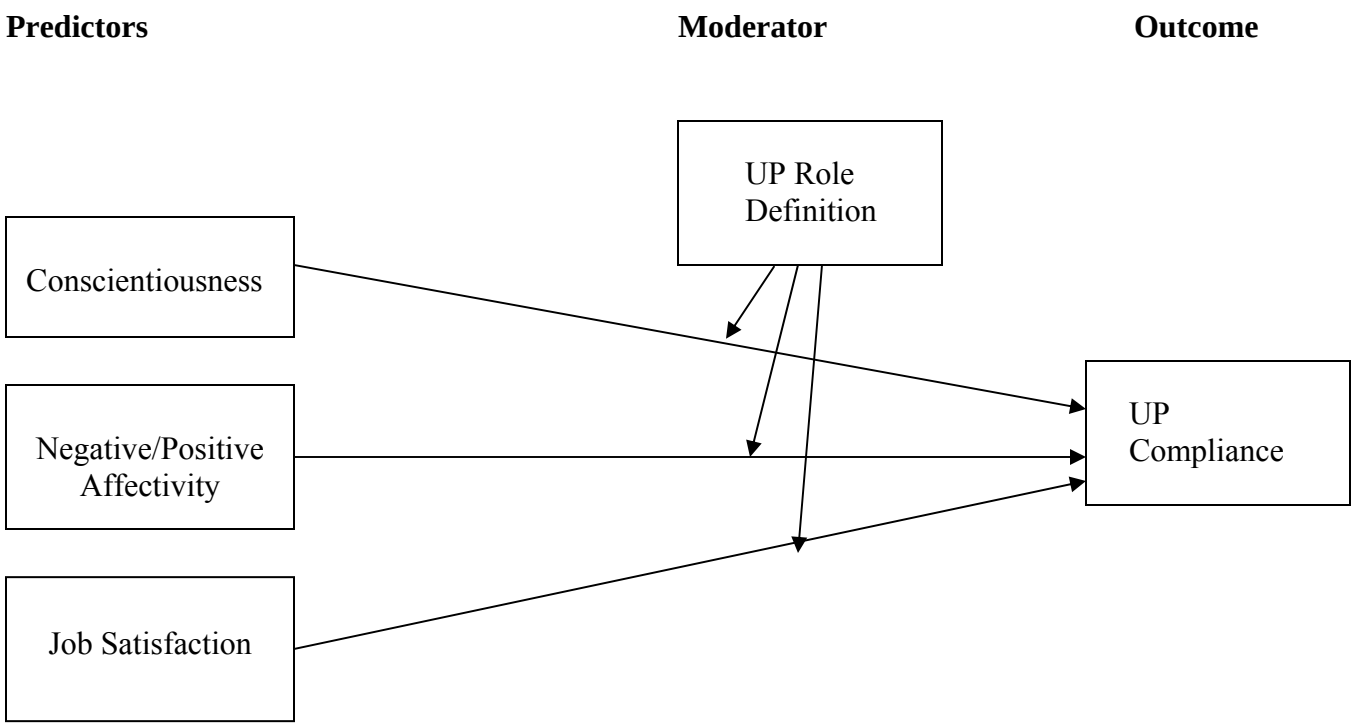


Figure 5. Conceptual model including multi-level hypotheses: Unit-level safety climate as a mediator of the predictor- role definition relationship.

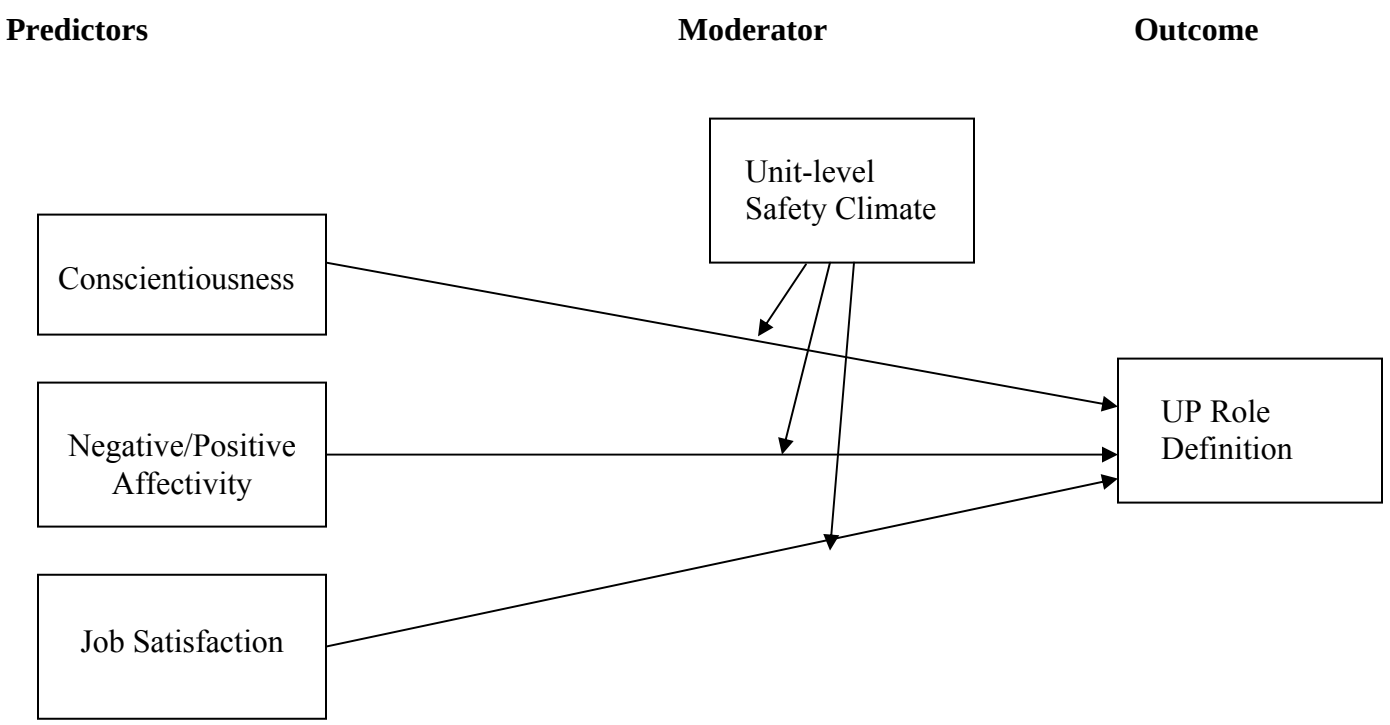


Figure 6. Interaction graph: Role definition as a moderator of the relationship between conscientiousness and safety compliance.

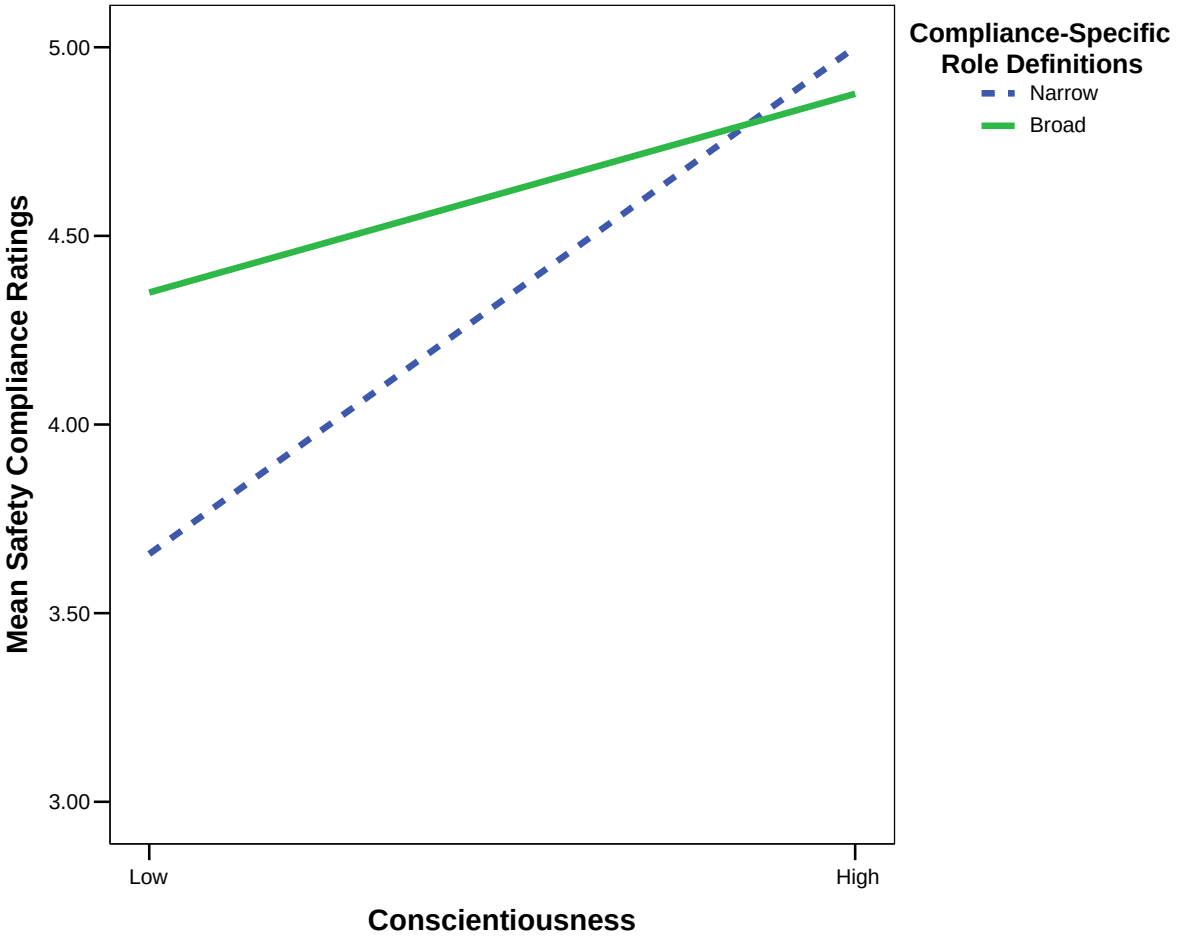


Figure 7. Interaction graph: Climate as a moderator of the relationship between negative mood and compliance-specific role definition.

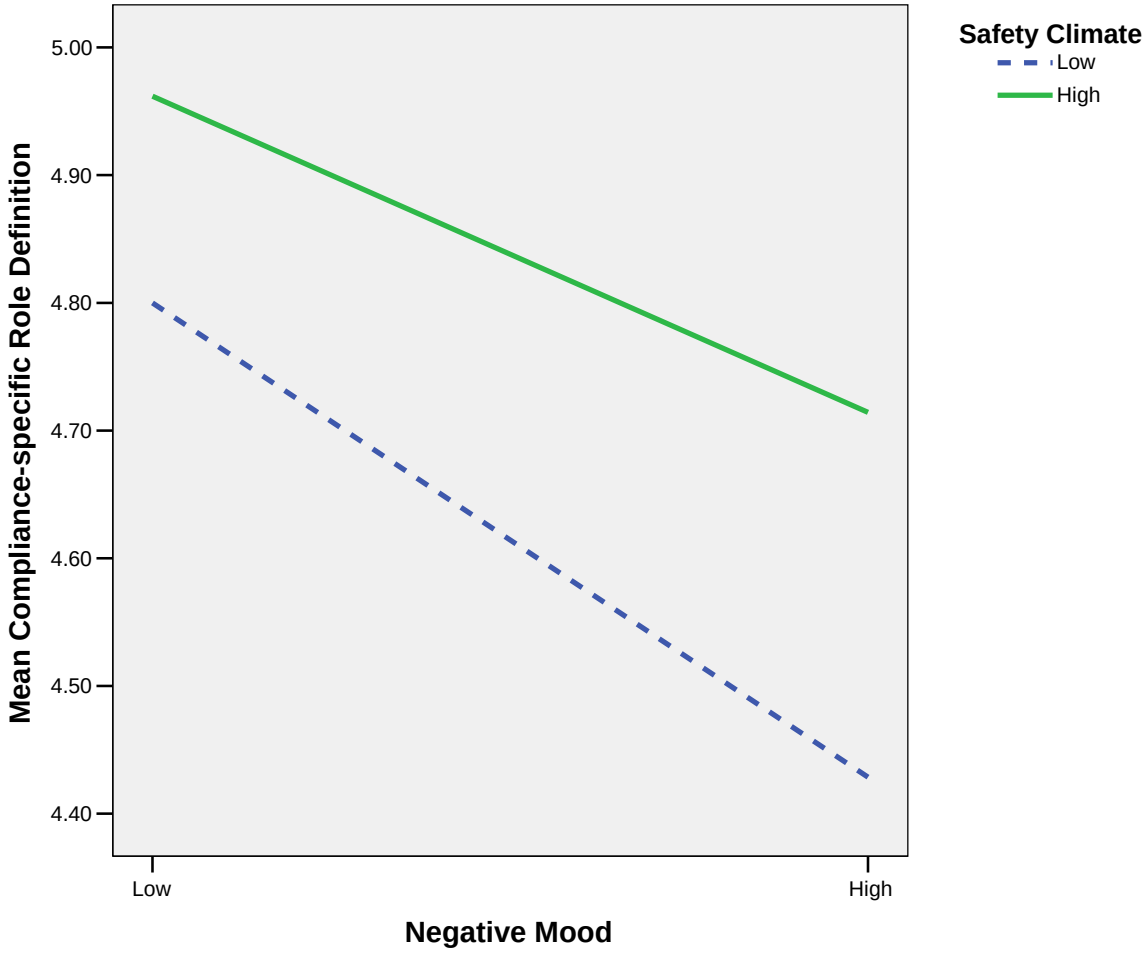
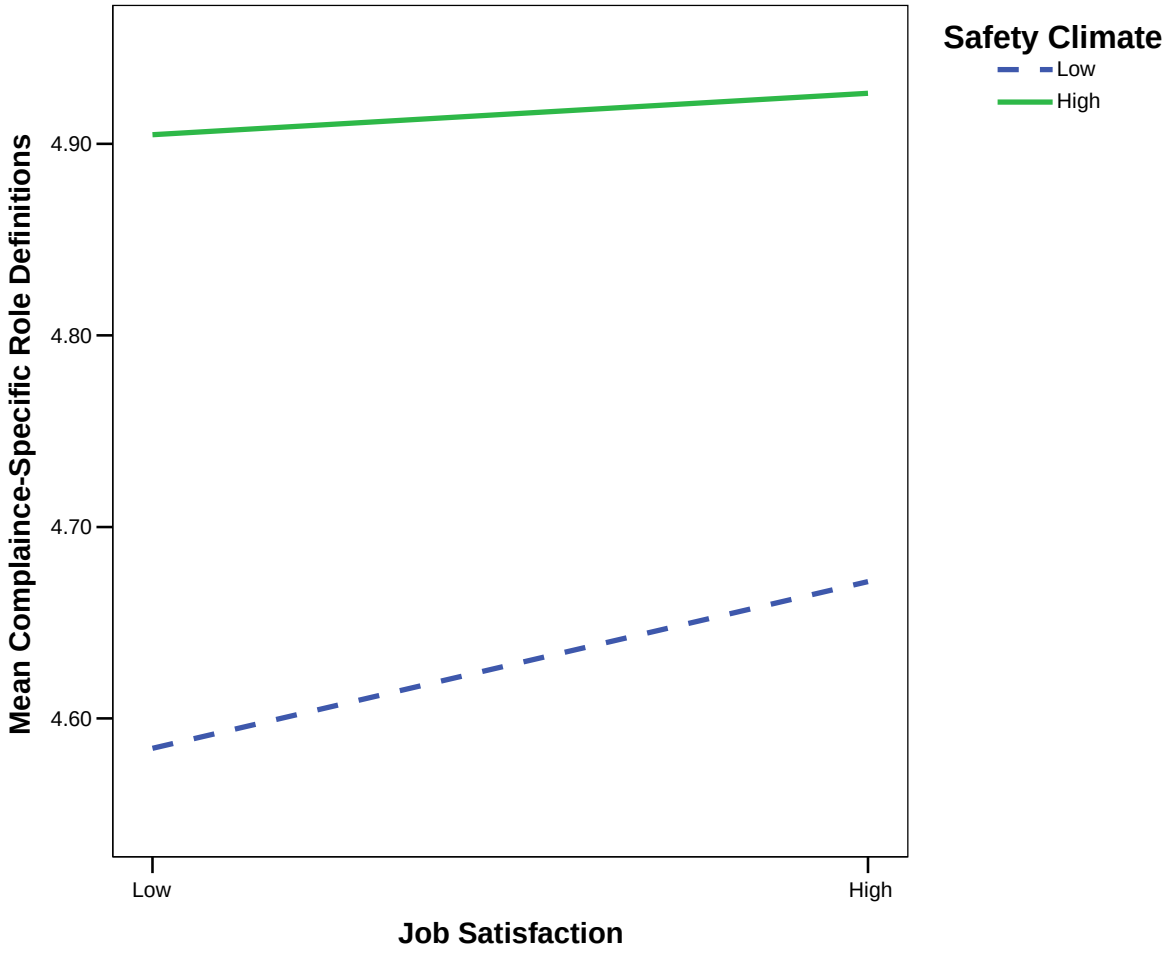


Figure 8. Interaction graph: Climate as a moderator of the relationship between negative mood and compliance-specific role definition.



APPENDIX A. COWORKER SURVEY

COWORKER SURVEY

Dear *** Employee,

Preventing work-related injuries among nurses is a great concern in many hospitals. You are invited to participate in the study of occupational safety in nursing supported by the grant from the National Institute for Occupational Safety and Health. I am a researcher from Bowling Green State University and I would like to ask for your help with this important study.

Your coworker had asked you to participate in this project by filling out a brief, five-minute survey about your job-related observations of him/her. Through your participation in this research you will help us learn more about nurses' work.

Although I will link your answers with your coworker's response (for data analysis purposes), all information that you provide will remain confidential. Your coworker will not see any of the information you provide. Your employer will not be shown your or your coworker's answers.

Filling out this survey is **entirely voluntary** and non-participation will not result in penalty or loss of benefits to which you would otherwise be entitled. Please answer the following questions as best as you can, but feel free to skip any question that makes you uncomfortable or that you feel you cannot answer well.

Your answers will be kept **confidential**. **Do not write your name on the survey**. To protect the confidentiality of your responses, I will only show combined, group-level results in our reports. While there are no direct benefits to you for participating in this study, your participation can help us further understand work behaviors of health care workers. The survey will take approximately 5 minutes to complete. Please use the enclosed business return envelope to seal your survey and mail it directly to our research team.

To reward you for your participation in this study, you will have a chance to win one of 15 $20.00 gift certificates. **Please write down your name and a contact number where I can reach you if you are a winner on the provided raffle ticket and mail it to me together with your survey.** Your raffle ticket and your survey will be kept separately. I will contact you if you are a winner.

Thank you for your help,

Olga Clark, M. A.

Contact Information. If you have any questions about this research you may contact Olga Clark at 419.372.4339 (oclark@bgnet.bgsu.edu) or Professor Michael Zickar at 419.372.9984 (mzickar@bgnet.bgsu.edu) in the Department of Psychology at Bowling Green State University. You may also contact the Chair, Human Subjects Review Board, Bowling Green State University, 419.372.7716 (hsrb@bgnet.bgsu.edu), or ***, Clinical Research Compliance Coordinator at the **** IRB office ***-**-** , with any questions or concerns you may have about your rights as a research participant. This study has been approved by the *** IRB, reference number 104970.

YOU MAY DETACH THIS PAGE AND KEEP IT FOR YOUR RECORDS

*** Medical Center Confidential Survey of Nurses

1. Your coworker had asked you to participate in this project by filling out a brief, five-minute survey about your job-related observations of him/her. Please answer these questions about your coworker to the best of your knowledge. Your answers will have no negative consequences for you or your coworker. Your answers will be kept confidential.

Instructions: Please think of the ***person who asked you to fill out this survey*** and read the list of behaviors below. For each item, circle ***one number*** on the scale from 1 to 5 that generally describes ***your coworker's typical work behavior***.						
He or she always…..	*Strongly Disagree*					*Strongly Agree*
1. Disposes of sharp objects into a sharp container.	[1]	[2]	[3]	[4]	[5]	
2. Washes hands after removing disposable gloves.	[1]	[2]	[3]	[4]	[5]	
3. Wears a disposable outer garment that is resistant for blood and body fluids whenever there is a chance of soiling his/her clothes at work.	[1]	[2]	[3]	[4]	[5]	
4. Wears disposable gloves whenever there is a chance of soiling his/her hands at work with blood or body fluids.	[1]	[2]	[3]	[4]	[5]	
5. Wears protective eye shields whenever there is possibility of a splash or splatter in his/her eyes.	[1]	[2]	[3]	[4]	[5]	
6. Wears a disposable face mask whenever there is a possibility of a splash or splatter in his/her mouth.	[1]	[2]	[3]	[4]	[5]	
7. Disposes of all potentially contaminated materials into a labeled bag for disposal as biomedical waste.	[1]	[2]	[3]	[4]	[5]	
8. Promptly wipes up all potentially contaminating spills with a disinfectant.	[1]	[2]	[3]	[4]	[5]	
9. Refrains from eating or drinking while working in an area where there is a possibility of becoming contaminated.	[1]	[2]	[3]	[4]	[5]	
10. Takes special caution when using scalpels or other sharp objects.	[1]	[2]	[3]	[4]	[5]	
11. Refrains from recapping needles that have been contaminated with blood.	[1]	[2]	[3]	[4]	[5]	
12. Wear gloves while drawing a patient's blood.	[1]	[2]	[3]	[4]	[5]	
13. Treats all materials that have been in contact with patients' body fluids as if they were infectious.	[1]	[2]	[3]	[4]	[5]	
14. Covers for coworkers who are absent or on break.	[1]	[2]	[3]	[4]	[5]	
15. Always shows up on time for his/her shift.	[1]	[2]	[3]	[4]	[5]	
16. Helps orient or train new employees.	[1]	[2]	[3]	[4]	[5]	
17. Gives her/his time to coworkers who have work-related difficulties.	[1]	[2]	[3]	[4]	[5]	
18. Helps to make those around her/him more productive.	[1]	[2]	[3]	[4]	[5]	
19. Helps others with their work when they have too much to do.	[1]	[2]	[3]	[4]	[5]	
20. Is willing to share his/her work knowledge with new employees.	[1]	[2]	[3]	[4]	[5]	
21. Always completes his/her assigned work in a timely manner.	[1]	[2]	[3]	[4]	[5]	
22. Makes helpful work-related suggestion to his/her coworkers.	[1]	[2]	[3]	[4]	[5]	
23. Does extra work to help others.	[1]	[2]	[3]	[4]	[5]	
24. Lets his/her supervisor know in advance if she/he has to miss a shift.	[1]	[2]	[3]	[4]	[5]	

	Strongly Disagree				Strongly Agree
25. Comes to work early if needed.	[1]	[2]	[3]	[4]	[5]
26. Teaches new employees how to use work equipment.	[1]	[2]	[3]	[4]	[5]
27. Volunteers to help others when they have a heavy workload.	[1]	[2]	[3]	[4]	[5]
28. Makes sure that new employees feel welcome.	[1]	[2]	[3]	[4]	[5]
29. Goes out of his/her way to help coworkers.	[1]	[2]	[3]	[4]	[5]
30. Is always supportive of his/her coworkers.	[1]	[2]	[3]	[4]	[5]
31. Volunteers to do things without being asked.	[1]	[2]	[3]	[4]	[5]
32. Is polite and friendly to coworkers and patients.	[1]	[2]	[3]	[4]	[5]
33. Helps patients if they need assistance.	[1]	[2]	[3]	[4]	[5]
34. Arrives early so she/he is ready to work when his/her shift begins.	[1]	[2]	[3]	[4]	[5]
35. Does not coast (slack) when there is not much to do.	[1]	[2]	[3]	[4]	[5]
36. Always does the highest quality work possible.	[1]	[2]	[3]	[4]	[5]
37. Follows safety regulations when working.	[1]	[2]	[3]	[4]	[5]
38. Does not take extra breaks, even during slow periods.	[1]	[2]	[3]	[4]	[5]
39. Obeys rules and regulations, even if others do not do so.	[1]	[2]	[3]	[4]	[5]
40. Does not complain about things at work that cannot be changed.	[1]	[2]	[3]	[4]	[5]
41. Looks for more work to do, when finished with assigned work.	[1]	[2]	[3]	[4]	[5]
42. Works late or without a break if there is a lot of work to do.	[1]	[2]	[3]	[4]	[5]
43. Does not talk to his/her coworkers about things that are not work-related.	[1]	[2]	[3]	[4]	[5]
44. Never treats others at work with disrespect.	[1]	[2]	[3]	[4]	[5]
45. Does not criticize his/her organization.	[1]	[2]	[3]	[4]	[5]

2. Please indicate how strongly you agree or disagree with the following statement by ***circling*** the appropriate response:

"I feel I know the person whom I rated on the above questions very well"

Strongly Disagree Disagree Neither Agree Nor Disagree Agree Strongly Agree

3. How long have you worked with this person?_____years, months

Please tell us a little about yourself

This information will be used to understand a little bit about you. All of this information will be treated confidentially

1. How old are you? (check one): 18-24 ☐ 25-34 ☐ 35-44 ☐ 45-54 ☐ 55 or older ☐

2. What is your gender? (check one): Female ☐ Male ☐

3. On what unit do you currently work? (check one):

***	☐	***	☐	***	☐
***	☐	***	☐	***	☐
***	☐	***	☐	***	☐
***	☐	***	☐	***	☐

Other _____

4. How long have you been working on this unit?_____ years, _____ months

5. What shift do you currently work? (check one):
Day ☐ Evening ☐ Night ☐ Rotate ☐

6. What is your current job title? _____

Briefly describe what you do:_____

_____

_____

7. Do you supervise others? (check one): Yes ☐ No ☐

You have now completed the survey. We greatly appreciate your help in conducting this important research. Your opinion about this study is important to us. If you have any comments, concerns, or suggestions, please share them with us in the space below.

_____

Please use the provided postage-paid, addressed envelope to mail your survey back to the researchers. Don't forget to include your raffle ticket!

THANK YOU!

APPENDIX B. FOCAL HCW SURVEY

NURSING SAFETY SURVEY

Dear *** Medical Center Employee,

Preventing work-related injuries among nurses is a great concern in many hospitals. You are invited to participate in the study of occupational safety in nursing supported by the grant from the National Institute for Occupational Safety and Health. I am a researcher from Bowling Green State University and I would like to ask for your help with this important study.

Filling out this survey is entirely voluntary and non-participation will not result in penalty or loss of benefits to which you would otherwise be entitled. Please answer the questions as best as you can, but feel free to skip any question that makes you uncomfortable or that you feel you cannot answer well.

Your answers will be kept confidential. **Do not write your name on the questionnaire**. I also ask you that you do not discuss the information you've provided with others. To protect the confidentiality of your responses, I will only show combined, group-level results in my reports. While there are no direct benefits to you for participating in this study, your participation can help us further understand work behaviors of nurses. You must be at least 18 years of age to complete this survey. The survey will take approximately 10-15 minutes to complete.

In order for me to analyze your information, I also ask you to nominate someone you currently work with (a coworker) to fill out a brief, five-minute survey about his or her job-related perceptions of you. The coworker survey is printed on green paper. Although I will link the other person's ratings with your own response (for data analysis purposes), all information will remain confidential. You will not see your coworker's rating of you, and your coworker will not see any of the data you provide. Your employer will not be shown your or your coworker's answers.

Please use the enclosed business return envelope to seal your survey and mail it to our research team. Please pass the second business return envelope on to your coworker filling out the brief survey about his or her perceptions of you, so that their survey can also be returned to our research team.

To reward you for your participation in this study, you will have a chance to win one of 15 $20.00 gift certificates. **Please write down your name and a contact number where I can reach you if you are a winner on the provided raffle ticket and mail it to the researchers together with your survey.** Your raffle ticket and your survey will be kept separately. I will contact you if you are a winner.

Thank you for your help,

Olga Clark, M. A.

Contact Information. If you have any questions about this research you may contact Olga Clark at 419.372.4339 (oclark@bgnet.bgsu.edu) or Professor Michael Zickar at 419.372.9984 (mzickar@bgnet.bgsu.edu) in the Department of Psychology at Bowling Green State University. You may also contact the Chair, Human Subjects Review Board, Bowling Green State University, 419.372.7716 (hsrb@bgnet.bgsu.edu), or ***, Clinical Research Compliance Coordinator at the *** IRB office, ***-**-**, with any questions or concerns you may have about your rights as a research participant. This study has been approved by the *** IRB, reference number 104970.

YOU MAY DETACH THIS PAGE AND KEEP IT FOR YOUR RECORDS

*** Medical Center Confidential Survey of Nurses

1. Every job has a different set of requirements. Please read the list of tasks below. Are those tasks a required part of your formal job responsibilities? If a task is ***definitely a required part of your job*** it means that you are rewarded for doing or you may be punished for not doing it. If a task is ***definitely above your job requirements*** then you don't have to do it— you wouldn't be rewarded for doing it and you wouldn't be punished for not doing it.

Instructions: Please think of the ***work you do now*** and read the list of tasks below. For each item ***circle one number*** on the scale from 1 to 5 that generally describes your ***work responsibilities***. **1** means that the task is not required and **5** means that it is definitely required.

	*Definitely above my job requirement (Definitely **not required**)*				*Definitely part of my job (Definitely **required**)*
a. Disposing of sharp objects into a sharps container.	[1]	[2]	[3]	[4]	[5]
b. Washing hands after removing disposable gloves.	[1]	[2]	[3]	[4]	[5]
c. Wearing a disposable outer garment that is resistant for blood and body fluids whenever there is a chance of soiling my clothes at work.	[1]	[2]	[3]	[4]	[5]
d. Wearing disposable gloves whenever there is a chance of soiling my hands at work with blood or body fluids.	[1]	[2]	[3]	[4]	[5]
e. Wearing protective eye shields whenever there is possibility of a splash or splatter in my eyes.	[1]	[2]	[3]	[4]	[5]
f. Wearing a disposable face mask whenever there is a possibility of a splash or splatter in my mouth.	[1]	[2]	[3]	[4]	[5]
g. Disposing of all potentially contaminated materials into a labeled bag for disposal as biomedical waste.	[1]	[2]	[3]	[4]	[5]
h. Promptly wiping up all potentially contaminating spills with a disinfectant.	[1]	[2]	[3]	[4]	[5]
i. Refraining from eating or drinking while working in an area where there is a possibility of becoming contaminated.	[1]	[2]	[3]	[4]	[5]
j. Taking special caution when using scalpels or other sharp objects.	[1]	[2]	[3]	[4]	[5]
k. Refraining from recapping needles that have been contaminated with blood.	[1]	[2]	[3]	[4]	[5]
l. Wearing gloves while drawing a patient's blood.	[1]	[2]	[3]	[4]	[5]
m. Treating all materials that have been in contact with patients' body fluids as if they were infectious.	[1]	[2]	[3]	[4]	[5]
n. Covering for people who are absent or on break.	[1]	[2]	[3]	[4]	[5]
o. Always showing up on time for my shift.	[1]	[2]	[3]	[4]	[5]
p. Helping orient or train new employees.	[1]	[2]	[3]	[4]	[5]
q. Giving my time to coworkers who have work-related difficulties.	[1]	[2]	[3]	[4]	[5]
r. Helping to make those around me more productive.	[1]	[2]	[3]	[4]	[5]
s. Helping others with their work when they have too much to do.	[1]	[2]	[3]	[4]	[5]
t. Being willing to share my work knowledge with new employees.	[1]	[2]	[3]	[4]	[5]

	Definitely ***not required***				*Definitely* ***required***
u. Always completing my assigned work in a timely manner.	[1]	[2]	[3]	[4]	[5]
v. Making helpful work-related suggestion to my coworkers.	[1]	[2]	[3]	[4]	[5]
w. Doing extra work to help others.	[1]	[2]	[3]	[4]	[5]
x. Letting my supervisor know in advance if I have to miss a shift.	[1]	[2]	[3]	[4]	[5]
y. Coming to work early if needed.	[1]	[2]	[3]	[4]	[5]
z. Teaching new employees how to use work equipment.	[1]	[2]	[3]	[4]	[5]
aa. Volunteering to help others when they have a heavy workload.	[1]	[2]	[3]	[4]	[5]
bb. Making sure that new employees feel welcome.	[1]	[2]	[3]	[4]	[5]
cc. Going out of my way to help coworkers.	[1]	[2]	[3]	[4]	[5]
dd. Always being supportive of my coworkers.	[1]	[2]	[3]	[4]	[5]
ee. Volunteering to do things without being asked.	[1]	[2]	[3]	[4]	[5]
ff. Being polite and friendly to coworkers and patients.	[1]	[2]	[3]	[4]	[5]
gg. Helping patients if they need assistance.	[1]	[2]	[3]	[4]	[5]
hh. Arriving early so I am ready to work when my shift begins.	[1]	[2]	[3]	[4]	[5]
ii. Not coasting (slacking) when there is not much to do.	[1]	[2]	[3]	[4]	[5]
jj. Always doing the highest quality work possible.	[1]	[2]	[3]	[4]	[5]
kk. Following safety regulations when working.	[1]	[2]	[3]	[4]	[5]
ll. Not taking extra breaks, even during slow periods.	[1]	[2]	[3]	[4]	[5]
mm. Obeying rules and regulations, even if others do not do so.	[1]	[2]	[3]	[4]	[5]
nn. Not complaining about things at work that cannot be changed.	[1]	[2]	[3]	[4]	[5]
oo. Looking for more work to do, when finished with assigned work.	[1]	[2]	[3]	[4]	[5]
pp. Working late or without a break if there is a lot of work to do.	[1]	[2]	[3]	[4]	[5]
qq. Not talking to my coworkers about things that are not work-related.	[1]	[2]	[3]	[4]	[5]
rr. Never treating others at work with disrespect.	[1]	[2]	[3]	[4]	[5]
ss. Not criticizing my organization.	[1]	[2]	[3]	[4]	[5]

2 Now please think of the <u>actual work you do</u> at present. Below are several statements that people use to describe their jobs. For each statement please indicate if it describes <u>your job</u>.

		Strongly Disagree	*Disagree*	*Neither Agree nor Disagree*	*Agree*	*Strongly Agree*
a	I feel fairly satisfied with my job.	[1]	[2]	[3]	[4]	[5]
b	Most days I am enthusiastic about my work.	[1]	[2]	[3]	[4]	[5]
c	Each day at work seems like it would never end.	[1]	[2]	[3]	[4]	[5]
d	I find real enjoyment in my work.	[1]	[2]	[3]	[4]	[5]
e	I consider my job to be rather unpleasant.	[1]	[2]	[3]	[4]	[5]

3 Below are several statements that describe safety practices at a hospital.

For each statement please indicate if it describes your work unit.

		Strongly Disagree	*Disagree*	*Neither Agree nor Disagree*	*Agree*	*Strongly Agree*
a	Sharps containers are readily accessible in my work area.	[1]	[2]	[3]	[4]	[5]
b	Disposable gloves are readily available in my work area.	[1]	[2]	[3]	[4]	[5]
c	The protection of nurses from occupational exposure is a high priority with management on my unit.	[1]	[2]	[3]	[4]	[5]
d	On my unit, all reasonable steps are taken to minimize hazardous job tasks and procedures.	[1]	[2]	[3]	[4]	[5]
e	On my unit, nurses are encouraged to become involved in safety and health matters.	[1]	[2]	[3]	[4]	[5]
f	Managers on my unit do their part to ensure nurses' protection from occupational exposure.	[1]	[2]	[3]	[4]	[5]
g	On my unit, nurses' job duties do not often interfere with being able to follow Universal Precautions.	[1]	[2]	[3]	[4]	[5]
h	On my work unit, nurses have enough time to always follow Universal Precautions.	[1]	[2]	[3]	[4]	[5]
i	On my work unit, nurses usually have too much to do to always follow Universal Precautions.	[1]	[2]	[3]	[4]	[5]
j	On my work unit, unsafe work practices are corrected by supervisors.	[1]	[2]	[3]	[4]	[5]
k	My supervisor often discusses safe work practices with nurses.	[1]	[2]	[3]	[4]	[5]
l	On my work unit, nurses have had the opportunity to be properly trained to use personal protective equipment devices so that they can protect themselves from exposure.	[1]	[2]	[3]	[4]	[5]
m	On my work unit, nurses were taught to be aware of and to recognize potential health hazards at work.	[1]	[2]	[3]	[4]	[5]
n	On my unit, a copy of the hospital safety manual is available.	[1]	[2]	[3]	[4]	[5]
o	My work area is kept clean.	[1]	[2]	[3]	[4]	[5]
p	My work area is not cluttered.	[1]	[2]	[3]	[4]	[5]
q	My work area is crowded.	[1]	[2]	[3]	[4]	[5]

4 Below are 20 words that describe different feelings and emotions. Please indicate the extent to which each item describes <u>how you typically feel during work</u>. (Circle one)

		Not at all	*A little*	*Moderately*	*Quite a bit*	*Extremely*			*Not at all*	*A little*	*Moderately*	*Quite a bit*	*Extremely*
a.	Interested	[1]	[2]	[3]	[4]	[5]	**k.**	Guilty	[1]	[2]	[3]	[4]	[5]
b.	Irritable	[1]	[2]	[3]	[4]	[5]	**l.**	Determined	[1]	[2]	[3]	[4]	[5]
c.	Distressed	[1]	[2]	[3]	[4]	[5]	**m.**	Scared	[1]	[2]	[3]	[4]	[5]
d.	Alert	[1]	[2]	[3]	[4]	[5]	**n.**	Attentive	[1]	[2]	[3]	[4]	[5]
e.	Excited	[1]	[2]	[3]	[4]	[5]	**o.**	Hostile	[1]	[2]	[3]	[4]	[5]
f.	Ashamed	[1]	[2]	[3]	[4]	[5]	**p.**	Jittery	[1]	[2]	[3]	[4]	[5]
g.	Upset	[1]	[2]	[3]	[4]	[5]	**q.**	Enthusiastic	[1]	[2]	[3]	[4]	[5]
h.	Inspired	[1]	[2]	[3]	[4]	[5]	**r.**	Active	[1]	[2]	[3]	[4]	[5]
i.	Strong	[1]	[2]	[3]	[4]	[5]	**s.**	Proud	[1]	[2]	[3]	[4]	[5]
j.	Nervous	[1]	[2]	[3]	[4]	[5]	**t.**	Afraid	[1]	[2]	[3]	[4]	[5]

5 Below are several statements that people use to describe themselves. For each statement please indicate if it describes <u>you</u> in general. (Circle one)

		Strongly Disagree	*Disagree*	*Neither Agree nor Disagree*	*Agree*	*Strongly Agree*
a	I am interested in people	[1]	[2]	[3]	[4]	[5]
b	I sympathize with others' feelings	[1]	[2]	[3]	[4]	[5]
c	I have a soft heart	[1]	[2]	[3]	[4]	[5]
d	I take time out for others	[1]	[2]	[3]	[4]	[5]
e	I feel others' emotions	[1]	[2]	[3]	[4]	[5]
f	I make people feel at ease	[1]	[2]	[3]	[4]	[5]
g	I am not really interested in others	[1]	[2]	[3]	[4]	[5]
h	I insult people	[1]	[2]	[3]	[4]	[5]
i	I am not interested in other people's problems	[1]	[2]	[3]	[4]	[5]
j	I feel little concern for others	[1]	[2]	[3]	[4]	[5]
k	I am always prepared.	[1]	[2]	[3]	[4]	[5]
l	I pay attention to details	[1]	[2]	[3]	[4]	[5]
m	I get chores done right away	[1]	[2]	[3]	[4]	[5]
n	I like order	[1]	[2]	[3]	[4]	[5]
o	I follow a schedule	[1]	[2]	[3]	[4]	[5]
p	I am exacting in my work	[1]	[2]	[3]	[4]	[5]
q	I leave my belongings around	[1]	[2]	[3]	[4]	[5]
r	I make a mess of things	[1]	[2]	[3]	[4]	[5]
s	I often forget to put things back in their proper place	[1]	[2]	[3]	[4]	[5]
t	I neglect my duties	[1]	[2]	[3]	[4]	[5]

Please tell us a little about yourself

This information will be used to understand a little bit about you. All of this information will be treated confidentially

4. How old are you? (check one): 18-24 ☐ 25-34 ☐ 35-44 ☐ 45-54 ☐ 55 or older ☐

5. What is your gender? (check one): Female ☐ Male ☐

6. On what unit do you currently work? (check one):

***	☐	***	☐	***	☐
***	☐	***	☐	***	☐
***	☐	***	☐	***	☐
***	☐	***	☐	***	☐

Other _____

4. How long have you been working on this unit?_____years,_____months

5. What shift do you currently work? (check one):
Day ☐ Evening ☐ Night ☐ Rotate ☐

6. What is your current job title? _____

Briefly describe what you do:_____

_____

_____

7. Do you supervise others? (check one): Yes ☐ No ☐

You have now completed the survey. We greatly appreciate your help in conducting this important research. Your opinion about this study is important to us. If you have any comments, concerns, or suggestions, please share them with us in the space below.

_____

Please use the provided postage-paid, addressed envelope to mail your survey back to the researchers. Don't forget to include your raffle ticket!

THANK YOU!