

## 106: Research Podium

Three original clinical research papers will be presented. During individual presentations, the researchers will describe the purpose, methods, conclusions, and clinical application of the research. Moderator: *Kathleen Sawin, DNS, CPNP, FAAN*

- The Computerized Predictive Model of Distress for Medical Procedures in Children, *Kirsten Hanrahan, MA, ARNP, Ann Marie McCarthy, RN, PhD, FAAN, Charmaine Kleiber, RN, PhD, FAAN, and M. Bridget Zimmerman, MS, PhD*

- Emotional Response to the Ano-Genital Examination of Suspected Sexual Abuse, *Gail Hornor, RNC, MS, CPNP, Philip Scribano, DO, MSCE, Sherry Curran, MS, and Dale Rhonda, MAS*

- Help! I Feel Like I am Sinking Fast: PNP's Job Stress and Other Selected Factors Related to Their Role Enactment, *Mary Ann Best, PhD, RN, CPNP*

### **Learning objectives:**

- Describe the purpose for the presented research studies.
- Describe the methodology used in the presented research studies.
- Identify the conclusions of the presented studies and the clinical application of the research

## The Computerized Predictive Model of Distress for Medical Procedures in Children

**Purpose:** To identify clinically useful predictors of child response to a medical procedure when a parent provides distraction.

**Background/Significance:** Procedural pain is a major source of distress for children. There is growing evidence that children who experience inadequate pain control during medical procedures can suffer immediate and long term, negative sequelae. Teaching parents to help their child use distraction can decrease child distress.

**Questions:** What parent and child factors predict risk of child distress with medical procedures when parent distraction is provided? How can a predictive model be used to determine child risk for distress and match up interventions and resources?

Methods:

**Design:** Experimental design with randomized assignment to control or intervention groups. Parents in the intervention group received brief training for distraction coaching (7 minute video, educational material and discussion) and control parents received usual care.

Sample: Participants were 542 children, 4-10 years old, English speaking, and having a planned IV insertion

**Procedure:** After IRB approval and consent, children received a topical anesthetic cream. Parents and children answered study questions and intervention group parents received training. Parents were present in the treatment room to “help” their child while clinic staff inserted a peripheral IV. Measures included: parent performance of distraction (DCI), child behavioral distress (OSBD), child report of pain (ouch), parent report of child distress and biological distress (salivary cortisol responsivity). Procedures were videotaped.

**Data analysis:** Multiple and logistic regression models were used to identify the variables that explained parent performance of distraction and child responses. In order to develop predictive rather than explanatory models, we also used state-of-the-art data mining techniques that focus on predictive performance of the model on unseen data to develop the Computerized Predictive Model for Distraction (CPMD).

**Findings:** Items identified with data mining were also identified in traditional regression. The resulting CPMD 1) predicts child risk for distress in response to a painful procedure, 2) identifies appropriate interventions and 3) provides personalized educational material. The CPMD prototype at <http://www.nursing.uiowa.edu/CPMD/> will be demonstrated.

**Clinical Implications:** This is a crucial step toward clinically matching parents and children with the appropriate distraction interventions to minimize child distress.

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*Study supported by NINR. Study received IRB Approval from University of Iowa Health Care.*

## Emotional Response to the Ano-Genital Examination of Suspected Sexual Abuse

**Purpose:** To describe and compare children's anxiety immediately preceding and immediately following the medical assessment of suspected child sexual abuse including the ano-genital exam and to examine the degree and nature of parent-child and provider-child agreement of children's anxiety regarding the medical assessment.

**Background:** Child sexual abuse has been recognized as a problem of epidemic proportions that affects the lives of thousands of children in the United States. Performing an ano-genital examination has become an accepted standard of care for health care professionals completing a medical assessment for suspected sexual abuse. The goals of the ano-genital exam include: identification and documentation of trauma, diagnosis and treatment of sexually transmitted diseases, and when appropriate reassurance to the child and family that his/her body is normal and will heal regardless of what he/she may have experienced. Concerns have arisen among professionals working with children regarding potential emotional distress as a result of the ano-genital examination.

**Hypotheses 1:** Children experience increased anxiety immediately preceding the ano-genital examination for suspected sexual abuse; however, immediately following the ano-genital examination children feel relief with reduced anxiety and, for most patients, reassurance to understand that their bodies are normal and not damaged by the sexual abuse. 2. The child's report of anxiety related to the ano-genital exam does not correlate with parent perception of their anxiety. Provider observation of behavioral indices of anxiety does not demonstrate a linear relationship with the child's report of anxiety.

**Methods:** a prospective cohort of consecutive subject (ages 8-18 years) child/parent dyads were enrolled immediately following a forensic interview but prior to the medical examination. Subjects completed the Multidimensional Anxiety Scale for Children (MASC-10) prior to the examination in the exam room, and re-tested at the completion of the medical examination while in the play area/lobby. The MASC-10 assesses a range of anxiety symptoms from multiple domains: physical symptoms; harm avoidance; social anxiety; and separation anxiety. Children and parents completed the scales independently and parents were instructed to endorse responses they thought their child would report. Immediately following the medical exam the medical provider completed the Genital Examination Distress Scale (GEDS). The GEDS is a simple scale to quantify indices of emotional distress during the ano-genital exam of a child sexual abuse examination. Data analysis - paired t-tests were utilized to compare child MASC-10 scores pre- and post-exam; compare child and parent MASC-10 scores; and compare child MASC-10 score and provider GEDS score.

**Findings -** Only 17% of children reported moderate/severe anxiety preceding their exam. A reduction in anxiety was reported by subjects with a mean pre-MASC-10 score=55.0 vs. mean post- MASC-10 score 52.6 ( $p<.001$ ). Correlation coefficients for pre- MASC-10 scores of child/parent dyads was 0.3719 ( $p<.0001$ ) and post-MASC-10 scores of child/parent dyad was 0.4076 ( $p<.0001$ ). There was only fair correlation of child reported anxiety to medical provider observation using the GEDS for pre-exam(0.1194,  $p=.0166$ ) and post-exam (0.2241,  $p=.0069$ ).

**Clinical Implications:** Child anxiety decreased immediately following the ano-genital exam. The MASC-10 shows promise as an instrument to assess changes in anxiety as a result of the ano-genital examination in suspected sexual abuse. Parent report may be adequate in identifying child anxiety. The GEDS is not as strong in correlating with the child's self-report of anxiety.

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*Study received IRB Approval from Columbus Children's Hospital.*

## **Help! I Feel Like I Am Sinking Fast: PNPs, Job Stress, and Other Selected Factors Related to Their Role Enactment**

**Purpose:** To investigate selected aspects of the work role of pediatric nurse practitioners. The theoretical foundation for the study is role theory and self-efficacy theory.

**Significance:** PNPs are expanding their practice to deliver primary as well as specialty care in a health care environment increasingly influenced by shrinking health care dollars. However, little is currently known about the experience of PNPs in terms of job stress, work environment, their self care/health practices, self esteem in the work role, and their self-efficacy related to practice in this changing health care arena.

**Method:** A convenience sample of 56 PNPs attending a conference in a metropolitan city in the Southwestern US participated in a pilot study (following IRB approval of the study) and completed an anonymous survey which included scales to measure their job stress, perceived support in their work environment, self esteem in their work role, general stress management activities, and their self efficacy for practice as a PNP. The average survey participant was 47 years of age, practiced in an office setting (other types of practice sites such as hospital based clinics, community/public health clinics, school based health centers, and emergency/acute care were also represented in the sample), had been an APN for 11 years and employed in their present position for 6 years. Analysis of the data revealed that job stress was negatively and significantly related to perceived support in their work environment ( $r=-.50$ ), self esteem in their work role ( $r=-.41$ ), general stress management activities ( $r=-.50$ ), and their perceived self-efficacy for practice as a PNP (which included management of overweight children) ( $r=-.34$ ).

**Practice Implications:** Replication of the study with a larger sample of PNPs is needed to determine if the experience of PNPs reported in this study represents common practice phenomena among PNPs in general. However, the findings suggest potential implications for interventions in the areas of health policy, health promotion, and role enactment for both practicing PNPs and PNP students.

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*Study received IRB approval from University of Texas Medical Branch.*