



Plenary Session 1 (Abstracts 2 - 4 and 8)

Sunday, September 9, 2012 from 9:15 am - 10:15 am
Regency Ballroom C/D

Abstract 2

Ostracism is Worse than Bullying in Children and Youth with Special Health Care Needs

Kaitlin E. Twomey, BS, Psychology, The Citadel, Charleston, SC, Margaret E. McKenna, MD, Michelle M. Macias, MD, Pediatrics, Medical University of South Carolina, Charleston, SC, Conway F. Saylor, PhD, Psychology, The Citadel, Charleston, SC

Purpose: This study investigated whether bullying or ostracism has a greater impact on the population of children and youth with special health care needs (CYSHCN). **Methods:** One hundred and nine children aged 8-17 were recruited during routine visits in Developmental Pediatrics, Endocrine, Sickle Cell, Cystic Fibrosis, and Heart Health clinics. Children and parents were interviewed regarding bullying and ostracism experiences using Saylor's Bullying and Ostracism Screening Scale (BOSS). Williams' temporal need threat model of ostracism highlights four fundamental psychological needs including sense of belonging, meaningful existence, self-esteem, and a sense of control. The BOSS measures and quantifies both bullying and ostracism experiences. Child-reported depressive/internalizing symptoms were assessed using Kovac's Child Depression Inventory-Short Version, (CDI-SV) and the Achenbach Youth Self Report (YSR). Parent-reported internalizing symptoms were assessed using the Achenbach Child Behavior Checklist (CBCL). **Results:** Analysis of Variance with Duncan Post Hoc Tests found those children reporting experiences of ostracism alone or in combination with bullying had significantly higher reported depressive symptoms [$F(3, 100) = 15.83, p < .001$], higher parent-report of internalizing conditions [$F(3, 100) = 7.27, p < .001$], and higher self-report of internalizing conditions [$F(3, 41) = 6.00, p < .01$], than those students reporting bullying experiences alone or those reporting no exposure to bullying or ostracism. Children reporting experiences of ostracism had a higher threat to their sense of belonging [$F(3, 100) = 43.62, p < .01$], and a meaningful existence [$F(3, 99) = 20.60, p < .01$]. **Conclusion:** Overall, these findings suggest ostracism can have a worse effect than bullying on CYSHCN. These children should be screened for both ostracism and bullying during a pediatric visit.

Abstract 3

Functional Communication Abilities in Children who are Deaf/Hard of Hearing

Jareen Meizen-Derr, PhD, Biostatistics and Epidemiology, Susan Wiley, MD, Sandra Grether, PhD, Jannel Phillips, Developmental and Behavioral Pediatrics, Cincinnati Children's Hospital Medical Center, Cincinnati, OH

Purpose: To assess how language levels, independent of cognitive abilities, impact independent functional skills in young children who are deaf/hard of hearing (hoh). **Methods:** Children with mild-

profound bilateral hearing loss, age 3-6 years are being enrolled in a study of language and functional outcomes. All subjects receive: Preschool Language Scales -5; neurocognitive assessment using Leiter International Performance Scale-R, Differential Abilities Scale, Behavioral Rating Inventory of Executive Function. Functional skill performance is measured using the Pediatric Evaluation of Disability Inventory (PEDI) [mean 50+10] which measures daily functional activities in Self-Care, Mobility, and Social Function; and Vineland Adaptive Behavior Scales (VABS) [mean 100+15]. **Results:** The mean (SD) nonverbal IQ for 30 children with hearing loss was 95.5 (19). The mean (SD) receptive and expressive language score was 83 (19). On average, receptive language levels were significantly ($p=0.0003$) lower than what was expected according to nonverbal cognitive abilities (12 point discrepancy). Children had the lowest mean scores on the PEDI Social Function domain (42+13) compared to Self-Care (48+12) and Mobility (52+9). On average children scored significantly lower than population mean in PEDI Social Functioning ($p=.0006$) and VABS Communication and Social Functioning ($p<0.01$). Communication functioning was significantly ($p<.0001$) correlated with nonverbal cognition ($r=0.54$), receptive language ($r=0.74$), and executive function measures working memory ($r = -0.41$) and inhibition ($r=-0.4$). Better working memory was associated with better functioning. In multiple linear regression, nonverbal cognition, receptive language, and working memory accounted for ~60% of the variance in communication functioning ($R^2=0.61$), with language accounting for the majority of variance ($R^2=0.55$). Hearing loss degree was not associated with functioning. **Conclusion:** The terms "functional performance" or "functional skills" have been commonly used to describe functional hearing abilities in children with hearing loss. Our data speak to the need for greater understanding of patterns of functional performance strengths and weaknesses in this population to facilitate interventions targeting individual needs and factors that promote readiness for school and life.

Abstract 4

Fatigue in Children with Sickle Cell Disease: Impact on Quality of Life

Lindsay M. Anderson, MA, Taryn M. Allen, MA, Lucy Andrzejewski, BA, Courtney D. Thornburg, MD, Pediatrics-Hematology/Oncology, Melanie J. Bonner, PhD, Psychiatry/Medical Psychology, Duke University Medical Center, Durham, NC

Purpose: Research often cites the presence of fatigue in children with sickle cell disease (SCD). Indeed, many studies indicate that these children report fatigue nearly as often as pain. Despite this, minimal research has examined levels of fatigue in children with SCD or attempted to identify how fatigue impacts functional outcomes in this population. Further, quality of life is understudied in this group, which is vulnerable to both medical and psychosocial difficulties. In light of this, the current study aimed to describe the nature and prevalence of fatigue in a group of children with SCD, and investigate the relationship between fatigue and quality of life. **Methods:** Children aged 8-16 ($n=30$) and a caregiver were recruited during regularly scheduled clinic visits. Participants were asked to complete questionnaires assessing the child's level of pain, quality of life, and fatigue. Measures included the Wong-Baker Faces Pain Scale, Pediatric Quality of Life Inventory (PedsQL), and Multidimensional Fatigue Scale. **Results:** Children and their caregivers reported elevated levels of fatigue ($M=71.3$ and $M=66.1$, respectively), which is consistent with levels reported in other pediatric populations (e.g., pediatric cancer and rheumatology patients; children with cerebral palsy). Moreover, after controlling for pain, age, and sex of the child, fatigue significantly predicted child- and parent-reports of quality of life. Specifically, increased levels of fatigue were associated with a decrease in child-reported quality of life (adj. $R^2=0.79$; $p<0.05$) as well as parent-reported quality of life (adj. $R^2=0.47$; $p<0.05$). **Conclusion:** These data indicate that children with SCD have clinically-relevant levels of fatigue. Further, both parent- and child-reported fatigue predicted decrements in the quality of life for children with SCD. Given its potential impact on quality of life, it may be important for clinicians to assess fatigue during clinic visits and discuss strategies to reduce this symptom. This

practice may help attenuate the burden of fatigue in these patients, and in turn, help improve the quality of life of children living with SCD.

Abstract 8

Childhood ADHD and Risk for Adverse Socioeconomic Outcomes in Adulthood: A Prospective, Population-Based Study

William J. Barbaresi, MD, Medicine, Children's Hospital Boston, Boston, MA, Robert C. Colligan, PhD, Psychiatry and Psychology, Jill M. Killian, BS, Amy L. Weaver, MS, Health Sciences Research, Mayo Clinic, Rochester, MN, Robert G. Voigt, MD, Pediatrics, Baylor College of Medicine, Houston, Texas, Slavica K. Katusic, MD, Health Sciences Research, Mayo Clinic, Rochester, MN

Purpose: Previous research on the association between childhood ADHD and socioeconomic outcomes in adulthood is limited by the use of small, biased samples. There have been no previous longitudinal, population-based studies of these outcomes. The objective of this study is to describe the association of childhood ADHD with long-term outcomes (education, employment, income, relationships, trouble with the law) in a population-based cohort of childhood ADHD cases and controls followed through young adulthood. **Methods:** Subjects from a 1976-1982 birth cohort (N=5699), including those with research-identified childhood ADHD (N=379) and controls, were invited to participate as young adults in a prospective outcome study that included a questionnaire with items related to socioeconomic outcomes. Participating subjects included childhood ADHD cases (N=232; mean age 26.9 years; 167 males, 65 females) and controls (N=335; mean age 28.6 years; 210 males, 125 females) from the same birth cohort. Outcomes were compared between childhood ADHD cases and controls using logistic and linear regression models, adjusted for age and sex. **Results:** See Table Conclusion: This is the first prospective, population-based study of the associations between childhood ADHD and a broad array of socioeconomic outcomes in adulthood. These findings demonstrate that children with ADHD are at risk for a poorer transition to adulthood. Our results serve as benchmarks for future research to develop treatments aimed at improving these outcomes.

| Outcome | Childhood ADHD Case (N=232) | Childhood ADHD Case (N=232) | P-Value |
|------------------------------|-----------------------------|-----------------------------|---------|
| >12 years of education, N(%) | 140 (60.3) | 282 (84.2) | <0.01 |
| Currently unemployed, N (%) | 23 (9.9) | 17 (5.1) | 0.09 |
| Ever fired, N (%) | 118 (50.9) | 71 (21.2) | <0.01 |
| Median yearly income | \$20,000 | \$30,000 | <0.01 |
| Ever married, N (%) | 62 (26.7) | 153 (45.7) | <0.01 |
| Currently living together, | 53 (22.8) | 48 (14.3) | 0.01 |

| | | | |
|-----------------------------|-----------|------------|-------|
| Trouble with the law: N (%) | | | <0.01 |
| Unknown | 2 | 0 | |
| Never | 85 (37.0) | 204 (60.9) | |
| Only under age 17y | 35 (15.2) | 27 (8.1) | |
| Only over age 18y | 40 (17.4) | 55 (16.4) | |
| As minor and adult | 70 (30.4) | 49 (14.6) | |

Plenary Session 2 (Abstracts 5 - 7 and 9)

Monday, September 10, 2012 from 9:00 am - 10:15 am

Regency Ballroom C/D

Abstract 5

Mediators of Methylphenidate Effects on Math Performance

Heather R. Matheson, BA, Developmental and Behavioral Pediatrics, Jeff N. Epstein, PhD, Bill B. Brinkman, MD, Behavioral Medicine and Clinical Psychology, Bridget K. Fredstrom, MA, Ryan E. Adams, PhD, Tanya E. Froehlich, MD, Developmental and Behavioral Pediatrics, Cincinnati Children's Hospital Medical Center, Cincinnati, OH

Purpose: Little is known about the mechanism by which methylphenidate (MPH) exerts effects on academic performance. We examined MPH effects on math performance and tested changes in time on task, inhibitory control, sustained and selective attention, and working memory as possible mediators of MPH response. **Methods:** Children with ADHD ages 7-11 years (n=92) without evidence of cognitive or learning disorders (IQ and academic achievement standard scores >80) completed a timed math problems worksheet and five neuropsychological tasks (Go/No-Go, Stop Signal, Choice Discrimination, Child Attentional Network tasks) at baseline, then underwent a within subject, randomized, placebo-controlled MPH trial to identify an optimal dosage. Children were then randomly assigned to their optimal MPH dose or placebo, and again did the math and neuropsychological tasks [post-test]. Math task video recordings at baseline and post-test were coded by study personnel to assess visual attention across the task (time on task). Change in number of math problems completed (productivity) and % correct (accuracy) from baseline to post-test were compared for those randomized to MPH vs placebo using linear mixed models. Preliminary correlations (Pearson's r) and t-tests were used to select candidate mediators for examination in path analyses. **Results:** Those randomized to MPH completed a mean of 23 more math problems while the placebo group completed a mean of 24 fewer problems on post-test vs baseline (difference between groups p=0.001), but the groups did not differ in effects on math accuracy. Among potential mediators, only change in time on task and change in inhibitory control were associated with both assignment to MPH and change in math productivity (p<0.05). Path analyses found that change in time on task was a significant mediator of MPH's improvements in math productivity (indirect effects standardized beta=0.16, p=0.006), while change in inhibitory control was not. **Conclusion:** Our study suggests that improvement in math productivity with MPH may be explained

by increased time spent on task, rather than improvement in working memory or other aspects of executive functioning.

Abstract 6

The Costs and Benefits of Targeted Screening for Causes of Sudden Cardiac Death in Children with ADHD

Laurel K. Leslie, MD, Medicine/Pediatrics, Joshua T. Cohen, PhD, Center for Evaluation of Value and Risk in Health, Tufts Medical Center, Boston, MA, Jane W. Newburger, MD, Department of Cardiology, Mark E. Alexander, MD, Cardiology, Children's Hospital Boston, Boston, MA, John B. Wong, MD, Institute for Clinical Research and Health Policy St, Tufts Medical Center, Boston, MA, Elizabeth D. Sherwin, MD, Cardiology, Children's Hospital Boston, Boston, MA, Angie Mae Rodday, MS, Susan K. Parsons, MD, Institute for Clinical Research and Health Policy, Tufts Medical Center, Boston, MA, John K. Triedman, MD, Cardiology, Children's Hospital Boston, Boston, MA

Purpose: Sudden cardiac death (SCD) in children is a rare but devastating event. Experts have debated the merits of community-based screening programs utilizing an electrocardiogram (ECG) and targeting a potential high-risk group: school-aged children initiating stimulant medications to treat attention deficit hyperactivity disorder (ADHD). **Methods:** Simulation models incorporating detailed prevalence, sensitivity and specificity, and treatment algorithms were built to determine the cost-effectiveness of targeted SCD screening. Clinical care algorithms were constructed for asymptomatic children initiating stimulants for ADHD (age 8) and presenting with a positive ECG finding suggestive of one of the three most common pediatric disorders causing SCD and identifiable by ECG. Information to develop simulation model assumptions was drawn from the existing literature, Medicaid fees, and expert judgment. Sensitivity analyses examined parameter ranges to identify influential sources of uncertainty. Outcomes included costs and lost life years (LYs) caused by condition-related mortality. **Results:** Our models estimate that screening for all three conditions simultaneously would reduce sudden death risk by 3.6 to 7.5 x 10⁻⁵ with projected life expectancy increases of 19 to 38 hours per screened individual. The incremental cost-effectiveness of screening is approximately \$200,000 per LY. Sensitivity analysis showed that assumed disease prevalence, baseline mortality, and the relative risk of mortality due to stimulant medication use had the greatest impact on estimated cost-effectiveness. **Conclusion:** Results based on assumptions favoring SCD screening indicated its cost is high relative to its health benefits for children with ADHD initiating stimulant treatment.

Abstract 7

Do the Conditions of Administration Affect the Reproducibility of Developmental Screening

Marianne San Antonio, DO, A Fenick, Pediatrics, V Northrup, Yale Center For Clinical Investigation, J Leventhal, C Weitzman, Pediatrics/CSC, Yale, New Haven, CT

Purpose: Developmental screening is often done under non-standardized conditions in pediatric waiting rooms where screens may not have been designed for use, we, therefore, aimed to compare the reproducibility of the Ages & Stages Questionnaire (ASQ-3), when administered under standardized vs. non-standardized conditions in an economically disadvantaged population. **Methods:** Parents of English- or Spanish-speaking 18- and 30-month-old children at the Yale Primary Care Center were eligible if they had no developmental delay or were not receiving intervention services. Children were screened with the ASQ-3 in the waiting room prior to their well-child visit. Parents were randomized to repeat the ASQ-3 in waiting room (W-W) or standardized (W-S) conditions (private space, testing materials, 30

minutes to complete the screening, and a facilitator). Fail rates for the ASQ were calculated. Intraclass Correlation Coefficient (ICC), a measure of reliability, was calculated for each of the 5 domains of the ASQ. An ICC >0.4 is acceptable reliability, and ICC>0.8 excellent reliability. For each domain, the ICCs between W-W and W-S were compared. We hypothesized that the ICCs in the W-W would be higher than the W-S arm. **Results:** 131 parents were randomized, 66 W-W and 65 W-S. Parents were mostly minority (95%), and unemployed (56%). 25.8% of children failed the initial waiting room screen. There was no difference in fail rates between study arms on the 1st screen (31% vs. 21% p=0.2) or on the 2nd screen (24% vs. 20% p=0.6). There was also no difference in fail rates between the 1st and 2nd screen in the W-W arm (31% vs. 24% p=0.2) or in the W- S arm (21% vs. 20% p=1). The ICC ranges for W-W were 0.66-0.95 and W-S were 0.73-0.92. There was no significant difference between ICCs in the W-W vs. W-S groups in any domain. **Conclusion:** A significant number of children failed the first ASQ. There was no significant difference in the reliability between W-W and W-S conditions in an economically disadvantaged population. These results suggest that screening children for developmental delay in the waiting room with the ASQ-3 may be an adequate way to screen children.

Abstract 9

Child Social Skills and Parenting Stress in Mothers of Children with Autism Spectrum Disorders, 2007 National Survey of Children's Health

Cristina E. Farrell, MD, Pediatrics, Mt. Sinai School of Medicine, New York, NY, Ellen J. Silver, PhD, Ruth E. Stein, MD, Pediatrics, Albert Einstein College of Medicine, Bronx, NY

Purpose: Parents of children with autism spectrum disorders (ASD) report more parenting stress (PS) than parents of children with typical development. ASD is characterized by social impairment. Poor child social skills (CSS) could increase PS by decreasing parents' emotional rewards and increasing social isolation. Few studies have investigated this connection. We hypothesize that: 1) mean maternally-reported CSS is lower and PS higher in ASD compared to controls; 2) an inverse correlation exists between CSS and PS in both groups and is stronger in ASD. **Methods:** Analysis was conducted using the 2007 National Survey of Children's Health. CSS and PS scales were created. Higher scores reflect better CSS and more PS. Mean maternally-reported CSS and PS scores and the correlations between them were compared between ASD and control groups (age 6-17). Control children had no chronic health conditions. The ASD group included all eligible children with ASD. Means were compared using T-tests. Fisher's r to z transformation was used to compare correlation coefficients. Analysis was conducted in STATA to adjust for complex sampling design. **Results:** Compared to controls (n= 30,920), children with ASD (n=560) were more likely male and publicly insured with older, foreign-born mothers that lacked emotional support. They were less likely to have 2-parent families, excellent/very good maternal mental health or medical homes. CSS was 14.15 in ASD (95% CI 13.48-14.84) vs 17.41 in controls (95% CI 17.35-17.48). PS was 8.63 in ASD (95% CI 8.05-9.20) vs 5.79 in controls (95% CI 5.73-5.85). After adjusting for potential confounders, the correlations between CSS and PS differed significantly between the two groups: -0.37 (p<0.01) in controls and -0.28 (p=0.02) in ASD. On multivariable analysis, poor maternal mental health and non-English primary maternal language predicted PS while CSS and medical home were protective in both groups. **Conclusion:** As suspected, CSS and PS were inversely correlated in both groups. Contrary to our hypothesis, the correlation was stronger in controls. This may be due to lower CSS expectations among parents of children with ASD. The finding that medical home protected against and maternal mental health predicted PS is notable as children with ASD were less likely to have medical homes and more likely to have mothers reporting poor mental health.



Poster Symposium I (Abstracts 10-13)

Monday, September 10, 2012 from 1:00 pm - 2:15 pm

Diversity Challenges in DBPeds

Abstract 10

Racism in Minority Youth: The Relationship Between Emotional and Coping Responses and Behavioral Health

Lee M. Pachter, DO, Bruce A. Bernstein, PhD, Pediatrics, Drexel University College of Medicine, Philadelphia, PA, Laura Szalacha, EdD, Nursing, The Ohio State University, Columbus, OH, Cynthia Garcia Coll, PhD, Education, Brown University, Providence, RI

Purpose: Racism is a psychosocial stressor that may contribute to poor behavioral health in minority youth. This study investigates whether different emotional and coping response styles in reaction to perceived racism are associated with symptoms of depression and anxiety. **Methods:** 277 minority youth ages 7-18 completed the 10 item Perceptions of Racism in Children and Youth (PRaCY) instrument, the Child Depression Inventory (CDI), and the Revised Childhood Manifest Anxiety Scale (RCMAS). The PRaCY includes information on occurrences of perceived racism, as well as emotional responses (internalizing and externalizing) and coping responses (problem focused, emotion focused, appraisal focused) to those events. **Results:** The 277 youth included 38% African America/West Indian/Caribbean, 38% Latino/a, 19% Bicultural/Biracial, and 5% other. 86.6% of the youth had perceived at least 1 occurrence of racism in their life (mean positive response 3.8 out of 10 items; SD 2.8). There were significant relationships between emotional response style in reaction to racism and scores on both the CDI and RCMAS in younger youth (7-13 years), and with CDI in older youth (14-18 years). Emotion focused coping style was significantly positively correlated with CDI and RCMAS in younger children and with RCMAS in older children; appraisal focus negatively correlated with RCMAS in younger children. **Conclusion:** Racism is a toxic psychosocial stressor that is commonly experienced by minority youth. The behavioral health effects of racism may be moderated by both emotional and coping response styles in reaction to these events. Interventions aimed at training youth in positive coping styles may help mitigate the effects of this stressor on behavioral and mental, and possibly physical health.

Abstract 11

Disparities in Identification of Co-Morbid Diagnoses and Prescribing Practice in School Aged Children with ADHD: Comprehensive vs Limited Evaluations

Tanjala P. Gipson, MD, Neurology and Developmental Medicine, Kennedy Krieger Institute, Baltimore, MD, Eboni I. Lance, MD, Neurology and Developmental Medicine, Kennedy Krieger Institute, Baltimore, MD, Rebecca A. Albury, MSN, Mary L. Leppert, MB, BCh, Neurology and Developmental Medicine, Kennedy Krieger Institute, Baltimore, MD

Purpose: Attention Deficit Hyperactivity Disorder (ADHD) has several associated co-occurring conditions that affect diagnoses and treatment. Two groups, determined by insurance coverage, were reviewed to explore disparities in prescribing practices and in the frequency of identification of co-occurring diagnoses. Insurance for one group allows for a thorough neuro-developmental evaluation, insurance for the second group allows for the assessment and medical management of behavioral disorders only. **Methods:** This study was a retrospective chart review of five to ten year-old children in whom ADHD was diagnosed at the initial evaluation. Data collected included demographics, rates of co-morbid conditions, medication management, and educational interventions. **Results:** The two groups were similar in age, gender, grade placement, educational supports, maternal age range, and medication management. The group with insurance permitting comprehensive evaluations was more likely to be Caucasian, have higher maternal education levels, and have more educationally impacting co-morbid conditions identified than the group receiving behavior focused assessments. **Conclusion:** School age children with ADHD are likely to receive similar educational support services and medication management despite differences in the initial assessments. However, our data suggests that children who received comprehensive neuro-developmental evaluations had greater identification of co-morbid conditions that may influence their academic, behavioral, and social outcomes. In addition, children receiving behavior focused assessments may have a higher occurrence of confounding variables that may contribute to education or behavior difficulties.

Population Disparities

| | Comprehensive | Behavior Focused |
|---------------|---------------|------------------|
| Total | 283 | 103 |
| % male | 77 | 63 |
| % Caucasian | 53 | 16 |
| % Mat Ed > HS | 62 | 23 |
| % comorbid dx | 40 | 28 |

Abstract 12

Does Multiple Language Exposure Influence Executive Function Skills in Preschool Children?

Irene M. Loe, MD, Nidia Alduncin, MD, Maya Chatav, BA, Walter S. Chang, BA, Lynne C. Huffman, MD, Heidi M. Feldman, MD, PhD, Pediatrics, Stanford University School of Medicine, Palo Alto, CA

Purpose: Executive function (EF) encompasses cognitive processes used for planning, organizing, and goal achievement. Though former studies found language disadvantages of multi-language exposure, recent studies report bilingualism was associated with stronger EF skills; the advantage has been attributed to ongoing practice of EF skills required to manage two or more languages. However, they have not carefully controlled for socioeconomic status (SES). We evaluated objective and parent-rated EF skills in preschoolers with monolingual compared to bi-/multi-lingual exposure matched for SES. **Methods:** Children with monolingual (n=45) and bi-/multi-lingual (n=33) exposure (defined as 10 or more hours of non-primary language exposure/week; mean 25), age 3-5 years (mean 4.4), were matched for

age, gender, SES, race/ethnicity, and IQ. Parents completed (1) language questionnaire and diary and (2) Behavior Rating Inventory of EF (BRIEF-P), a standardized questionnaire of EF skills in everyday environments. Children completed an EF battery that assessed working memory (6-boxes task), response inhibition with suppression of competing information (day/night), complex response inhibition and working memory (bird/dragon), cognitive flexibility (card sort), and verbal fluency (word generation). Mann-Whitney, logistic regression, or ANOVA examined effects of group and age. Spearman correlations examined associations between language exposure and EF performance. **Results:** We found no differences between groups for any lab-based EF measures and no differences for any parent-rated EF scales on the BRIEF (all $p > .05$). Age was significant indicating developmental improvement with age for most tasks. There were no significant associations between amount of language exposure and EF skills. **Conclusion:** In this group of preschoolers, multiple language exposure was not detrimental to EF skills. Study strengths include matched IQ and SES between groups, factors known to influence EF that are not reliably controlled in other studies. Limitations are a small sample size and assessment of language exposure rather than language competence. Ongoing work includes children with preterm birth to assess interaction of biologic risk with bilingualism on EF. Future work will include assessment of language competence.

Abstract 13

Racial Disparities in Sub-specialty Service Use by Children with Autism

Sarabeth Broder-Fingert, MD, Pediatrics, Massachusetts General Hospital for Children, Boston, MA, Amy Shui, MA, James Perrin, MD, Pediatrics, Massachusetts General Hospital for Children, Boston, MA

Purpose: Several studies have documented racial differences in access to diagnostic services for children with Autism Spectrum Disorder (ASD). To date, no studies have explored racial disparity in access to specialty care for these patients. **Objective:** To describe racial differences in use of specialty care among children with ASD. **Methods:** We identified patients ages 2-21 years with an ICD-9 code of autism (299.0) seen from 2001 to 2011 at a major academic health center using a research patient data repository and determined rates of specialty provider visits and procedures by race. **Results:** 3,615 patients were identified (2935 white, 243 Hispanic, 188 black, and 249 other). Non-white children were less likely to access the following subspecialty services: GI/Nutrition (black 0.36 [0.21-0.63]; Hispanic 0.36 [0.23-0.57]; other 0.59 [0.35-0.99]), Psychiatry/Psychology (black 0.60 [0.38-0.97]; Hispanic 0.53 [0.36-0.78]), Neurology (Hispanic 0.54 [0.34-0.84]), and Allergy/Immunology (Hispanic 0.38 [0.15-0.97]). Non-White children were less likely to have had allergy testing (black 0.27 [0.11-0.69]; Hispanic 0.54 [0.31-0.94]), a colonoscopy (black 0.19 [0.08-0.44]; Hispanic 0.22 [0.11-0.41]), EEG (black 0.53 [0.33-0.84]; Hispanic 0.41 [0.28-0.62]), endoscopy (black 0.26 [0.13-0.49]; Hispanic 0.23 [0.13-0.40]; other 0.47 [0.27-0.82]), Brain MRI (black 0.30 [0.17-0.51]; Hispanic 0.48 [0.33-0.70]), Neuropsychiatric Testing (Hispanic 0.40 [0.23-0.71]), Psychiatric Evaluation (black 0.56 [0.33-0.97]), Sleep Study (black 0.12 [0.02-0.88]; Hispanic 0.14 [0.03-0.58]), or Stool Studies (black 0.40 [0.22-0.76]). **Conclusion:** We found disparities among children diagnosed with autism in use of care and procedures. Possible explanations for these findings include differences in referral rates or referral follow through.

Poster Symposium II (Abstracts 14-17)

Monday, September 10, 2012 from 1:00 pm - 2:15 pm

DBPed Potluck

Abstract 14

Research Experience and Efforts by Developmental-Behavioral Pediatrics Fellows: A Survey of Fellowship Directors by DBPNet

David J. Schonfeld, MD, Susan Wiley, MD, Division of Developmental and Behavioral Pediatrics, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, Lynne Huffman, MD, The Children's Council, Stanford University, Palo Alto, CA

Purpose: To describe research training DBP Fellowship Programs. **Methods:** Accredited DBP fellowships were contacted through the Developmental Behavioral Pediatrics Research Network (DBPNet) to complete an on-line survey on scholarly work and research training content and structure. Follow-up emails were used to encourage participation and clarify responses. **Results:** 29 of 35 (83%) directors completed surveys. The programs represented 110 (87 filled) fellowship positions. External funding for fellowship positions was minimal (11 positions fully funded, 13 >50% of cost). Structured research training included didactic lectures, web-based training, university courses, direct mentoring, journal club, and required reading. Of 166 fellows participating in the prior 5 years, 55% completed projects relying on their own data collection, or secondary data analysis; 23% received direct research mentoring outside a DBP division. The majority of fellow projects addressed clinical research with 1-2% of fellows pursuing basic science, meta-analysis/critical appraisal of literature or public policy. Of 96 completed projects, 29% were observational/epidemiological, 22% secondary analyses of datasets, 16% community-based research, and 15% survey design. A minority of projects were randomized controlled trials and basic science. There were 106 funding attempts by fellows (64% success rate). Funding sources were internal (85% divisional or other institutional funds) and external (15%, SDBP, APA Young Investigator, or foundation grants). Identified barriers to successful fellow research included: lack of time and money, challenges in balancing clinical demands and protected research time, limited faculty opportunities, time or expertise, and a lack of infrastructure for fellow research mentoring. **Conclusion:** The scholarly work of fellows in DBP fellowship programs has primarily focused on observational/epidemiological research, secondary analysis, community-based research, and survey design. Barriers continue to exist, largely in faculty time and expertise for research mentoring as well as inadequate funding in programs that have high clinical demands and little resources for research efforts.

Abstract 15

Teaching Effective Parenting Skills One Resident At A Time

Lisa S. Spector, MD, Lisa Polka, LCSW, Developmental and Behavioral Sciences, Serkan Toy, PhD, Amber Hoffman, MD, Graduate Medical Education, Sarah Nyp, MD, Stephanie Andrews, LCSW, Developmental and Behavioral Sciences, Children's Mercy Hospital, KC, MO

Purpose: The primary goal of this study is to determine the effect of participation in the Child-Adult Relationship Enhancement (CARE) Workshop, derived from PCIT, on pediatric residents' attitudes, beliefs, self-efficacy and reported clinical practice with regard to recognizing and discussing ineffective adult-child interactions with parents in the primary care setting. The secondary goal of this study is to determine the effect of participation in the CARE Workshop on pediatric residents' ability to utilize effective adult-child interaction skills. **Methods:** This is a single-centered, qualitative, descriptive study utilizing a convenience sample of 2nd and 3rd year pediatric residents to whom the 6-hour CARE Workshop was administered. Each resident completed a pre, post, and 6-month follow-up survey consisting of 39 validated questions in three major categories; namely beliefs, self-

efficacy, and behavior tapping into the main concepts addressed during the CARE workshop. In addition, the residents participated in a pre and post video assessment of their skills with a 3-5 yr old child volunteer, which was coded by 2 blinded therapists. The data pertaining to the survey were analyzed using the Mann-Whitney U test while the video recording results were analyzed using a paired sample T-test. **Results:** We found a statistically significant improvement ($p < 0.05$) in the following: residents' belief that it is a pediatrician's role to discuss parent-child related issues with families; residents' belief that parents expect pediatricians to discuss parent-child related issues; residents' self reported comfort level in modeling behaviors taught in the CARE Workshop (labeled praise, strategic ignore); residents' ability to access resources to help parents who struggle with how to discipline their children; residents' comfort level in discussing parent-child issues with parents; residents' modeling of parent-child interaction skills to parents (praise, ignore, Time-Out); residents' communication with parents about observed problems noted during the office visit. The 6-month follow-up survey showed no statistically significant decay in results from the post-survey as described above. **Conclusion:** The CARE Workshop significantly improved the pediatric residents' attitudes, beliefs, self-efficacy, and reported clinical practice with regard to recognizing and discussing ineffective adult-child interactions with parents in the primary care setting.

Abstract 16

Do Physicians and Parents Communicate about Complementary and Alternative Treatments for Children with Autism Spectrum Disorders?

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Purpose: Complementary and Alternative Medicine (CAM), including dietary interventions, are highly prevalent in children with Autism Spectrum Disorders (ASD). While CAM use appears ubiquitous, no data exist on how autism specialists document the topic or discuss CAMs or specialty diets in clinic encounters. **Methods:** Data from 160 children 2-16 years ($M = 5.6y$; $SD = 3.2y$), enrolled in a local-registry at an urban autism center, were used for the study. All children had an ASD diagnosis using clinical diagnosis and the Autism Diagnostic Observation Schedule (Lord et al, 2002). Parent's documentation of CAM and diet in their child was gathered from a form which captured up to 6 dietary and 15 CAMs. Clinician documentation was gathered via chart review between 2008-2010. Bivariate analyses examined demographic differences. Positive predictive value (PPV) examined the proportion of subjects using CAM/diets via parent-report that were also documented by clinicians. **Results:** A total of 23 (15%) and 24 (15%) parents reported CAM and/or diet use in their children. Of these, 19 (47%) were only using 1 CAM or diet, 13 (32%) were receiving 2, and the remaining 8 children were using 3 or more (max=13). The most common CAMs and diets reported by parents were vitamins, and gluten-casein-free diets (both $n = 14$). No demographic differences were found between children using CAMs versus no CAMs. Children on specialty diets were significantly younger. ($t = 2.87, p < .01$). Of those with parent-reported CAM use, 60% was also documented by clinicians. For children using a specialty diet, 54% was reported by clinicians. This resulted in a PPV of 56% and 54% for CAM and diets. **Conclusion:** Prevalence of CAMs and dietary treatments were far less than those reported in the literature. However, these data are consistent with those collected by Coury et al. (2010, 2011) using a similar, albeit, much larger sample. Low concordance between clinicians and parents was observed when the parent reported CAM and/or dietary intervention. Taken together, these findings indicate that a substantial proportion of children may be being treated with CAM and/or diets either without the clinician's knowledge or documentation of such. This could potentially lead to missing

harmful treatments and/or interactions using current or prospective medical intervention by the treating provider or other providers who rely on this documentation.

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Use of the Ages and Stages Questionnaire in Detection of Neuromotor Concerns in Former Preterm Infants

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Purpose: Preterm infants are at risk for neuromotor (NM) impairment. Often, pediatricians rely on physical examination and parent questionnaires to detect NM concerns. The Ages and Stages Questionnaire (ASQ-3) was compared to a directly administered motor test, the Test of Infant Motor Performance (TIMP), to evaluate its use in the detection of NM abnormalities.

Methods: Infants born preterm in the NICU were enrolled. The TIMP and ASQ were given at 6 and 12 weeks corrected gestational age (GA). ASQ scores labeled close to cutoff and below cutoff were concerning. TIMP scores <1 SD were concerning.

Results: There were 18 participants with birth GA ranging 24-35 weeks. Birth weight ranged 440-2575 grams. Head ultrasound identified 22% with intraventricular hemorrhage (<=grade 4). No infants had periventricular leukomalacia. 44% and 38% of the patients failed the TIMP at 6 and 12 weeks, respectively. Sensitivity of the ASQ's individual domains to detect NM abnormality was overall low (see table), but increased when looking at any failed motor domain at 12 weeks, and any failed domain at both 6 and 12 weeks. **Conclusion:** Individual motor domains of the ASQ have poor sensitivity in the detection of NM abnormalities in former preterm infants at 6 and 12 weeks. Clinicians should not rely solely on the failed domains of the ASQ to determine NM concerns, but rather the questionnaire as a whole, in combination with a neuromotor examination.

Sensitivity and Specificity of ASQ When Compared to the TIMP

| | | GM domain failure | FM domain failure | Any motor failure | Any domain failure |
|----------|----|-------------------|-------------------|-------------------|--------------------|
| 6 weeks | Sn | 63 | 50 | 63 | 100 |
| | Sp | 80 | 90 | 70 | 10 |
| 12 weeks | Sn | 67 | 67 | 100 | 100 |
| | Sp | 75 | 58 | 58 | -- |