The Contribution of Child Effortful Control and Negative Emotion to Acute Intervention in a Psychiatric Hospital

David J. Bridgett[1], Kristin Valentino[2], and Lisa Creane Hayden[3]

Northern Illinois University[1], University of Notre Dame[2], Riverview Hospital for Children and Youth[3]

Introduction

- In response to extreme patient behavior that places patients and staff at significant risk of injury, restraint (i.e., physical holds) and seclusions have been used in psychiatric hospitals, schools, and ERs[1-3].
- Costs associated with the use restraint/seclusions (R/S) in acute crisis situations include[4-5]:
  - Risk of staff injury or patient injury/death
  - Emotionally traumatizing for patients/staff
  - Significant financial costs to facilities
- Identifying patients at higher risk of behavior requiring the use of R/S may result in more targeted efforts aimed at reducing and/or preventing the use of R/S
- Some characteristics placing children at greater risk for behavior resulting in the use of R/S include[3,6-8]:
  - Age – younger children at greater risk
  - History of maltreatment
  - Male Gender
  - Prior aggressive, oppositional behavior
  - Callous-unemotional traits
- No studies have examined temperament characteristics, such as effortful control (EC) and negative emotionality (NE) as contributors to R/S episodes, despite links between EC and NE and behavioral problems[9]

Hypotheses

- After controlling for gender, maltreatment history, age, depressive and externalizing symptoms, it was anticipated that
  - Lower EC would predict increased instances of R/S in the first two weeks of inpatient hospitalization
  - Higher NE would also contribute to increased instances of R/S in the first two weeks of inpatient hospitalization

Method - Participants

- Participants consisted of 52 youth hospitalized in a child psychiatric facility
  - Ages ranged from 7 to 17; *M* = 14.1 years
  - CT Dept. of Children and Families IRB, facility medical director, and board of directors approved the study

Method – Measures & Procedure

- Psychiatrically stable youth were referred to the study by their primary clinicians; those agreeing to participate and whose guardians consented, took part in an approximately 1.5 hour evaluation
- Medical records data, including, number of physical holds and seclusions during the 1st 2-weeks of hospitalization were obtained
  - History of physical or sexual abuse was coded from CPS and medical records using a modified version of the Maltreatment Classification System[10]
- Depressive symptoms were assessed by youth self-report on the Children's Depression Inventory[11]
- Externalizing problems were assessed with the CBCL externalizing problems scale[12], which was completed by each youth's primary clinician
- NE was the mean of the Fear and Frustration scales from the parent report version of the EATQ-R[13], modified for use in the current study to be completed by the youth's clinician
- Multi-method EC Composite
  - Mean of reversed scored (high scores = poor EC) EATQ-R Attention and Inhibitory Control scales
  - Individually administered Color-Word Interference Task, a stroop-like task, from the D-KEFS[14]
  - Both measures were standardized
  - EC = mean of standardized EATQ-R EC and Color-Word Interference task, r = .49, p < .01

Results

Table 1 – Associations Between Primary Study Variables

Variable	1	2	3	4	5	6	7
1. Gender		.13	*-.30**	.17	.17	.17	-.13
2. Maltreatment Hx			*-.41**	*.29**	*.47**	.19	.19
3. Age				.01	*-.43**	-.22	*-.61**
4. Depression					*.47**	.21	.07
5. Externalizing						*.38**	*.39**
6. Negative Emotion							*.47**
7. Effortful Control							-----
8. Acute Interventions	**.11**	**.13**	***-.30****	**.02**	**.20**	***.48****	***.51****

* = p < .05; ** = p < .01 all tables

Table 2 – Prediction of R/S by Effortful Control

Step	Predictor	β	ΔR²
1	Gender	-.015	.123*
	Age	-.240	
	Maltreat Hx	.188	
2	Depression	-.068	.003
	Externalizing	.057	
3	Effortful Control	**.717****	**.243****
		Total Adj. R²	**.285**

Table 3 – Prediction of R/S by Negative Emotionality

Step	Predictor	β	ΔR²
1	Gender	-.015	.123*
	Age	-.240	
	Maltreat Hx	.188	
2	Depression	-.068	.003
	Externalizing	.057	
3	Negative Emotion	**.476****	**.189****
		Total Adj. R²	**.224**

Conclusions & Future Directions

- To our knowledge, this is the first study to investigate contributions of youth temperament to acute interventions in a inpatient psychiatric sample
  - After accounting for risk factors identified in prior work, EC and NE made substantial contributions to the prediction of patient behavior that resulted in acute interventions
- These findings may have prevention implications in so much as EC and NE temperament characteristics may be able to be used to identify youth at greater risk for behavior resulting in acute interventions
- Future work can:
  - Address limitations in the current study by obtaining a larger sample, including additional risk factors in models, and obtaining other sources of temperament data, such as from more traditional caregiver reports
  - Examine additional individual difference risk factors for behavior resulting in acute interventions, such as executive functions, that have not yet been widely considered in the existing literature

References

1. Zun, L. S., & Downey, L. (2005). The use of seclusion and restraint in emergency medicine. *General Hospital Psychiatry, 27*, 365-371.
2. Mohr, W. K., et al. (2010). Tied up and isolated in the schoolhouse. *Journal of School Nursing, 26*, 91-101.
3. Sourander, A., et al. (2002). Use of holding, restraints, seclusion, and time-out in child and adolescent psychiatric in-patient treatment.*European Child and Adolescent Psychiatry, 11*, 162-167.
4. Mohr, W. K. (2006). Reflecting tragedy: A commentary on deaths children in restraints. *Child Abuse & Neglect, 30*, 1329-1331.
5. LeBel, J., & Goldstein, R. (2005). The economic cost of using restraint and the value added by restraint reduction or elimination. *Psychiatric Services, 56*, 1109-1114.
6. Goren, S. et al. (1993). The aggression-coercion cycle: Use of seclusion and restraint in a child psychiatric hospital. *Journal of Child and Family Studies, 2*, 61-73.
7. Delaney, K.R., & Fogg, L. (2005). Patient characteristics and setting variables related to use of restraint on four inpatient psychiatric units for youth. *Psychiatric Services, 56*, 186-192.
8. Stellwagen, K.K., & Kerig, P.K. (2010). Relating callous-unemotional traits to physically restrictive treatment measures among child psychiatric inpatients. *Journal of Child and Family Studies, 19*, 588-595.
9. Eisenberg, N., et al. (2009). Longitudinal relations of children's effortful control, impulsivity, and negative emotionality to their externalizing, internalizing, and co-occurring behavior problems. *Developmental Psychology, 45*, 988-1008.
10. Barnett, D., et al. (1993). Defining child maltreatment: The interference between policy and research. In D. Chicchetti, & S. Toth (Eds), *Child abuse, child development and social policy* (7-73). Norwood, NJ: Ablex.
11. Kovacs, M. (1981). Rating scales to assess depression in school-aged children. *Acta Paedopsychiatrica, 46*, 305-315.
12. Achenbach, T.M. (1991). Manual for the child behavior checklist and revised child behavior profile. Burlington, VT: University of Vermont, Department of Psychiatry.
13. Muris, P., & Meesters, C. (2009). Reactive and regulative temperament in youths: Psychometric evaluation of the early adolescent temperament questionnaire-revised. *Journal of Psychopathology and Behavioral Assessment, 31*, 7-19.
14. Delis, D. C., Kaplan, E., & Kramer, J. H. (2001). Delis-Kaplan executive function system (D-KEFS): Examiner's manual. San Antonio, TX: The Psychological Corporation.

Corresponding Author

- Many thanks to the patients who participated and the staff whose efforts in facilitating the project were instrumental in obtaining the data needed
- Poster Presented at the March 2011 Biennial Meeting of SRCD
- Corresponding Author: David J. Bridgett; dbridgett1@niu.edu
- To download a copy of this poster, please visit the Emotion Regulation & Temperament Lab website at www.niu.edu/emotionreg