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The Development of Alcoholism in a Community Sample of Men: An 11-year Follow-up Study

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Introduction

- To investigate the risk factors for and the protective factors against alcoholism, we (KKB) conducted an 11-year follow-up of men at low and high risk for its development.

- The men were obtained from the St. Louis sample of the Epidemiological Catchment Area (ECA) study

Methods

- Subjects were drawn from the household sample of the ECA project and were between the ages of 18 and 50 at intake
- All subjects received the DIS at intake and at one year later
- No subject had DSM-III alcoholism at either time

Methods

- At index, subjects were divided in those at low and at high risk for alcoholism
  - High risk subjects had:
    - either heavy or problem drinking
    - a family history of alcohol problems
    - or a high risk score derived from a logistic regression equation of seven risk factors associated with problem drinking
  - Low risk subjects had:
    - none of the above

Methods

- Of the 326 men selected for follow up
  - 77.3% were interviewed
  - 2.4% were deceased
  - 1.2% were unlocatable
  - 1.2% were uninterviewable
  - 17.8% refused

Methods

- 252 subjects received follow up assessments
  - 18 had been categorized as low risk
  - 234 had been categorized as high risk
- The high-risk subjects were further subdivided into 112 non excessive and 122 excessive drinkers

Conclusions

- Men who were African - American were less likely to develop alcoholism than men who were Caucasian
- Men with either excessive drinking or DSM-III marijuana use disorder at index were more likely to develop alcoholism than men without

Table 1: Psychosocial Data at Follow-Up

	Low-Risk (n=18)	High-Risk	
		Non-excessive Drinkers (n=112)	Excessive Drinkers (n=122)
Mean Age	42.0 ± 9.8	41.9 ± 8.0	43.3 ± 7.4
Ethnic Group			
Caucasian	50.0%	56.2%	68.0%
African-American	50.0%	42.9%	30.3%
Other	0%	0.9%	1.6%
Marital Status			
Never Married	11.1%	19.6%	11.5%
Married	83.3%	62.5%	67.2%
Divorced, separated, or widowed	5.6%	17.9%	21.3%

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Table 1: Psychosocial Data at Follow-Up (continued)

	Low-Risk (n=18)	High-Risk	
		Non-excessive Drinkers (n=112)	Excessive Drinkers (n=122)
Employment Status			
Employed full time	94.1% (17)	91.9% (99)	98.2% (108)
Professional Status			
Professional	11.8%	25.2%	14.8%
Managerial	11.8%	10.1%	9.3%
Technical, sales, clerical	11.8%	21.2%	21.3%
Blue collar	64.7%	43.4%	54.6%
	(17)	(99)	(108)

Table 2: Religious Convictions

Convictions of rearing	Low-Risk (n=18)	High-Risk	
		Non-excessive Drinkers (n=112)	Excessive Drinkers (n=122)
Catholic	11.1%	26.1%	30.3%
Protestant	88.9%	71.2%	63.1%
Other	0%	0.9%	1.6%
None	0%	1.8% (111)	4.9%
Protestant[a]	44.4%	33.0%	21.3%
Fundamentalism			
Religious rules against alcohol use	50.0%	31.2%	37.7%

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Table 2: Religious Convictions (continued)

Convictions at follow-up	Low-Risk (n=18)	High-Risk	
		Non-excessive Drinkers (n=112)	Excessive Drinkers (n=122)
Catholic	11.1%	19.6%	21.3%
Protestant	83.3%	63.4%	54.9%
Other	0%	6.2%	5.7%
None	5.6%	10.7%	18.0%
Protestant[b]	44.4%	30.4%	17.2%
Fundamentalism			
Religious rules against alcohol use	50.0%	31.2%	29.5%

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Table 2: Religious Convictions (continued)

Convictions at follow-up	Low-Risk (n=18)	High-Risk	
		Non-excessive Drinkers (n=112)	Excessive Drinkers (n=122)
Religiosity score[c]			
4	22.2%	10.7%	8.2%
3	0%	9.8%	4.9%
2	44.4%	24.1%	20.5%
1	11.1%	5.4%	17.2%
0	22.2%	50.0%	49.2%
# of services attended in last 12 months[d]	58.9 ± 11.1	33.8 ± 4.5	19.3 ± 4.3

a. $\chi 2 = 6.502$ with 2 df, $p<0.04$
b. $\chi 2 = 9.289$ with 2 df, $p<0.01$
c. Kruskal-Wallis $X2 = 5.832$ with 2 df, $p<0.05$
d. $F = 6.78$ with 2,249 df, $p<0.01$

Table 3: Incidence of Lifetime Alcoholism During the 11 Year Follow-up.

	Low-Risk (n=18)	High-Risk	
		Non-excessive Drinkers (n=112)	Excessive Drinkers (n=122)
DSM-III [a] abuse or dependence	5.6%	8.0%	35.2%
DSM-III-R [b] abuse or dependence	16.7%	24.1%	52.9% (119)
ICD-10 [c] dependence	0%	2.7%	10.7%
DSM-IV [d] abuse or dependence	5.6%	4.5%	17.2%

a. $\chi 2 = 24.047$ with 2 df, $p<0.001$
b. $\chi 2 = 28.827$ with 2 df, $p<0.000001$
c. $\chi 2 = 7.563$ with 2 df, $p<0.02$ (low cell size)
d. $\chi 2 = 10.460$ with 2 df, $p<0.05$

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Table 4: Index Psychopathology

Level of Risk	Low-Risk (n=18)	High-Risk: Non-excessive Drinkers (n=112)	High-Risk: Excessive Drinkers (n=122)
Risk Score[a]	0.09 ± 0.05	0.4 ± 0.02	0.5 ± 0.02
DSM-III Diagnoses			
Panic disorder[b]	5.6%	0%	0.8%
Phobic disorder[c]	16.7%	2.7% (111)	6.6%
Panic/phobic disorder[d]	22.2%	2.7% (111)	7.4%
Tobacco use disorder[e]	5.6%	26.8%	45.4%
Anti-social personality	11.1%	9.8%	16.4%
Major depression	5.6%	0%	5.7%
Any drug use disorder	0%	3.6%	9.1%

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Table 4: Index Psychopathology (cont.)

Level of Risk	Low-Risk (n=18)	High-Risk	
		Non-excessive Drinkers (n=112)	Excessive Drinkers (n=122)
Antisocial behavior			
Childhood conduct Symptoms[f]	1.7 ± 0.5	2.3 ± 0.2	2.5 ± 0.2
Adult ASP Symptoms[g]	1.2 ± 0.5	1.5 ± 0.2	2.6 ± 0.2
Total symptoms[h]	2.9 ± 0.8	3.6 ± 0.3	4.7 ± 0.3

a. F = 28.16 with 2,249 df, p<0.0001

b. X2 = 6.081 with 2 df, p<0.05 (low cell size)

c. X2 = 6.167 with 2 df, p<0.05 (low cell size)

d. X2 = 10.288 with 2 df, p<0.006

e. X2 = 16.095 with 2 df, p<0.001

f. F = 1.24 with 2,249 df, p<0.2901

g. F = 10.50 with 2,249 df, p<0.001

h. F = 4.05 with 2,249 df, p<0.02

Table 5: Predictors of DSM-III-R alcoholism at followup

Analyses of Maximum Likelihood Estimates Full Model (N = 247)

Variable	df	Parameter Estimate	Standard Error	Wald χ^2	P > χ^2	Odds Ratio
Intercept	1	-1.8373	0.3614	25.8475	<0.0001	-
Race	1	0.8828	0.3271	7.2823	0.0070	2.418
Excess drinking	1	1.0660	0.3022	12.4390	0.0004	2.904
Marijuana	1	1.5985	0.6658	5.7650	0.0163	4.946
Fundamentalist	1	0.0296	0.3488	0.0072	0.9325	1.030
Tobacco disorder	1	0.2310	0.3055	0.5718	0.4496	1.260
Phobic/panic	1	0.5295	0.6070	0.7160	0.380	1.698
Risk group	1	-0.4321	0.7070	0.3739	0.5409	0.649

Table 6: Final Predictors of DSM-III-R alcoholism at followup

Analyses of Maximum Likelihood Estimates Final Model (N = 247)

Variable	df	Parameter Estimate	Standard Error	Wald χ^2	P > χ^2	Odds Ratio
Intercept	1	-1.7695	0.3015	34.4444	<0.0001	-
Race†	1	0.8414	0.3118	7.2848	0.0070	2.320
Excess drinking	1	1.1878	0.2864	17.1946	<0.0001	3.280
Marijuana	1	1.5863	0.6560	5.8493	0.0156	4.886

† Only Caucasians and African-Americans.

Figure 1. Distribution of Low Risk Factors

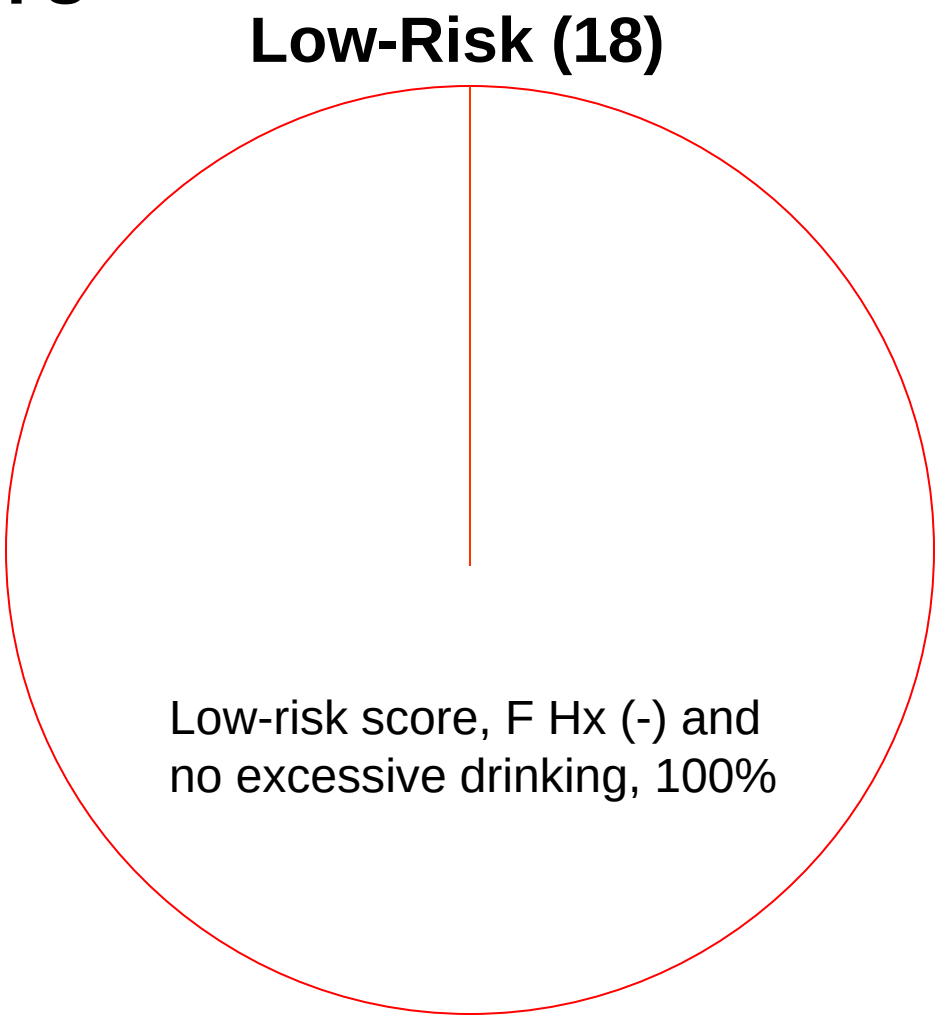
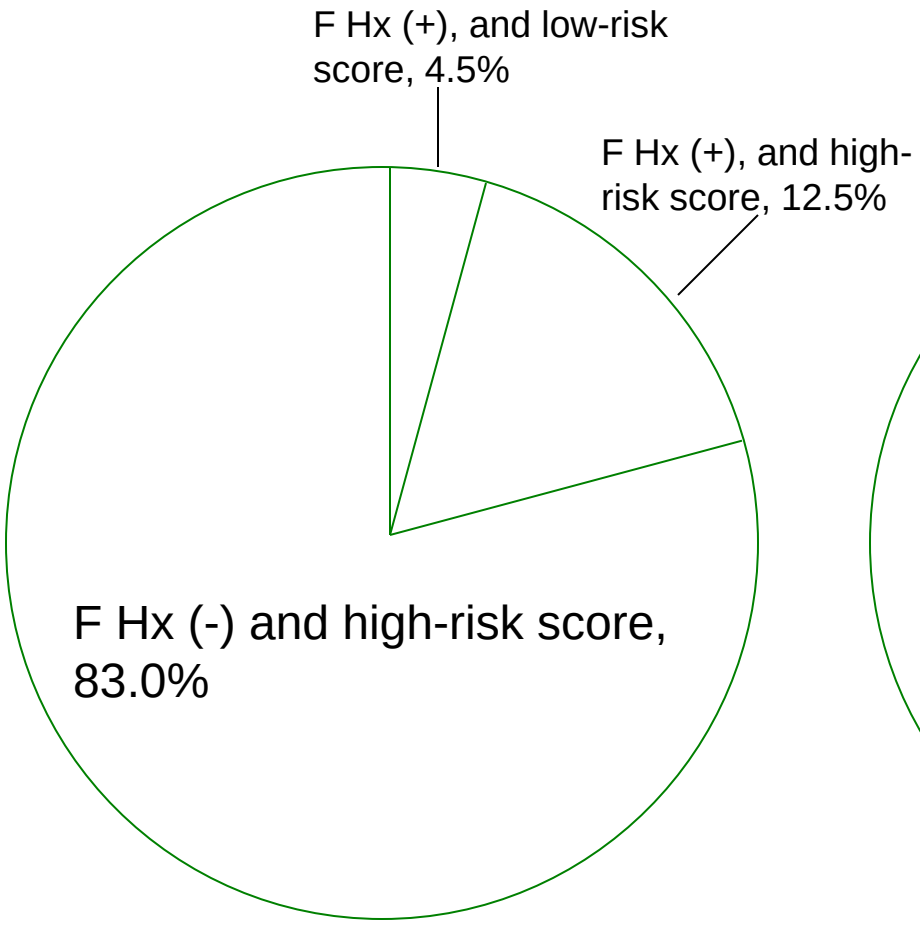
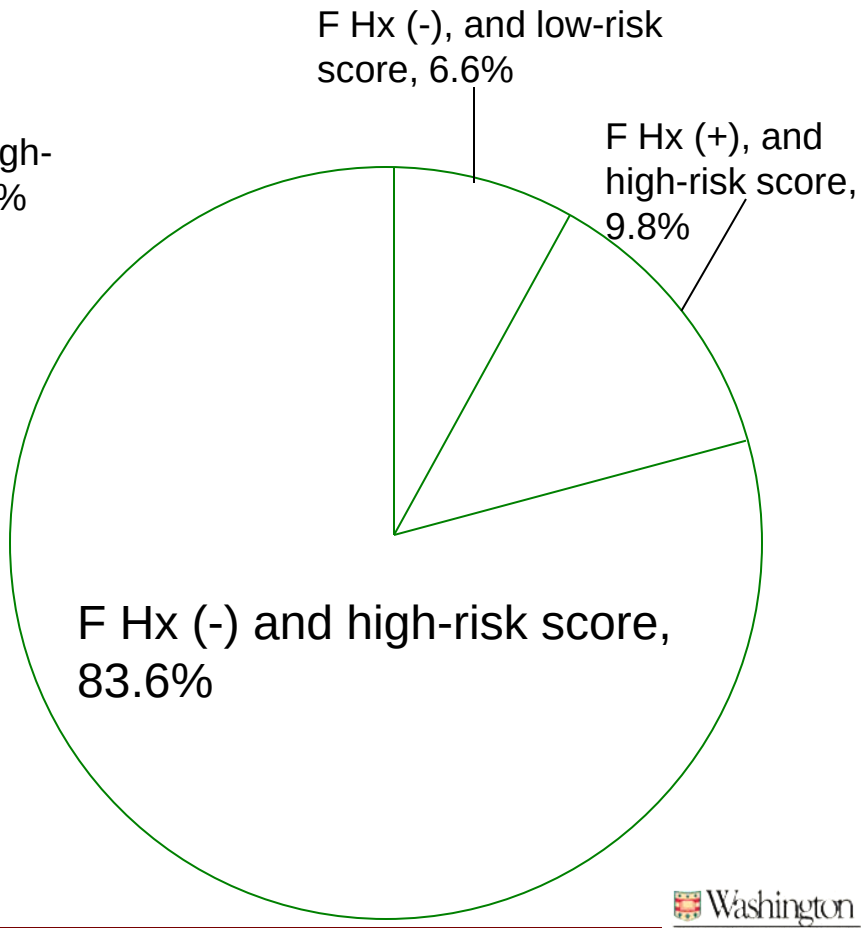


Figure 2. Distribution of High-Risk Factors

Non-Excessive (n=112)



Excessive (n=122)



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