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Collins E. Lewis

Kathleen K. Bucholz

Jihong Liu

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

Collins E. Lewis, MD
Kathleen K. Bucholz, PhD
Jihong Liu, MS

Support: AA08752, AA10333, AA11998

Equity interests: None

Consulting: None

Speakers' Bureau: None





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% (17) | 43.4% (99) | 54.6% (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% | 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 $X^2 = 5.832$ 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, $p < 0.05$



Table 4: Index Psychopathology

| Level of Risk | Low-Risk | High-Risk | |
|------------------------------------|-------------|--------------------------------|----------------------------|
| | (n=18) | Non-excessive Drinkers (n=112) | 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 follow up

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 follow up

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

Low-Risk (18)

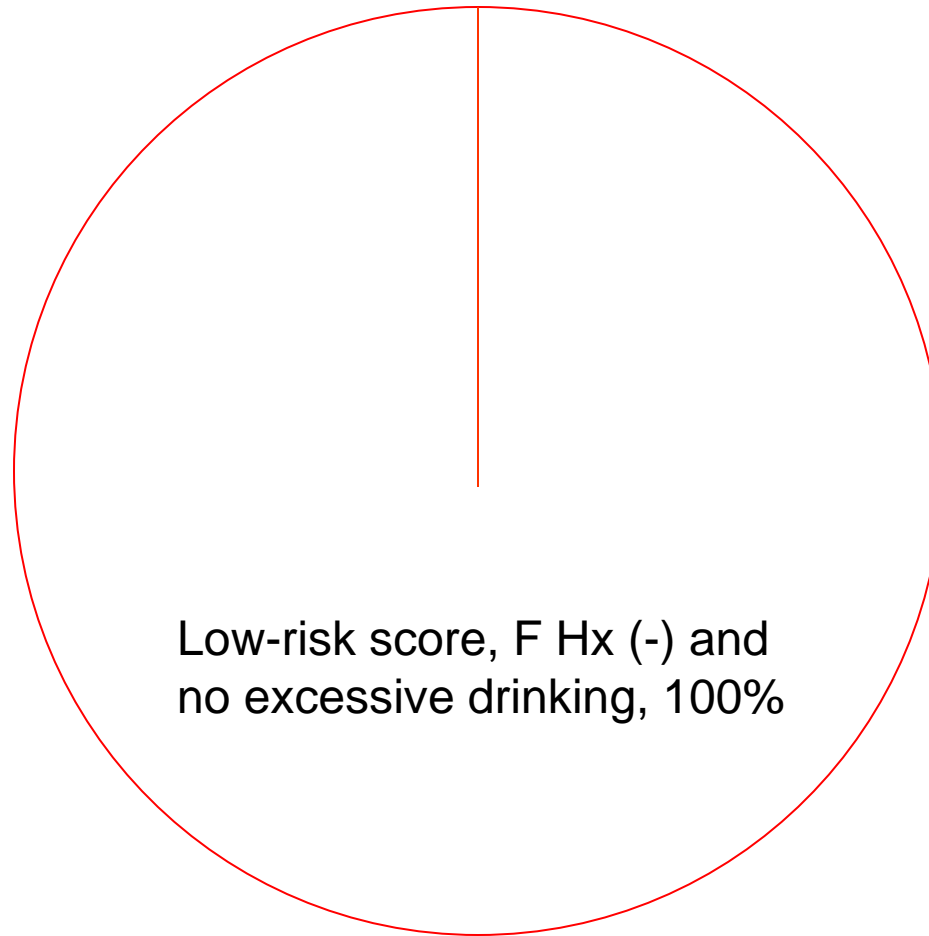




Figure 2. Distribution of High-Risk Factors

Non-Excessive (n=112)

Excessive (n=122)

