Can Family Strengths Reduce Risk of Substance Abuse among Youth with SED?

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Relationship between Substance Abuse and Psychiatric Disorders

- Among individuals with dual disorders, psychiatric problems tend to emerge before substance abuse disorders (Kandel, et al., 1997; Kessler et al., 1996; Christie, et al., 1988).
- Temporal order does not imply causality. Common causal factors for both disorders could be influencing their development (Kessler, et al., 1996).
- For example, adverse life experiences are related to psychological distress (Ge, et al, 1994) and onset of substance use (Turner & Lloyd, 2003).

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Family Variables and Youth Substance Abuse

- Positive parenting protects youth from substance abuse and can mediate peer and community influences (Brody & Ge, 2001; Brook, et al., 2003).
- Children of parents with drug dependence are at greater risk of drug-related disorders (Chassin, Pitts, & Prost, 2002; Obot, Wagner, & Anthony, 2000).
- Research suggests that this is strongly related to shared physiological sensitivity (Phillips, 1997; Merikangas, et al. 1998; Bierut, et al. 1998).
- However, positive family cohesion reduces that risk (Hoffman & Cerbone, 2002).

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Research Gaps

There are several studies that examine the prevalence of substance abuse disorders among youth in mental health treatment.

However, despite compelling evidence that youth with emotional and behavioral disorders are at greater risk for substance abuse problems, the factors related to onset of substance abuse among youth in mental health treatment remain relatively unexplored.

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Current Study

- Data were collected as part of the evaluation of the Comprehensive Community Mental Health Services for Children and Their Families Program.
- Analyses include data collected at baseline, 6, 12, and 18 months.

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Caregiver-reported Data

Predictor variables collected from caregivers at time of youth's first self-report (baseline or 12-month follow-up).

- Child demographics (i.e., age, gender, race, ethnicity)
- History of substance abuse by biological relative
- Biological parent received substance abuse treatment
- Child physical or sexual abuse
- Youth total symptoms T-score (Child Behavior Checklist)
- Youth strengths (Behavioral and Emotional Rating Scale)
- Global caregiver strain (Caregiver Strain Questionnaire)
- Family material resources (Family Resource Scale)
- General family functioning, caregiver report (Family Assessment Device)

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Youth-reported Data

Outcome variables collected from youth

- Any use of alcohol or drugs at first self-report
- First use of alcohol in subsequent follow-up
- First use of other drugs (e.g., marijuana, inhalants, amphetamines) in subsequent follow-up

Sample

Includes youth 11 through 18 years old who had reported no use of drugs when they were first assessed.

Onset of Alcohol Use Analyses

- 1101 youth were 11 years or older
- 415 (38%) were dropped because they reported having already used alcohol
- 183 (17%) were dropped because of missing data

Onset of Other Drug Use Analyses

- 1221 youth were 11 years or older
- 475 (39%) were dropped because they reported having already used drugs
- 90 (7%) were dropped because of missing data

Sample

	Analysis	
Variable	Alcohol (*N* = 503)	Other Drugs (*N* = 656)
Mean age (SD)	13 (1.74)	13 (1.69)
11-14 – *N* (%)	394 (78)	512 (78)
15-18– *N* (%)	109 (22)	144 (22)
Males (%)	346 (69)	454 (69)
Race		
White – *N* (%)	278 (55)	370 (56)
African American – *N* (%)	131 (26)	164 (25)
Other – *N* (%)	94 (19)	122 (19)
Hispanic ethnicity – *N* (%)	53 (11)	62 (9)

Note: 427 youth were in both analyses

Sample

	Analysis	
Variable	Alcohol (*N* = 503)	Other Drugs (*N* = 656)
Risk factors – *N* (%)		
Bio relative history of drug abuse	331 (66)	413 (63)
Bio parent received SA treatment	157 (31)	190 (29)
Child was physically abused	127 (25)	182 (28)
Child was sexually abused	108 (21)	140 (21)
BERS Strength Quotient - *M* (SD)	85.44 (16.17)	85.97 (16.31)
CBCL Total Problems T score - *M* (SD)	71.50 (9.76)	70.74 (10.22)
CAFAS Total Role Functioning - *M* (SD)	25.72 (7.06)	25.34 (7.54)
Global CGSQ - *M* (SD)	9.06 (2.52)	9.01 (2.54)
FAD General Functioning - *M* (SD)	2.83 (.49)	2.83 (.48)
FRS Average - *M* (SD)	3.48 (.71)	3.51 (.71)

Onset of Substance Use

- At first assessment, 503 youth reported no alcohol use. Of those, 119 (24%) reported use in subsequent assessment.
- Of the 656 youth who reported no use of other drugs at first assessment, 115 (18%) of those youths subsequently reported use.

Analyses

- Cox Regression (Cox, 1972)
  - One type of a family of analyses often called survival analysis, time-to-event analyses, or event history analyses.
  - Conceptually in between logistic and linear regression—examines if an event happened (logistic) and how long it took to happen (linear) (Landau, 2002; Luke & Homan, 1998).
  - Accounts for right censored data—that is, allows the inclusion of data from participants that were lost from a longitudinal study, or that did not have the event happen to them over the course of the longitudinal study.

Analyses

- Analyses conducted separately for onset of use of alcohol and other drugs
- Only included youth who said at baseline they had never used that substance
- Outcome variable--time of first use of that substance--6 month, 12 month, or 18 month follow-up.
- Predictor variables--"Variables of theoretical interest" including demographics, functioning, and family variables mentioned previously

Analyses

- Used Cox Regression to explore factors associated with onset of substance use among youth in treatment
  - First, completed stepwise regressions
  - Second, entered IV's ($p<.15$ in stepwise) simultaneously to arrive at final solution, using chi-square statistics to assess best fit.
  - Third, ran tests to assess proportionality assumption and possible undue influence (i.e. multivariate outliers). Excluded two cases from alcohol analysis and one case from illicit drug analysis.
  - Ran final simultaneous model.

Alcohol

Simultaneous entry, final model

	B	SE	β	*p*
CGSQ global strain	.081	.037	1.085	.030
History of substance abuse in bio family	.413	.209	1.512	.048
Child age	.263	.049	1.301	<.001

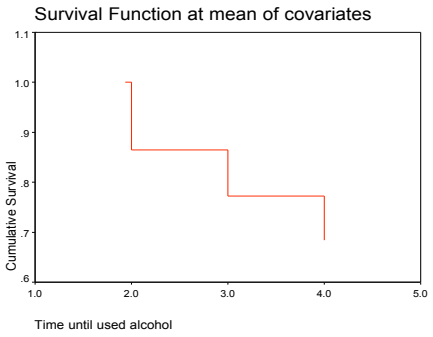
n = 501 (Event = 118, Censored = 313)

-2 Log Likelihood = 1350, $\chi^2(2) = 36.9$, $p < .001$

Alcohol

Final model

- So, what does that table mean?
- At any point in time (6, 12, 18 months) after baseline:
  - As baseline youth age increases by one year, youth are 30% more likely to try alcohol
  - As the baseline caregiver strain score increases by one unit, youth are 9% more likely to try alcohol
  - Youth whose biological family has a history of substance use are 51% more likely to try alcohol



Any Illicit Drug

Simultaneous entry, final model

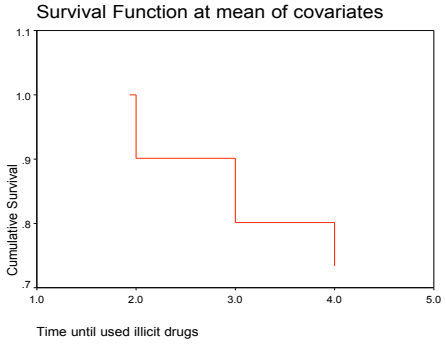
	B	SE	β	*p*
Child age	.208	.05	1.232	<.001
CBCL total problems	.027	.01	1.028	.007

n = 655 (Event = 114, Censored = 541)

-2 Log Likelihood = 1359, $\chi^2(2) = 22.5$, $p < .001$

Any Illicit Drug
Final model

- OK… now what does THAT table mean?
- At any point in time (6, 12, 18 months) after baseline:
  - As baseline youth age increases by one year, youth are 23% more likely to try illicit drugs
  - As the baseline CBCL total problem score increases by one unit, youth are 2.8% more likely to try illicit drugs



Limitations

- "Time" operationalized as study time, not developmental time.
- Loss of participants due to missing data in predictor variables.
- Onset of substance use was relatively rare compromising stability of findings.
- Use of stepwise regression capitalizes on chance.
- Secondary data analysis--we only had access to the variables in this dataset.

Discussion

- That age was the most powerful predictor of onset of use of alcohol and other drugs is consistent with previous findings in the literature for mental health samples (e.g., Greenbaum, et al., 1991).
- Total problem score was the only other variable that predicted onset of drug use.
- In addition to age, global caregiver strain and family history of substance abuse predicted onset of alcohol use.

Discussion

- Research indicates that the history of family substance abuse may be exerting causal influence.
- Beyond the family history of substance abuse finding, however, we do not interpret these findings as causal relationships but more as foreshadowing. Youth with more symptoms are at greater risk for many types of negative outcomes.
  - Caregiver strain may be predictive because caregivers have the best sense of how serious their children's problems are.
- Relationships may be more complex than this technique can address.

Implications

- Practitioners should be aware of the elevated risk of onset of substance use among youth with more psychiatric symptoms, more strained caregivers, and family histories of substance abuse.
- Will use lifetime data to study age of onset of substance use among youth who will eventually enter mental health treatment.
- Structural equations modeling may be a better approach to studying the impact of family protective factors from an ecological framework.

Conclusions

- Family history of substance abuse and caregiver strain were the only family variables that provided independent prediction of youth onset of substance use.
- The other family variables (i.e., general family functioning and material resources) included in the model were likely not precise enough. Had we measures of communication, cohesion, and parenting, we may have seen a protective influence.
- That this was a sample of youth already in treatment for emotional and behavioral disorders, and not a community sample, may explain why family risk factors offered no unique power to predict onset of substance use.
- This view is in keeping with emerging theory that inter-relationships among child, family, and other risk factors call for an ecological approach (e.g., Dishion, 1999).