

University of South Florida

Sunshine Education and Research Center



ERC Research Poster Session

October 5, 2007

5:00 – 7:00 pm

USF Health Rotunda

PROGRAM

Welcome to the Sunshine Education and Research Center Research Poster Session! On display you will find research conducted by our graduate students and faculty that span our five training programs in Occupational Medicine, Occupational Health Nursing, Industrial Hygiene, Occupational Safety, and Occupational Health Psychology.

The session is organized as follows:

5:00 – 6:00 Poster Interaction

From 5:00 to 5:30 researchers associated with odd numbered posters will be available to answer questions regarding their research while researchers with even numbered posters freely circulate and visit those posters. At 5:30 we will switch. Researchers associated with even numbered posters will be available to answer questions while the odd numbered poster researchers circulate.

Graduate students are eligible to win an iPod Nano. To be eligible, please refer to the instructions found on the last page of this booklet.

6:00 – 7:00 Social Hour

Thomas Bernard, ERC Director
Light refreshments and prize announcement

Posters will remain on display during the social hour.

1. Overview of the University of South Florida Sunshine Education and Research Center (ERC)

Ellen Kent, MPH
University of South Florida College of Public Health

The purpose of the University of South Florida Sunshine Education and Research Center (ERC) is to promote graduate training and research related to occupational health and safety. Occupational health and safety is an increasingly important field, in which professionals are responsible for protecting and enhancing the health, safety and well-being of working men and women of all ages, nationalities and ethnicities. The USF Sunshine ERC provides graduate level academic training programs in Occupational Medicine, Occupational Health Nursing, Industrial Hygiene, Occupational Safety and Occupational Health Psychology. In addition, the Sunshine ERC offers a wide variety of continuing education programs for practicing professionals. The ERC seeks talented and ambitious students who wish to make a positive difference by entering into an exciting and rewarding career in occupational health and safety.

2. Strain and Employee Outcomes: Work-based Regulatory Foci as Moderators

Chu-Hsiang (Daisy) Chang and Russell E. Johnson
Department of Environmental and Occupational Health and Department of Psychology
University of South Florida

We examined the effects of psychological strain on employee attitudes, including job and supervisor satisfaction, and behaviors, including organizational citizenship behavior toward individuals and organization as a whole. We explored employee work-based regulatory focus, including promotion and prevention focus, as a moderator of these strain-outcome relationships. As expected, strain had stronger, negative relationships with outcomes when employees' work-based promotion focus was low. On the other hand, contrary to the hypothesized effects, strain had stronger, negative relationships with outcomes when employee prevention focus was also low. These results indicated that both types of regulatory focus may help employee cope with strain in different ways. In addition, employees who are low on both promotion and prevention foci may respond most negatively to psychological strain.

3. Emotional Strain and Organizational Citizenship Behaviors: A Meta-Analytic Review

Chu-Hsiang (Daisy) Chang, Russell E. Johnson, Liu-Qin Yang and Shawn Thorpe
Department of Environmental and Occupational Health and Department of Psychology
University of South Florida

Employees experience various forms of strains at work, including mental and physical ones, which impede work performance. The purpose of this paper is to provide a qualitative and quantitative summary of the effects of emotional strain on organizational citizenship behavior (OCB). Emotional strain is important to consider because it has a broad impact on employee behaviors and is possibly more fundamental than other forms of strain. Meta-analytic results showed that emotional strain is significantly negatively related to OCB, a relationship that is explained via social exchange and resource allocation theories. Furthermore, we found evidence of moderation effects owing to the type of sample (full-time employees vs. employed students), organization (public vs. private), OCB rating source (self vs. others), and publication status (published vs. unpublished papers). We discuss the theoretical and practical implications of these findings and suggest directions for future research.

4. Heat Illness and Acute Injury Related to Heat Stress Level in an Aluminum Smelter

Thomas E. Bernard and Maxwell Fogleman

University of South Florida College of Public Health and Embry-Riddle University

The risk for heat disorders and acute injuries has not been related to the occupational exposure limits. The ORs for heat disorders were 25 and 158 for moderate and high heat stress. For acute injuries, the ORs were 1.4 and 1.7; and 1.8 and 2.4 for acute MSDs. The ORs for heat disorders, acute injuries and acute MSDs point to heat stress as being a significant factor relative to exposure limits.

5. The Utilization of Blunt Tip Suture Needles as a Preventive Measure against Percutaneous Injuries

Cheryl M. Phillips

University of South Florida Colleges of Nursing and Public Health

The goal of this research review is to educate healthcare workers on the possible risk of exposure to bloodborne pathogens by needle stick injury. The change in federal law that mandates safety devices be available to employees to prevent these injuries and the feasible cost savings to employers by reducing the amount of these injuries. Although several safety devices exist in the healthcare setting, the specific device reviewed is the blunt tip suture needle. In the research cited it was determined that the use of these particular needles did lead to a reduction in needle stick injuries. Therefore it is expected that illness would be reduced and savings increased.

6. Minimizing the Effects of Loss during the Hurricane Disaster Recovery Processes in Florida in 2004 and 2005

Shana Reni, Jim Cook and Pete Rentos

University of South Florida College of Public Health

The recent passage of several major hurricanes through Florida has resulted in an increase in hazardous recovery and cleanup operations. In turn, this increase has created the need for additional occupational safety and hazard awareness and abatement of unsafe work procedures. USF Safety Florida has responded to this need with their Consultation Emergency Response Plan. USF Safety Florida Consultants provided technical assistance through informational training and instruction regarding safe work practices, fact sheets describing the health and safety requirements of specific work procedures and recommendations for safe work practices. In most cases, consultation sessions with workers resulted in the lessening or abatement of existing occupational health and safety hazards. Lessons learned from two years of active hurricane seasons and emergency response consultation by USF Safety Florida will result in improved consultation efforts and efficiency during future emergency response recovery operations.

7. Ethyl Methacrylate and Methyl Methacrylate Exposure of Fingernail Sculptors

Adam J. Marty

University of South Florida College of Public Health

Fingernail sculptors may be exposed to ethyl methacrylate (EMA) and methyl methacrylate (MMA) in their workplace. The objectives of this study were to measure nail sculptors' exposure to EMA and MMA vapors in their personal breathing zone, describe the interior lay-out of the nail salon in relation to where the chemical vapors were generated, and quantify the volume of air supplied by the air handling unit. The 8-hour TWAs ranged from 8.2 – 31 parts per million (ppm) of EMA (mean 15.3 ppm) at one site and 5.2 ppm MMA (mean 5.2 ppm) at the other site. These levels were below any United States occupational exposure level in place or recommended. Local exhaust ventilation appeared to reduce the exposure, as did opening the windows and the door to allow for natural ventilation. The results of this study strongly suggested that MMA was used at one salon despite a ban on its use in nail products.

8. Prediction of Volitional Muscle Fatigue at Low Level Exertions

Margaret Wan and Thomas E. Bernard

University of South Florida College of Public Health

The conventional wisdom is that static exertions less than 15% of maximum voluntary contraction can be sustained for long periods. In fact, the contraction time for a design limit should not exceed 6 minutes at 15% of the MVC and 10 minutes at 5%. A significant gender effect was found where males voluntary hold time was less than females.

9. Racial Identity: Implications for Workplace Discrimination

Nicole E. Jaguszyn

University of South Florida Department of Psychology

The current study investigated the relationships among perceived workplace discrimination, racial identity, and coping strategies used by minority employees. Seventy-three employed, Black individuals took an online questionnaire. Results indicate that individuals with a stronger racial identity perceive more workplace discrimination, but avoid dysfunctional ways of dealing with this stressor.

10. Mentoring Relationships in China: Stress Less or Stressful?

Lui-Qin Yang, Xian, Xu, Tammy D. Allen, Kan Shi, Xichao Zhang, and Zhongyan Lou

University of South Florida Department of Psychology

Chinese Academy of Science and Beijing Normal University

We examined mentoring within a stressor-strain framework among 1883 employees from a large mobile company in Beijing, China. Surprisingly, the results showed that mentorship experience was associated with stronger relationships between stressors (career advancement stress, relational stress at work, work-family conflict) and strains. Possible underlying mechanisms were discussed.

11. Heat Stress Evaluation of Two Prototype Clothing Ensembles

Scott Dunn, Candi Ashley and Thomas Bernard
University of South Florida College of Public Health

A high heat stress protocol using three environments to simulate desert and jungle conditions was used to evaluate the role of heat stress on performance in a standard and two prototype military protective clothing ensembles. The two prototypes based on membrane technology did not meet or improve safe work time over the current ensemble.

12. Understanding Motives for Flexible Work Arrangement Utilization

Kristen M. Shockley and Tammy D. Allen
University of South Florida Department of Psychology

The purpose of the study was to examine employees' motives for using two types of flexible work arrangements, flextime and flexplace. Using a sample of academics, we compared gender, marital status, family responsibility, and tenure status to different work-related (e.g., productivity) and family management (e.g., childcare) motives.

13. Human Bites in the Classroom: Incidence, Treatment and Complications

Helen Acree
University of South Florida Colleges of Nursing and Public Health

The incidence of human bites in the classroom is not entirely known because of its underreported and undertreated status. Human bites are the third leading cause of bites seen in hospital emergency rooms. Human bites can be the source of exposure to body fluids, transmission of communicable disease, joint deformity from septic arthritis and wound infection. Promoting early reporting of the injury, administering early wound care, and supporting a proactive health care program that advocates adult hepatitis B immunizations leads to decreased complications.

14. Organizational Violence Climate and Exposure to Violence and Verbal Aggression

Paul E. Spector, Stacey R. Kessler, Chu-Hsiang Chang, and Alissa D. Parr
University of South Florida, Montclair State University, University of South Florida and
Eckerd College

A three dimensional construct of violence climate was assessed with the Violence Climate Survey. It was shown in a heterogeneous sample of 216 employees that violence climate significantly related to exposure to physical violence and verbal aggression, physical strains, and psychological strains including job dissatisfaction and negative emotion at work.

15. Reduced Glutathione Trafficking in Asthmatic Cells Correlates with High Oxidative Stress

Jörg Karolat, Krishna Harohalli, Nicole Solana and Stuart Brooks
University of South Florida College of Public Health

Asthma is a chronic disease in which the airways constrict and develop inflammation. The lung has a way of defending against oxidant stress through the presence of antioxidants. Our research indicates that human asthmatic cells respond differently to environmental insults (oxidant stress) and have a lesser capability of defending against injurious environmental exposures.

16. The Development & Validation of the Perceived Workplace Civility Climate Scale

Raymond C. Ottinot and Paul E. Spector
University of South Florida Department of Psychology

The concept of safety climate, which is defined as the practices, policies, and procedures of an organization that encourage safety within the organization (Zohar, 1980), was extended to develop and validate a measure titled Perceived Workplace Civility Climate (PWCC). PWCC is defined as the extent to which employees perceive that an organization promotes and maintains an environment that discourages workplace incivility and related behaviors, such as rudeness, nastiness, and gossiping.

17. The Effects of Aging on the Human Cough Reflex

D A. Sams, Thomas Truncala and Stuart Brooks
University of South Florida Colleges of Public Health and Medicine

This study was designed to examine if there was a difference in the cough reflex between younger and older persons. A difference might explain the greater susceptibility of older persons to respiratory tract infections and pneumonia. The study was the first granted approval by the Food and Drug Administration under an Investigational New Drug (IND) protocol for human capsaicin inhalation investigation. Results indicated that capsaicin challenge using pharmaceutical grade capsaicin is safe for normal subjects of all ages. Cough reflex sensitivity and underlying inflammation may be important factors in determining why older people are more susceptible to respiratory tract infections and pneumonia.

18. Workplace Stress: Tiger Underfoot

Sophia Debroux
University of South Florida Colleges of Nursing and Public Health

Nursing, noted to be one of the more stressful professions, illustrates an environment ripe for injury and accidents; occupational diseases; and gender bias regarding compensation laws. The purpose of this poster is to highlight chronic stress issues particular to the nursing profession, emphasizing the role of the health and safety industry, particularly that of the occupational health nurse.

19. Safety and Accuracy of Inhalation of Capsaicin Aerosols in a Normal Adult Population

D A. Sams, Thomas Truncale and Stuart Brooks
University of South Florida Colleges of Public Health and Medicine

A subject's death at Johns Hopkins, after inhalation of hexamethonium, led to the FDA discouraging further human research involving inhalation of non-approved medications/ drugs. This report describes the safety of inhalation studies using pharmaceutical grade capsaicin and looks at the results of high pressure liquid chromatography (HPLC) analysis of administered doses compared to their calculated concentrations. Study results indicated that there were no adverse reactions at any dose tested, including the highest capsaicin concentration of 1000 micromoles. Performance of capsaicin challenges can be considered safe for normal individuals when using pharmaceutical grade capsaicin and following strict safety procedures. HPLC documents accurate capsaicin concentration for inhalation studies. The actual administered doses are lower than calculated, and HPLC analysis improves accuracy reproducibility and insures the safety of subject volunteers.

20. Needlesticks: Identifying and Preventing Hazards

Kathleen Sullivan
University of South Florida Colleges of Nursing and Public Health

Needlesticks and sharps injuries account for continued risk for significant bloodborne infections to healthcare workers. Despite advances in technology to improve needle free systems and guards, there are still a great number of injuries taking place yearly. Many of the injuries take place even with some of those devices. Researchers continue to identify roles, working conditions, and habits that may lead to higher incidences of injuries. As occupational health professionals we are challenged to prevent, monitor, and assist with the possible treatment of sharps injuries, in order to create a healthful work environment for the individuals trying to care for the communities they serve.

21. The Development and Validation of the Workplace Health Climate Scale

Joe Mazzola and Paul E. Spector
University of South Florida Department of Psychology

This study sought to examine health climate, the factors within an organization that encourage and support employees interested in a healthy lifestyle. The final 15-item Work Health Climate Scale was quite reliable (.94) and was related to health benefits (.66), job satisfaction (.41), and intent to quit (-.40).

22. Workplace Violence in the Healthcare Setting

Mary Gallant Roman
University of South Florida Colleges of Nursing and Public Health

Nurses are precious resources in today's healthcare economy. Yet, they are at increased risk of experiencing workplace violence. Most incidents go unreported, so that the true magnitude of the problem is unknown. Nurses often feel that violence comes with the job and they have no recourse or support from administration. Research is needed to address the dynamics of this global problem.

23. Occupational Stressors and Health: A Meta-analysis of Physical Symptoms

Ashley E. Nixon
University of South Florida Department of Psychology

The link between individual occupational stressors and specific physical strains has not, for the most part, been the object of quantitative reviews. The purpose of this study was to investigate the relationship of commonly examined occupational stressors with physical symptoms through a meta-analysis. Occupational stressors identified and included were role conflict, work load, work-family conflict (WFC), role ambiguity, work hours, and abuse or bullying. Physical symptoms were defined as symptoms that could be measured via self-report, such as headache, nausea, illness, fatigue, emotional exhaustion, and physical exhaustion. These results indicate that the occupational stressors included in this analysis were significantly and positively related to self-reported physical symptoms. Individual relationships will be discussed.

24. The Effects of Tiotropium on the Cough Reflex

Thomas Truncala, Stuart Brooks and Joerg Karolat
University of South Florida College of Public Health

COPD is a disease state characterized by airflow limitation, which is not fully reversible. It is associated with an abnormal inflammatory response to noxious stimulus including tobacco smoke, environmental and occupational exposures. Cough productive of sputum is the cardinal feature of a subset of COPD patients defined as having chronic bronchitis. We will test the hypothesis that treatment with tiotropium (SPIRVA®) in subjects with COPD will lead to a reduction in sputum production and sensitivity of the cough reflex.

25. R2P: What Is It, and How Do We Accomplish It? Social Marketing – The Tool

Hana Osman and Carol Bryant
University of South Florida College of Public Health

NIOSH funded research focuses on developing products and transitioning from research results to actions in the workplace that promote prevention of injury and improvement of worker health and safety. Translating research results into practical applications is a new NIOSH initiative, commonly referred to as Research to Practice (r2p). With the focus on prevention of workplace injuries, worker behavioral changes are necessary to implement the research results. Social marketing techniques and skills are used by researchers to implement the results of their research into practice in the workplace to change workers' behaviors with the intent of ensuring a safe health environment to enhance workers' health.

Competition, in addition to the 4 Ps of social marketing: Product, Price, Place and Promotion represent this approach.

The Citrus Worker Health Project in Immokalee, FL exemplifies the use of social marketing skills in a community setting to achieve r2p.

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Graduate Student iPod Nano Giveaway!!!

To be eligible for the prize drawing, you must secure the signatures of at least 7 researchers who verify you have visited their poster and asked a question about their research. **This session represents the opportunity to learn what the other training areas are doing so all signatures should be from researchers outside your own training area.** Please write your name at the bottom of this sheet and drop this page in the designated box. Have fun!

Signatures:

1. _____

2. _____

3. _____

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Your Name: _____