

Suicidal thoughts and behaviors in African-American and European-American youth in a community family study of alcoholism

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Abstract

We explored the presence of suicidal thoughts and behaviors in offspring of families across low to high risk of exposure to problem drinking. Data from 472 mothers on 1099 offspring were collected in the Missouri Family Study, a population-based family study. Additionally, 799 offspring reported on themselves with 791 offspring completing the suicidality section of the interview. Thus, complete mother and offspring data are available on 791 offspring from 401 families. Here we compare and contrast the effects of race (European American (EA) v. AA) upon the presence of suicidal thoughts, behaviors and potential risk factors within low risk (LR) and high risk (HR) families. In the final model, offspring depression and anxiety disorders remained robust predictors of having any type of suicidality (i.e. ideation, ideation > 1 day, ideation with plan, attempt, multiple attempts) even after controlling for multiple risk factors in both LR and HR families. Being AA was protective in LR but not HR families, suggesting a race by family type interaction. Conduct disorder, having a history of assaultive trauma, and reporting a family history of any suicide attempt were predictive of having suicidality in HR but not LR families.

Sample

- General population sample of families, ascertained using Missouri birth records (maintained by the Missouri Family Registry)
 - Oversample of African American families
 - Index children selected from birth years to be aged 13,15,17,or 19 at first interview (comparable to twin-family studies in MARC research group)
 - High risk design using screening interviews with mothers
 - Mothers of index child interviewed about family structure and her own health behaviors and those of the child's father
 - From screening interview, families are considered high risk by mother report of child's father as an excessive drinker; otherwise low risk
 - Second type of high risk family – families of men with 2 or more DUI's on driving record – "Recurrent Drunk Driving" or RDD families
 - Enrollment to date : 217 EA families (66 Low Risk, 151 HR/RDD) (393 offspring); 255 AA families (126 Low Risk, 129 HR/RDD) (446 offspring)
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Family Risk: Paternal Excessive Drinking

- Low Risk (LR) Family:** Mothers report no history of paternal excessive drinking
- High Risk (HR) Family:** Mothers report a history of paternal excessive drinking: *"Has 'father' ever been an excessive drinker, that is someone who drinks too much?"* **Recurrent Drunk Driving (RDD) Family:** Fathers with 2 or more drunk driving citations

*Note: due to low numbers of AA RDD families recruited to date, HR and RDD families have been combined for analysis

Outcome variables: suicidal thoughts and behaviors

- **SI:** suicidal ideation
- **SI_d:** SI lasting more than a day
- **SP:** SI with a suicide plan
- **SA:** any suicide attempt
- **MSA:** multiple suicide attempts

*Note: All offspring entered the suicidality section of the questionnaire. It was NOT contingent on being depressed.

Input variables: potential risk factors for SI/SA

- Age, gender, race
- **Offspring reported:**
 - Depression (≥ 5 clustered sx's)
 - Anxiety disorder (panic or GAD)
 - Conduct disorder (≥ 1 sx forced to $<$ age 15)
 - Substance use
 - Assaultive trauma
 - Race discrimination (≥ 3 domains*)
 - Sibling history of suicide/attempt**
 - Religiosity (attends at least 1/wk)
- **Mother reported:**
 - ODD (no CD exclusion)
 - ADHD
 - Maternal lifetime alcohol dep (AD)
 - Maternal lifetime depression
 - Parental and maternal family history of suicide/attempt**

*Domains: school, job, work, home, medical care, legal system, public

**Mother and offspring reported FH of suicide/attempt were combined for analyses

Substance use variables

- **Early age 1st intoxication:** Of offspring who reported ever intoxication (N=253), 25% of Low Risk offspring had onset by age 15.
 - Thus, early age of 1st intoxication: onset < age 16.
- **Early age 1st regular smoke:** Regular smoking is defined as smoking at least 1/week for at least 2 months in a row. Of offspring who reported ever regular smoking (N=133), 25% of Low Risk offspring had onset by age 15.
 - Thus, early age of 1st regular smoking: onset < age 16.

Sample demographics

791 children from a total of 401 families reported on suicidal thoughts and behaviors. Demographics of 377 EA offspring from 191 families and 414 AA offspring from 210 families are shown

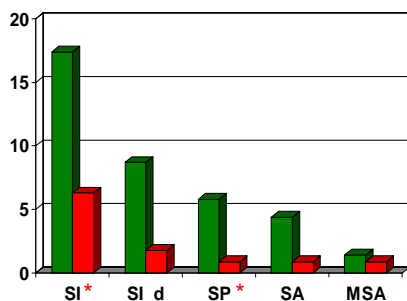
	EA N=377	AA N=414	p-value
HR/RDD family risk type*	63.1%	45.9%	<.0001
Male	48.3%	50%	n.s.
Mean age	17.1 (3.2)	17.4 (3.5)	n.s.
Median income	\$60,000	\$28,500	<.0001

**The racial difference in % HR/RDD family type reflects family recruitment and not offspring response bias.*

- All 5 outcomes of suicidal thoughts and behaviors were significantly elevated in females compared to males.
- There was no difference in % males based on family risk type
- Additionally, offspring from HR/RDD families had higher rates of SI and SI with plan (SP). There was a trend toward higher rates of SA and multiple SAs (MSA).
- Because of the lower rates of HR/RDD offspring among the AA sample, we subset race on family risk type throughout the analyses.
- AA LR offspring had lower rates of SI and SI_d compared to EA LR offspring. There were no differences between AA and EA HR/RDD offspring on any suicidality measures.

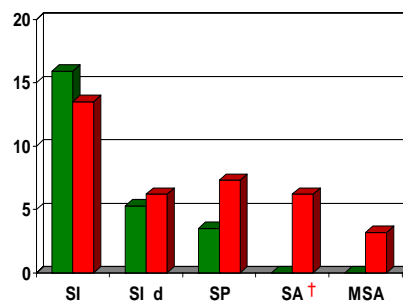
Prevalence of suicidal thoughts and behaviors in *males* by *race*; subset on *family risk*

MALE LR OFFSPRING



*p<.05

MALE HR/RDD OFFSPRING

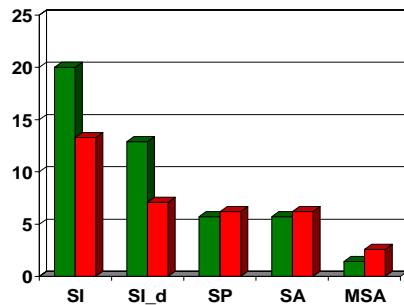


†p<.01

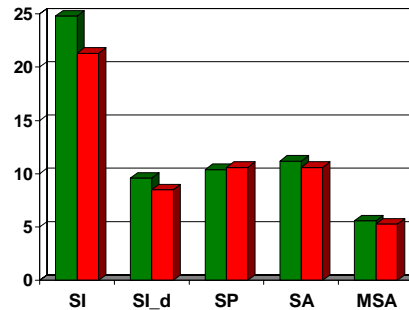
There appears to be a race by family risk type effect on suicidality outcomes in males.

Prevalence of suicidal thoughts and behaviors in *females* by *race*; subset on *family risk*

FEMALE LR OFFSPRING



FEMALE HR/RDD OFFSPRING



Less of a race by family risk type effect is seen among females compared to males in this sample.

Prevalence of DSM-IV disorders and other potential risk factors

- As expected, higher rates of depression were found among female compared to male offspring. Rates of ADHD, ODD and CD were higher among male offspring.
 - HR/RDD offspring had higher rates of ODD, CD, assaultive trauma, early age 1st intoxication and regular smoking, maternal depression and alcohol dependence, family history of suicide and less than weekly church attendance.
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Prevalence of potential suicidality risk factors in *males* by race; subset on *family risk*

	MALE LR OFFSPRING			MALE HR/RDD OFFSPRING		
	EA (%)	AA (%)	p-value	EA (%)	AA (%)	p-value
DEPRESSION	13.0	8.1	n.s.	8.8	9.4	n.s.
ANXIETY DISORDER	8.7	3.6	n.s.	1.8	5.2	n.s.
ADHD	14.5	20.7	n.s.	19.5	24.0	n.s.
ODD	7.2	8.1	n.s.	12.4	22.9	<.05
CD	7.2	12.6	n.s.	20.4	18.8	n.s.
1 ST INTOXICATION < AGE 16	15.9	7.2	n.s.	24.8	6.2	<.001
1 ST REG SMOKING < AGE 16	1.4	3.6	n.s.	8.0	5.2	n.s.
ASSAULTIVE TRAUMA	10.1	18.0	n.s.	12.4	25.0	<.05
RACE DISCRIMINATION	1.4	9.0	<.05	0.9	12.5	<.001
MOTHER WITH AD	7.2	6.3	n.s.	22.1	17.7	n.s.
MOTHER WITH DEPRESSION	17.4	27.0	n.s.	42.5	31.2	n.s.
FAMILY HISTORY OF SA	13.0	18.9	n.s.	20.4	28.1	n.s.
ATTENDS WORSHIP 1x/WK	60.9	43.2	<.05	31.9	40.6	n.s.

Prevalence of potential suicidality risk factors in *females* by race; subset on *family risk*

	FEMALE LR OFFSPRING			FEMALE HR/RDD OFFSPRING		
	EA (%)	AA (%)	p-value	EA (%)	AA (%)	p-value
DEPRESSION	18.6	20.4	n.s.	25.6	20.2	n.s.
ANXIETY DISORDER	2.9	4.4	n.s.	7.2	13.8	n.s.
ADHD	4.3	6.2	n.s.	7.2	10.6	n.s.
ODD	4.4	6.2	n.s.	10.4	11.7	n.s.
CD	10.0	8.0	n.s.	8.0	5.3	n.s.
1 ST INTOXICATION < AGE 16	5.7	4.9	n.s.	24.0	3.2	<.0001
1 ST REG SMOKING < AGE 16	2.9	1.8	n.s.	18.4	5.3	<.01
ASSAULTIVE TRAUMA	11.4	13.3	n.s.	21.6	29.8	n.s.
RACE DISCRIMINATION	0	3.5	n.s.	0.8	8.5	<.01
MOTHER WITH AD	1.4	7.1	n.s.	16.0	11.7	n.s.
MOTHER WITH DEPRESSION	14.3	19.5	n.s.	32.8	38.3	n.s.
FAMILY HISTORY OF SA	15.7	16.8	n.s.	36.8	21.3	<.05
ATTENDS WORSHIP ≥ 1x/WK	62.9	49.6	n.s.	36.0	46.4	n.s.

Univariate associations with having any suicidality outcomes; subset on *family risk*

	LOW RISK OFFSPRING		HR/RDD OFFSPRING	
	OR (CI)	p-value	OR (CI)	p-value
FEMALE	1.7 (0.9-3.1)	n.s.	1.7 (1.0-2.7)	<.05
AFRICAN AMERICAN	0.5 (0.3-0.9)	<.05	0.8 (0.5-1.4)	n.s.
DEPRESSION	11.5 (5.8-22.8)	<.0001	15.2 (8.4-27.4)	<.0001
ANXIETY	20.0 (6.7-60.1)	<.0001	9.9 (4.4-22.4)	<.0001
ADHD	1.0 (0.4-2.6)	n.s.	1.1 (0.6-2.1)	n.s.
ODD	1.3 (0.4-4.0)	n.s.	1.3 (0.7-2.5)	n.s.
CD	1.4 (0.5-3.8)	n.s.	5.2 (2.9-9.5)	<.0001
1 ST INTOXICATION < AGE 16	1.9 (0.8-4.7)	n.s.	3.1 (1.8-5.5)	<.0001
1 ST REG SMOKING < AGE 16	0.8 (0.1-6.5)	n.s.	3.3 (1.7-6.4)	<.0001
ASSAULTIVE TRAUMA	3.5 (1.7-7.1)	<.001	3.9 (2.3-6.5)	<.0001
RACE DISCRIMINATION	3.4 (1.1-10.6)	<.05	2.0 (0.8-5.1)	n.s.
MOTHER WITH AD	0.7 (0.1-2.9)	n.s.	1.3 (0.7-2.4)	n.s.
MOTHER WITH DEPRESSION	1.1 (0.6-2.4)	n.s.	1.4 (0.9-2.4)	n.s.
FAMILY HISTORY OF SA	1.8 (0.9-3.7)	n.s.	2.9 (1.8-4.8)	<.0001
ATTENDS WORSHIP ≥ 1x/WK	0.9 (0.5-1.7)	n.s.	0.9 (0.5-1.5)	n.s.

Multivariate analysis: Odds of any suicidality outcomes; subset on *family risk*

	LOW RISK OFFSPRING		HR/RDD OFFSPRING	
	OR (CI)	p-value	OR (CI)	p-value
FEMALE	1.7 (0.8-3.7)	n.s.	1.1 (0.6-2.3)	n.s.
AFRICAN AMERICAN	0.4 (0.2-0.9)	<.05	0.8 (0.4-1.6)	n.s.
DEPRESSION	7.0 (3.1-15.9)	<.0001	9.4 (4.7-18.8)	<.0001
ANXIETY	11.0 (2.6-47.5)	<.01	4.5 (1.6-12.5)	<.01
ADHD	1.1 (0.3-3.5)	n.s.	1.3 (0.5-3.3)	n.s.
ODD	0.8 (0.2-3.3)	n.s.	1.0 (0.4-2.4)	n.s.
CD	0.7 (.2-3.0)	n.s.	3.0 (1.3-6.7)	<.01
1 ST INTOXICATION < AGE 16	1.1 (0.3-3.6)	n.s.	2.0 (0.9-4.6)	n.s.
1 ST REG SMOKING < AGE 16	0.5 (0.0-6.6)	n.s.	1.3 (0.5-3.5)	n.s.
ASSAULTIVE TRAUMA	2.3 (0.8-6.3)	n.s.	2.7 (1.4-5.3)	<.01
RACE DISCRIMINATION	4.2 (0.9-20.0)	n.s.	1.2 (0.3-4.1)	n.s.
MOTHER WITH AD	0.3 (0.0-2.2)	n.s.	0.8 (0.4-1.8)	n.s.
MOTHER WITH DEPRESSION	1.2 (0.5-3.0)	n.s.	0.9 (0.5-1.7)	n.s.
FAMILY HISTORY OF SA	1.2 (0.4-3.1)	n.s.	2.0 (1.0-3.8)	<.05
ATTENDS WORSHIP ≥ 1x/WK	1.4 (0.6-3.1)	n.s.	1.1 (0.6-2.1)	n.s.

Findings

- The presence of offspring depression and anxiety disorders remained robust predictors of having any type of suicidality after controlling for multiple risk factors in both LR and HR families.
 - AA race is a significant moderator of the presence of suicidality in LR but not HR families (with AAs afforded a lower risk).
 - Conduct disorder, having a history of assaultive trauma, and reporting a family history of any suicide attempt were predictive of having suicidality in HR but not LR family types.
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Limitations

- The inter-correlation of family members was not controlled for.
 - Data censoring: This was a cross-sectional analysis of Wave 1 data. Offspring remain in the period of risk for developing suicidality (especially the younger offspring).
 - Limited power to analyze suicidal thoughts and behaviors separately.
 - Some potential risk factors were not included, e.g. other anxiety disorders, illicit drug use, paternal family history of suicide, peer characteristics, personality factors, etc.
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Future Directions

- To examine the outcome of suicidal ideation separate from suicide attempt.
 - To include other potential risk factors in the analyses.
 - Data are currently being collected for Wave 2, allowing measurement of longitudinal outcomes.
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