

Regular Smoking, Nicotine Dependence and Suicidality in Adolescents and Young Adults

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BACKGROUND

- Current smoking, not past, associated with suicidality
- Heavy smoking positively correlated with suicidality
- National Comorbidity Survey data suggest association between suicide and smoking is due to comorbid psychiatric disorders

OBJECTIVE

- Determine if regular smoking, and nicotine dependence are associated with young adult and adolescent suicidality after adjusting for alcohol and cannabis abuse/dependence and major depression

METHODS

Sample derived from baseline assessments of two offspring of twin father studies, one sampling alcoholic twins and the other sampling drug dependent twins (1999-2003)

- Fathers
 - Twin fathers sampled from the Vietnam Era Twin Registry
 - All had at least 1 child 12-32 yrs old at baseline
 - Present analyses of twin pairs either concordant or discordant for nicotine dependence or unaffected controls
 - 1,774 (83%) fathers responded to diagnostic telephone interview
- Offspring
 - 1,919 (85%) eligible offspring responded to diagnostic telephone interview

Measurements

- Sampling Design
 - Twin pair concordance, discordance for lifetime DSM-IV nicotine dependence, alcohol abuse/dependence, illicit drug abuse/dependence plus unaffected control pairs
- Offspring Socio-demographics
 - 21.4 years old (range 12-32)
 - 83% white
 - 49.4% male
 - 52.7 ≤ high school graduate

- Smoking Variables:
 - Regular smoking defined as smoking 100 or more cigarettes in lifetime
 - Time to smoke upon waking (shorter time to smoke upon waking is marker for nicotine dependence)
 - Fagerstrom test of nicotine dependence (FTND) – questions assess severity of physical dependence
- Suicidality Variables
 - obtained in suicide survey independent of depression history
 - Ideation: Ever thought about taking your own life
 - Plan: Ever plan a way of taking your own life
 - Attempt: Ever tried to take your own life

Analytic Approach

- Analyses
 - Separate unadjusted and adjusted logistic regression models to test association between:
 - Regular smoking and each suicidality measure
 - Time to smoke upon waking and each suicidality measure and
 - FTND and suicidality

RESULTS

- 23% (n=433) ever thought of suicide
- 7% (n=125) ever planned way to take life
- 5% (n=95) ever tried to take life

- 35.6% (n=683) ever regular smokers
- Among regular smokers:
 - Time to smoke upon waking:
 - within 5 minutes 17.7% (n=121),
 - within 30 minutes, 26.1% (n=178),
 - within 60 minutes 21.7% (n=148),
 - more than 60 minutes 52.4% (n=358)
 - 32.6 % (n=223) nicotine dependent

Table 1. Unadjusted Odds Ratios and 95% Confidence Intervals For Smoking Measures and Suicide Outcomes

	Ideation	suicide plan	suicide attempt
Regular smoking	1.9 (1.5-2.4)	2.7 (1.8-4.2)	3.0 (1.9-4.6)
time to smoke upon waking:			
> 60 minutes	1.0	1.0	1.0
30-60 minutes	1.1 (0.7-1.8)	1.2 (0.6-2.5)	1.7 (0.8-3.4)
6-29 minutes	1.3 (0.9-2.0)	1.0 (0.5-2.0)	1.5 (0.8-3.1)
< 6 minutes	1.4 (0.9-2.2)	2.2 (1.1-4.8)	2.9 (1.5-5.7)
FTND	1.0 (0.7-1.5)	1.4 (0.7-2.7)	1.5 (0.8-2.8)

Table 2. Adjusted Odds Ratios and 95% Confidence Intervals For Association between Regular Smoking and Suicide Outcomes

	Ideation	Suicide plan	Suicide Attempt
Regular smoking	0.9 (0.5-1.3)	2.9 (1.3-6.5)	1.5 (0.7-2.9)
DSM-IV major depression	6.5 (4.2-9.9)	2.1 (1.1-4.2)	8.7 (4.6-16.5)
DSM-IV alcohol abuse/dependence	1.7 (1.1-2.6)	1.1 (0.5-2.5)	1.4 (0.7-2.9)
DSM-IV marijuana abuse/dependence	2.0 (1.3-3.3)	0.8 (0.4-1.8)	0.8 (0.4-2.0)
* Adjusted for sampling design, age, race, gender and education			

Table 3. Adjusted Odds Ratios and 95% Confidence Intervals For Association between Time to Smoke upon Waking and Suicide Outcomes

	Ideation	Suicide Plan	Suicide Attempt
time to smoke upon waking:			
> 60 minutes	1.0	1.0	1.0
30-60 minutes	0.6 (0.3-1.2)	1.5 (0.4-4.9)	1.7 (0.5-6.7)
6-29 minutes	0.8 (0.4-1.9)	1.2 (0.4-3.7)	2.0 (0.5-6.9)
< 6 minutes	0.9 (0.4-1.9)	1.7 (0.5-6.3)	4.7 (1.3-16.5)
DSM-IV major depression	6.8 (3.9-11.9)	1.2 (0.5-2.9)	7.4 (3.1-17.8)
DSM-IV alcohol abuse/dependence	1.5 (0.9-2.6)	0.8 (0.3-2.2)	1.8 (0.7-4.9)
DSM-IV marijuana abuse/dependence	2.2 (1.3-3.9)	0.9 (0.4-2.5)	0.8 (0.3-2.4)

* Adjusted for sampling design, age, race, gender and education

Table 4. Adjusted Odds Ratios and 95% Confidence Intervals For Association between FTND and Suicide Outcomes

	ideation	Plan Suicide	Suicide Attempt
FTND	0.3 (0.2-0.6)	1.2 (0.4-3.7)	1.2 (0.4-3.5)
DSM-IV major depression	9.2 (4.6-18.1)	1.7 (0.6-4.9)	5.6 (1.7-18.6)
DSM-IV alcohol abuse/dependence	1.7 (0.9-3.1)	0.5 (0.2-1.6)	1.7 (0.5-5.2)
DSM-IV marijuana abuse/dependence	3.0 (1.6-5.6)	1.2 (0.4-3.7)	1.3 (0.4-3.9)

* Adjusted for sampling design, age, race, gender and education

CONCLUSIONS

- Regular smoking, regardless of nicotine dependence, is associated with suicidality.
- After adjustment for covariates, regular smoking was significantly associated with having ever made a suicide plan and early smoking upon waking was associated with ever making a suicide attempt
- Smoking in adolescents and young adults may be an indicator of suicidality

FUTURE RESEARCH

- Further research is warranted to test association with DSM-IV criteria for nicotine dependence
- Assess the role of impulse control, e.g. conduct disorder
- Use longitudinal assessment and survival analyses to measure time to suicide plan and attempt as function of smoking measures