Determinants of Substance Abuse in Adolescence and Early Adulthood

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Introduction

Substance abuse is identified as a paramount public health problem due to its linkage with subsequent negative health and social outcomes. Research has documented the association between adverse childhood experience and substance abuse (Dube et al., 2003; Sartor et al., 2006). However, the determinants of the onset of substance use and progression to substance abuse are not well known. Not much empirical evidence shows whether there are different factors related to the onset and drug dependence in a developmental framework. The goal of this study is to identify antecedent factors in childhood and adolescent predicting the onset and substance abuse by age 26.

Research Questions

❑ What are the factors that predict the incidence of substance abuse at age 26?

❑ What are the factors that predict the age of first substance use?

❑ What are the factors that predict the time from first substance use to substance abuse (dependency)?
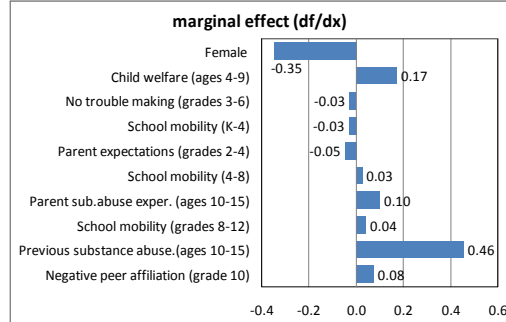
Sample and Data

Data were drawn from the Chicago Longitudinal Study, an ongoing project investigating the effects of the Child-Parent Center preschool program (CPC) on the educational/social development of low-income minority children into adulthood. The original sample (n=1,539) included 989 children who entered the CPC preschool program and 550 children who participated in alternative government-funded programs in the Chicago Public Schools. The sample size of the current study is 1,208 (78.5% of the original sample).

❑ Outcome measures

▪ Substance abuse is a dichotomous variable which indicates any self-reported substance abuse treatment or personal substance abuse problems for age 16 and above (smoke marijuana almost every day or use drugs harder than marijuana a few times per week or more) or any convicted drug arrest over age 16 from official records (e.g., conviction for drug possession, DUI, etc).

▪ Age of first substance use is a continuous variable created by using self-report information and official drug use records.

❑ Explanatory factors

▪ Demographic (gender and race), early childhood (family risk factors and CPC participation), childhood (school age intervention, family and home environment risk, parent expectations, parent substance abuse, child's socio-emotional and cognitive factors, and school variables), adolescent (school dropout and mobility, personal substance abuse experience, and negative peer affiliation).
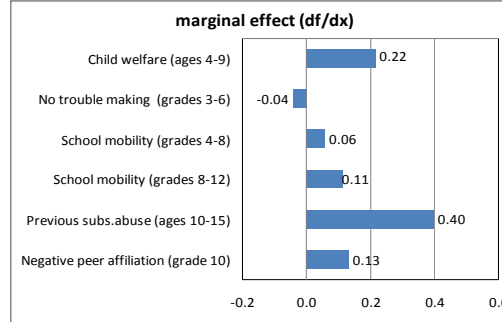
Result 1 Factors predicting substance abuse in early adulthood

Factors predicting substance abuse by age 26 for the overall sample (probit regression)
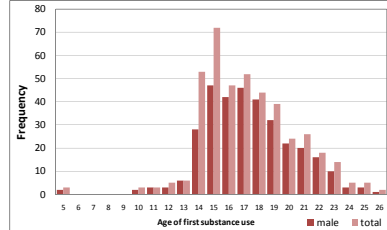

For the overall sample, the variables depicted in the graph above are associated with a change in the likelihood of having substance abuse problems by age 26 (p < .05).

Factors predicting substance abuse by age 26 for male group (probit regression)
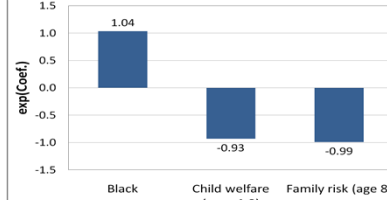

For the male sample, the variables depicted in the graph above are associated with a change in the likelihood of having substance abuse problems by age 26 (p < .05).

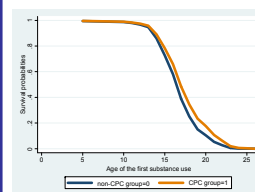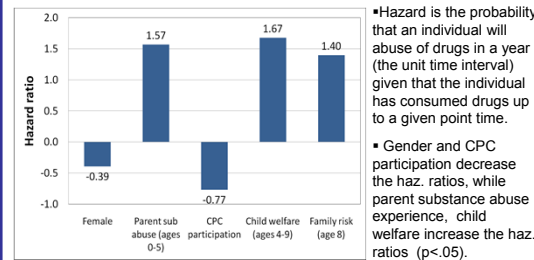## Result 2 Age of first substance use

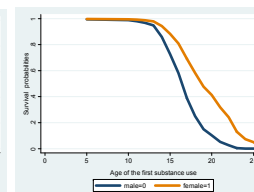### Factors predicting the age of first substance use (Zero-inflated negative binomial regression)

The expected age of first substance use would decrease by .93 (≈11 months) for each unit increase in child welfare eligibility. The expected age of first substance use would decrease by .99 (≈ 12 months) for each unit increase in family risk.

Result 3 Factors predicting the time from first substance use to substance abuse

▪ Hazard is the probability that an individual will abuse of drugs in a year (the unit time interval) given that the individual has consumed drugs up to a given point time.

▪ Gender and CPC participation decrease the haz. ratios, while parent substance abuse experience, child welfare increase the haz. ratios (p<.05).

CPC preschool participants had a lower hazard of having substance abuse problems by age 26 than non-CPC participants.

More females "survived" to the temptation of becoming a substance abuser. The opposite occurred for males.

Conclusions

❑ Substance abuse is primarily determined by individual factors (trouble making behavior, school mobility and dropout), family factors (child welfare eligibility and parent expectations), peer factors and personal/ parental experience of substance use/abuse during participant's school age (8 to 15).

❑ 88.1% of substance abusers were males.

❑ 34.4% of substance users have already consumed drugs by age 15. Age of first substance use is associated with factors that occur early in life (ages 0 to 9), such as child welfare eligibility and family risk (e.g., single parent, neighborhood poverty, and free lunch eligibility, etc).

❑ Parent substance abuse experience, child welfare eligibility, and family risk factors predict an increased likelihood of the onset of substance use to substance dependency. Otherwise, being female and CPC participation decrease the likelihood of progression from substance use to substance dependency.

Implications

❑ The sample in this study is representative of low-income minority children living in urban areas.

❑ The timing for practitioners to prevent the onset of substance use and progression to substance abuse is early in life (ages 4 to 9).

❑ Providing supportive services for families to improve their disadvantaged situations would reduce the children's risk of early onset of substance use.

❑ School factors (e.g., school mobility and trouble making behavior) could be indices to target children at risk of substance abuse and in need of prevention/intervention services. Reducing mobility rates or providing transition services and engaging children in pro-social in schools might decrease the risk of substance dependency.

❑ Males might be at greater risk of substance abuse and could be targeted for drug prevention/intervention while they are eligible for children welfare services and have higher behavioral problems, school mobility, personal substance abuse experience and negative peer affiliation.

Main References

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Sartor C. E., Lynskey, M. T., Heath, A. C., Jocob, T., & True, W. (2006). The role of childhood risk factors in initiation of alcohol use and progression to alcohol dependence. Addiction, 102, 216-225.
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