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ABSTRACT

Substance abuse among adolescents continues to be a serious problem and a national concern. Most of the research on family correlates of substance abuse has been conducted with teenage addicts and has consisted primarily of reports obtained from the substance abusing adolescent only. This study attempted to identify clusters of family variables that may be causally related to adolescent substance abuse. Data were collected from 154 parents who represented 116 families of middle and high school students identified at high risk of substance use. Family support, communication and conflict intensity, parental coping styles, substance use, health status, life stress, and attitudes towards adolescent substance use were assessed from the parental perspective. The relationship between these family variables and substance use reported by the adolescent was investigated. A statistical model was developed to more fully elaborate the precise relationships between various family characteristics and adolescent substance use. The most striking effect in these models was the combined role of parental and sibling alcohol use, supporting hypotheses about the role of modeling, facilitation, and lack of negative consequences as contributors to adolescent substance use. Findings emphasize the importance of family factors as predictors of adolescent alcohol use. (ABL)

Family Variables and Alcohol Use in High Risk Adolescents

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Introduction

Substance abuse among adolescents continues to be a serious problem and a national concern. The 1987 National High School Senior Survey (National Institute on Drug Abuse, 1987) with a sample of approximately 16,300 students from across the nation indicates that nearly one-fifth (18.7%) of high school seniors are daily smokers, 5 percent are daily drinkers, and 3 percent are daily marijuana users. More than 37 percent of the respondents reported at least one occasion of heavy drinking (five or more drinks in a row) in the two weeks prior to the survey.

The negative consequences of adolescent substance use have been extensively documented as well. The potentially lethal effects of many of the lesser used illegal substances are well-known, however even the most frequently used substances (i.e., tobacco, alcohol, and marijuana) have been found to have negative effects. Excessive use of alcohol in adolescents has been related to belligerence, accident proneness, impaired school performance, and problems involving the law resulting from impaired behavioral controls (Cohen, 1981). Forty-five percent of fatal automobile accidents and 40% of suicides among teenagers involve alcohol (Forrest, 1983).

Family factors that have been found to be related to substance abuse include family cohesiveness and communication patterns (Barnes, 1984; Donovan & Jessor, 1978; Jessor, Jessor, & Finney, 1973; Jurich, Polson, Jurich, & Bates, 1985). Drug-abusing adolescents report having little impact on family processes and feeling little closeness with their parents. These families are characterized by a lack of love and minimal support for their members, and as a result, the drug user's needs for recognition, love, and trust go chronically unfulfilled. The drug user typically turns to friends to meet these needs, becoming increasingly peer oriented. This atmosphere of disengagement and mutual rejection is further exacerbated by the inadequacy of parental role performance, as they generally are slow to adapt to changing demands (Jurich et al., 1985). Additionally, parent-adolescent interactions are typically poor, and the adolescents place little value on parental advice (Barnes, 1984). Parents also do not press communication with their offspring in order to avoid hearing anything negative (Jurich et al, 1985).

One of the most important social factors affecting substance use and abuse in adolescents is the influence of the family. Families of adolescent drug addicts are

often characterized by a triadic pattern of relationships with one over-involved parent and one punitive or distant parent. Parents of adolescent drug users have been found to be more flexible in their roles than parents of nonusers. The parent-child relationships in these families appear more disrupted than relationships between non drug-using adolescents and their parents (Glynn, 1984).

Parents of drug users differ from nonuser's parents in parenting styles and discipline practices (Hunt, 1974; Jurich, Polson, Jurich, & Bates, 1985; Loeber & Dishion, 1983; Smart, Gray, & Bennet, 1978). Families of drug users and abusers typically have a larger number of discipline problems than nonusers (Jurich et al, 1985). Parents of drug users tend to make use of either authoritarian or laissez-faire disciplining styles, while parents of non-users discipline with a democratic style. Parents employing a laissez-faire disciplining style report that they removed all controls so as not to impose their values on their adolescent. The drug users, however, report that, although their parents granted them autonomy, they were also hostile and indifferent toward them (Jurich et al, 1985).

Many of the pressures affecting the adolescent drug

abuser are the result of marital conflicts between the father and mother. Many of these families end in divorce, so it is not surprising that a significant relationship has been found between broken homes and drug use, alcoholism, and addiction. Research also suggests that father absence is especially harmful to males who become drug abusers. In these families, a high degree of stress is generally produced as unstable intrafamilial relationships lead to faulty role learning, social maladjustment, and personal instability (Jurich et al, 1985).

Parents' problem-solving styles may serve as models for the ways in which children cope with their problems (Bowker, 1976; Cohen, 1976). Some have speculated that parental coping styles involving escape or substance use may be causally related to teenage substance use via modeling processes. The drug-using parent provides a poor model to demonstrate coping with daily stress. In the absence of coping skill learned from their parents, children may model parental coping strategies, that is, reducing anxiety through drug usage (Jurich et al, 1985). Several empirical studies provide support for this hypothesized causal relationship between parental and adolescent substance use (Kandel, 1982; Smart, 1976; Stacey & Davies, 1970), and some existing

evidence indicates that modeling may be most influential at the outset of adolescent drug use (Smart, Gray, & Bennett, 1978).

Most of the research on family correlates of substance use has been conducted with teenage addicts and has consisted primarily of reports obtained from the substance abusing adolescent only. Rarely have family characteristics been assessed from the parent's point of view. The current study was designed to identify clusters of family variables that may be causally related to adolescent substance use. Family support, communication and conflict intensity, parental coping styles, substance use, health status, life stress, and attitudes toward teen substance use were assessed from the parental perspective. The relationship between these family variables and substance use reported by the adolescent was investigated. Drawing on the findings of previous empirical investigations and popular theory, a statistical model was developed to more fully elaborate the precise relationships between various family characteristics and adolescent substance use.

Method

Data were collected from 154 parents (representing 116 families) of middle and high school students

identified as at high risk for substance use. High risk was defined as the presence of two or more of the following risk factors: excessive school tardiness, excessive absences, poor academic performance, low self-esteem, substance use in the family or peer group, frequent school discipline incidents, poor social skills, and high anxiety. The students were selected as part of a school-based prevention program and participated in a ten-week coping skills intervention designed to teach adaptive skills that the teens could implement to solve problems related to substance use and peer pressure.

Parents were contacted by mail to invite participation, with follow-up phone calls to those who did not respond to the mailings. Most parents completed the survey during an evening meeting at a local school, but a small number completed the assessment in their homes with a project interviewer. Participation was voluntary. Parents gave informed consent and were informed that their responses were protected by a Certificate of Confidentiality awarded to the project. Parents received $25 for participation.

Participants completed the following measures: (1) the Moos Health and Daily Living Scales (Moos,

Cronkite, Billings, & Finney, 1987) which measure factors related to health and social functioning, stressful live events, coping responses, social resources, and sociodemographic information; (2) Family Adaptability and Cohesion Evaluation Scale (FACES II) (Olson, Bell, & Portner, 1981) which is a measure of the extent of flexibility and connectedness in a family; (3) the Interaction Behavior Questionnaire (Prinz, Foster, Kent, & O'Leary, 1979), a 44-item instrument that assesses the degree of parent-child conflict in the family; (4) the Issues Checklist (Prinz et al, 1979), a 44-item measure of the intensity and frequency with which certain issues (money, sex, curfews, chores, etc.) are problematic in the home; (5) a substance use questionnaire (Oregon Social Learning Center, 1984) measuring the frequency and volume of parents' substance use; and (6) the Parents' Attitudes Toward Teen Substance Use questionnaire (PATTSU), a measure developed for this project to assess parents' attitudes about how their own substance use affects their adolescent and parents' perceptions about how much influence they have over their adolescent's involvement with alcohol and other drug use. The measure is scored over six empirically d rived factors. Test-retest reliability over one month ranged from a

low of .74 on one of the factors to a high of .89 on another. Scores on the PATTSU factors significantly differentiated high risk families from non high risk families (Linney, Forman, & Egan, 1989). Parental substance use was measured on a 10 point scale from "never tried" to "three or more times a day". Adolescent substance use was measured with a self-report 5-point scale with response categories ranging from "never use" to "use everyday".

The 116 families who participated in this study came from both rural and urban areas of central South Carolina and represent all socioeconomic levels. The students of these families were selected from 13 high schools and 16 middle schools in seven school districts in central South Carolina. The adolescents ranged in age from 11 to 17 years (M=14.4). Seventy-two percent were white, 22% were black, and 6% other ethnic background. The parents ranged in age from 28 to 70 years (M=41). Most of the parent respondents were married (72%), but 14% said they were divorced, 4% separated, 5% widowed, and 6% never married. Eight percent of the parents reported that they earned less than $7,000 per year, 8% between $7,000 and $9,999, 26% between $10,000 and $19,999, 16% between $20,000 and $29,999, 13% between $30,000 and $39,999, and 30% over

$40,000. Mothers made up 82%, fathers 9%, stepmothers 3%, stepfathers 1%, blood relatives 4%, and nonblood relatives 1% of the total sample. The demographics of this sample are not significantly different from the census data available for the greater metropolitan area.

The students represent a sample substantially at risk because of their low academic performance, discipline problems at school, and low self-concept as reported by school personnel. Students had, on average, four of the risk factors associated with substance use. Their rates of substance use were twice the rate of a nationally representative sample of 12-17 year olds conducted by the National Institute on Drug Abuse (Forman & Linney, 1989).

Results

The focus of the current study was to identify causal relationships between family variables and adolescent substance use. Previous empirical research and established theoretical models informed construction of a causal model of the effects of selected family factors on adolescent substance use. Although data was available concerning adolescent cigarette use, alcohol use, and marijuana use, alcohol use was selected to test the model, because of the high

rate of use in the sample and because it had sufficient variability to warrant inclusion in the model.

Figure 1 schematically illustrates the model constructed to test hypotheses about the effects of family stress and parental modeling on adolescent alcohol use. Specifically, it was hypothesized that increasing levels of family stress would contribute to increased use of alcohol by parents in these families (e.g., Jurich, Polson, Jurich, & Bates, 1985). Furthermore, this increase in parental alcohol use was hypothesized to result in higher levels of adolescent alcohol use via modeling effects (e.g., Urich et al, 1985; Kandel, 1982; Smart, 1976; Stacey & Davies, 1970). The relatively small sample size (N=116) restricted the number of variables which could be included in the model. Additionally, several possible constructs indicated by existing research (e.g., parental style) were not included because measures for these factors were not available with the present sample. Because the selected variables had little to moderate univariate skew and kurtosis, the model was tested using Lisrel VI maximum likelihood estimation procedure (Joreskog & Sorbom, 1986). The zero-order correlations for the variables are included in Table 1.

Insert Table 1 About Here

Model fitting proceeded by first estimating a saturated model, i.e., a model having zero degrees of freedom in which all possible paths are estimated. Next, paths that were not considered to be of theoretical importance and which were statistically nonsignificant were removed from the model in turn, by fixing them equal to 0, and the model's goodness-of-fit was re-estimated. Parameter significance levels were determined by means of a t-test calculated by dividing the parameter by its standard error. Parameters more than two standard errors from zero were considered significant and retained in the final model.

The best fitting model was one in which four paths had been fixed equal to zero ($\underline{X}^2(4, N=116) = 6.02$, $\underline{p} = .20$). The model, which is diagrammed in Figure 1, indicates that family stress had a strong direct effect on use of helping services and a lesser effect on parent alcohol use. Family stress and use of helping services did not directly effect either sibling or adolescent alcohol use. The strongest determinants of adolescent drinking behavior were parent and sibling alcohol use, which accounted for 37% of the variance in

adolescent alcohol use, with sibling use seeming to be somewhat more influential.

Figure 1 About Here

From this model, it is evident that parent and sibling alcohol use are important determinants of the level of alcohol use by the adolescent. Thus, the hypothesis that modeling plays a significant role in adolescent alcohol use was supported. Additionally, the model suggests that parent alcohol use seems to be affected by other family variables. For example, family stress appeared to have a direct effect on parent alcohol use. Parent use of helping services also had a direct effect on parent alcohol use.

Because of the important role of parent alcohol use on adolescent use, a model was constructed (using the same procedure mentioned above) to further elaborate the relationship between family variables and parent alcohol use. The best fitting model was one in which five paths had been fixed equal to zero ($\underline{X}^2(5, N=116) = .31$, $\underline{p} = .998$). The model, diagrammed in Figure 2, indicates that income, family stress, and level of parents' depression have positive direct effects on parental alcohol use, with income being the

most influential. Taken together, these three variables accounted for 15% of the variance in parental alcohol use. The positive direct effect of income suggests that there may be some patterns of drinking related to lifestyle (e.g., the "two-martini lunch", having wine with dinner) contributing to parental alcohol use in this sample. The model further suggests that higher income is related to lower levels of family stress and conflict. Family stress, in turn, has a direct effect on parent alcohol use. Levels of family conflict appear to be causally affected by income and marital satisfaction, with lower income and lower marital satisfaction causing higher levels of conflict. Parental depression has a direct positive effect on parental alcohol use. Lower levels of marital satisfaction and higher levels of family stress and conflict all tend to lead to higher levels of parental depression.

Discussion

The most striking effect in these models is the combined role of parental alcohol use and sibling use supporting hypotheses about the role of modeling, facilitation, and lack of negative consequences as contributors to adolescent substance use. The second model explaining parent alcohol use is consistent with

previous notions regarding the role of family distress on alcohol use. In this model, family conflict, stressful events, marital disatisfaction, and parental depression are indices of family distress.

The direct effect of income on parent alcohol use is also important to note. Most previous research has implicated lower levels of income as a cause of alcohol use. Much of this work has included samples at high risk because of low income, hence any relationship between higher income levels and alcohol use would not be identified. The present study selected a high risk sample on the basis of behavioral correlates rather than demographic variables, and income level varied quite widely.

These findings emphasize the importance of family factors as predictors of adolescent alcohol use. The findings are especially noteworthy because of the early stages of substance use characterizing the sample Much of the previous research in this area has examined family factors in adolescent addicts or alcoholics. The causal sequencing of family distress and adolescent substance use is almost impossible to disentangle when the sample includes only addicts. The present sample includes youth displaying the behavioral correlates of substance use and self-reported levels of alcohol use

ranging from not at all to a few times a week. The models offer support for the causal role of parental modeling on adolescent alcohol use. The model explaining parental alcohol use suggests several causal pathways, one reflecting a lifestyle with regular patterns of alcohol use, and a second in which stress and distress contribute to increased parental alcohol use.

These data have several implications for preventive intervention. Efforts to help family members cope with stressful life events and conflict may reduce their negative effects for the family. Parents need to become more aware of the powerful modeling effects their own drinking has on their adolescent. Parental use of alcohol may not only model use, but also communicates attitudes about alcohol use that minimize barriers and the negative consequences of adolescent substance use.

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Table 1
Zero-Order Correlations for Model Variables

	ADOLDRNK	PARDRNK	SIBDRNK	CONFLICT
ADOLDRNK	-	.36	.55	.01
PARDRNK		-	.22	-.04
SIBDRNK			-	.19
CONFLICT				-
DEPRESSION	.02	.16	.07	.28
HELPSERV	.20	.27	.09	.05
STRESS	-.03	.23	-.09	.04
MARSATIS	-.02	-.07	-.13	-.26
INCOME	.24	.29	.04	-.24

	DEPRESSION	HELPSERV	STRESS	MARSATIS	INCOME
DEPRESSION	-	.31	.29	-.44	-.11
HELPSERV		-	.41	-.11	.10
STRESS			-	-.16	.01
MARSATIS				-	.11
INCOME					-

Figure 1

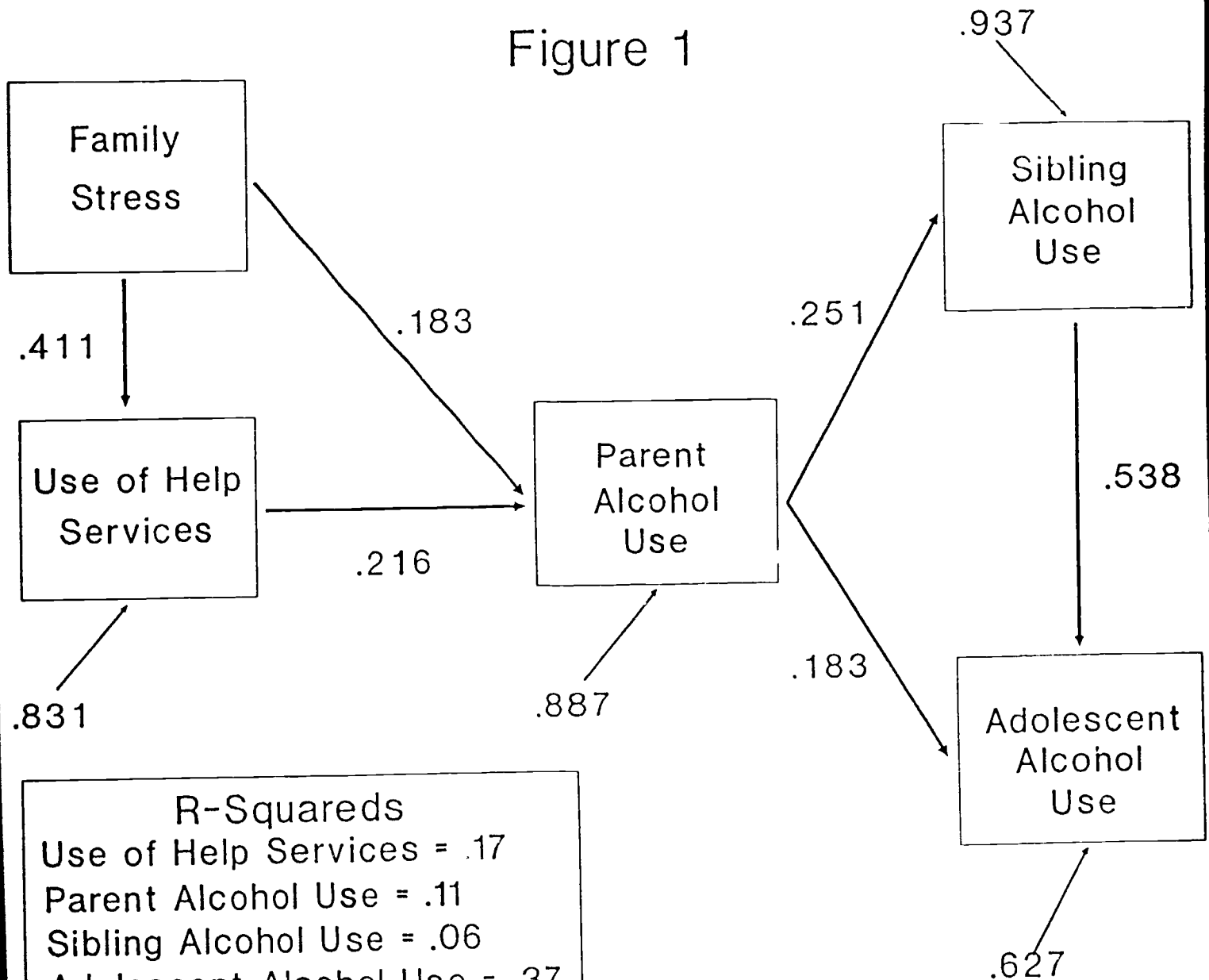
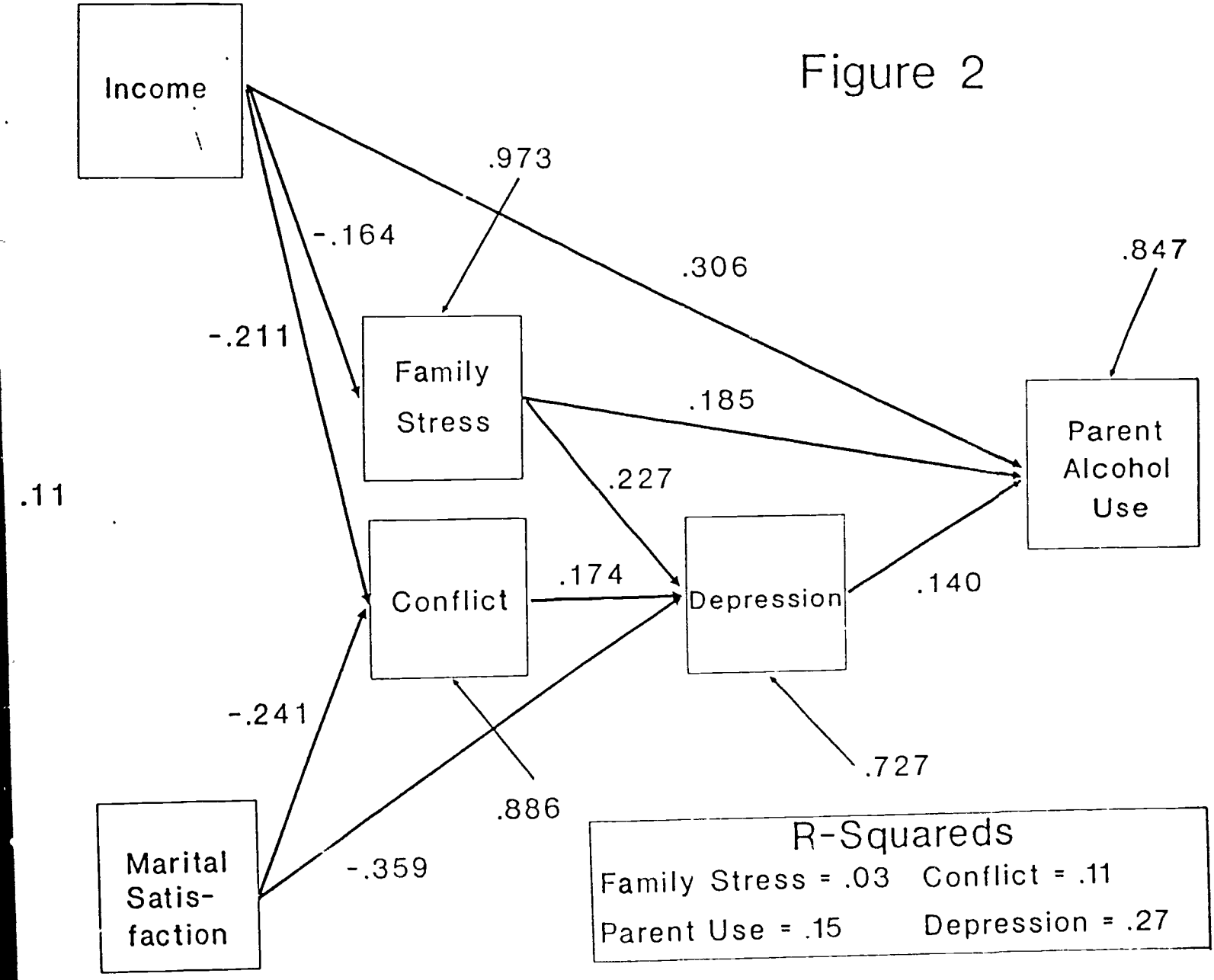

Family Stress
Use of Help Services
Parent Alcohol Use
Sibling Alcohol Use
Adolescent Alcohol Use
.411
.183
.216
.251
.538
.183
.831
.887
.937
.627
R-Squareds
Use of Help Services = .17
Parent Alcohol Use = .11
Sibling Alcohol Use = .06
Adolescent Alcohol Use = .37

Figure 2


Income
.973
-.164
.306
.847
-.211
Family Stress
.185
Parent Alcohol Use
.11
.227
Conflict
.174
Depression
.140
-.241
.727
.886
Marital Satis-faction
-.359
R-Squareds
Family Stress = .03
Conflict = .11
Parent Use = .15
Depression = .27