

Drug, Alcohol and Tobacco Use in Rural, Low-Income Families: An Ecological Risk and Resilience Perspective

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ABSTRACT

This article sets a context for researchers, practitioners and policymakers for prevention and treatment of substance use among rural, low-income families. To increase understanding of the specific needs of families in rural communities, the authors use an emerging theoretical framework which combines the ecological model with a risk and resilience theoretical framework. Results of an exploratory study using data from a national sample of rural, low-income mothers are provided. Among those mothers, working several jobs correlates with drug problems, alcohol problems, and tobacco use as does poor knowledge of community resources, low satisfaction with life, and high levels of depressive symptoms.

INTRODUCTION

While substance abuse may once have been concentrated in urban areas, research shows that it is now as common in rural areas as it is in cities (Booth, Bildner, & Bozzo, 2001; Clark, Leukefeld, & Godlaski, 1999; Hartley, Bird, & Dempsey, 1999; Kearns & Rosenthal, 2001; National Center on Addiction and Substance Abuse, 2000). Researchers attribute the rise in rural substance abuse to the economic tragedies of farm failure and a national debt that has changed rural existence (Kelleher & Robbins, 1997). In the late 1990s, a quarter of the U.S. population lived in non-metropolitan or rural areas with high rates of poverty, substandard housing, and lower educational attainment. These risk factors increase the chances that family members will engage in negative behaviors such as problem drinking, drug abuse, and tobacco use (Booth, Bildner, & Bozzo, 2001; Conger, 1997; National Center on Addiction and Substance Abuse, 2000; Wagenfeld, Murray, Mohatt, & DeBruyn, 1997).

Indeed, the rates of drug, alcohol, and tobacco use for adults are about the same in rural towns, mid-size cities, and large urban centers. The rates of use for teens are even higher in rural areas than in urban centers (National Center on Addiction and Substance Abuse, 2000). While the rates of use in urban and rural areas are similar, research on prevention and treatment remains oriented to the needs of individuals in urban areas. But rural residents have different service needs than their urban counterparts and face specific barriers to service provision (Kearns & Rosenthal, 2001).

Effective substance abuse prevention and intervention requires both theory and empirical evidence upon which to base program and policy decisions. Few studies have examined rural, low-income families from a risk perspective. Vandergriff-Avery, Anderson, & Braun (2004), based on a dissertation by Vandergriff-Avery (2001), used family stress and family resiliency frameworks to guide the study of rural, low-income Maryland mothers. They used the definition of family resiliency as family characteristics, dimensions, and properties that help families resist disruptions in the face of change and adapt in the face of crises. The authors recommended that practitioners working with rural, low-income families recognize the internal family protective and recovery factors specific to the rural poor to better help these families cope with stressors

and crisis events. The study reported here was conducted to explore drug, alcohol and tobacco use among rural, low-income families through the lens of an integrated framework of ecology and resiliency.

Focus of the Article

The purpose of this exploratory study was twofold: 1) to describe the barriers to substance abuse services as a basis for improving programs and policies and reducing risk among rural families using an integrated theoretical model; and 2) to investigate the risk factors for substance abuse among a sample of rural mothers and their families. Both the model and the findings can be used to expand the body of knowledge and demonstrate needs among rural, low-income families for substance abuse-related mental health services. Researchers, policymakers and practitioners can gain a greater understanding of the risk factors presented by rural families at the individual, family, and community levels and use the results as a basis for service response.

One main research question guided this study: *What risk factors are associated with drug, alcohol, and tobacco use among rural mothers and their families?* A theoretical framework of ecological risk and resilience, which connects risk factors to individuals and their environments, guides this exploratory, empirical research. Examining the experiences of low-income, rural families through the framework of ecological risk and resilience provides practitioners and future investigators with a model for better understanding the needs of this population.

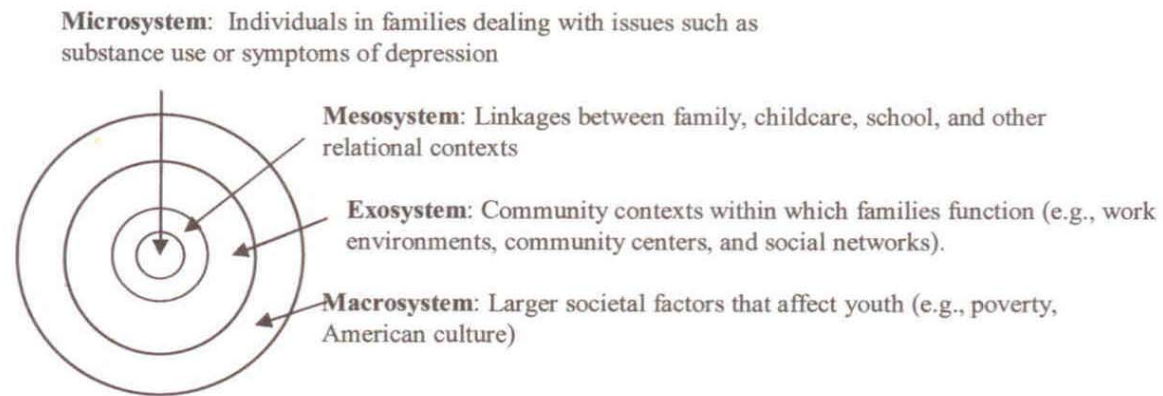
An Ecological Risk and Resilience Perspective

The theoretical model chosen to ground this research combines ecological theory with a risk and resiliency framework. The ecological model highlights the interaction between individuals and their environments. The resiliency framework focuses on risk and protective factors. As applied to the current study, the theory holds that independent variables (e.g., satisfaction with life, number of jobs, monthly income) that influence risk or resiliency will influence or explain the dependent variables of drug, alcohol, and tobacco use. For clarity, the ecological model and the resiliency model are briefly described as distinctive theoretical frameworks and then as a combined model.

The Ecological Model Applied to Low-income, Rural Families

A central argument of the ecological approach, developed by Urie Bronfenbrenner in the late 1970s, is that a person develops within the context of his or her relationships (Bronfenbrenner, 1979). This development is the composite of individual genetic endowment, immediate family influences, and other components of the environment (Klein & White, 1996). According to the ecological model, the individual is embedded in four subsystems that can be understood with the diagram in Figure 1.

Figure 1. Bronfenbrenner's Ecological Model of Human Development



The innermost circle represents the microsystem of individuals within which individuals deal with personal matters of health and well-being. It is here that living conditions affect quality of life, access to, and use of substances in response to those conditions and other attitudes and behaviors. It is in the microsystem where personal and environmental risk factors and protective factors influence outcomes.

For rural families, one condition affecting their well-being is poor mental health. According to Hauenstein (2003), 41% of rural women using primary care screened positively for depressive symptoms. In a follow-up study, the author found that 67% of women drawn from the same sample had current major depressive disorder (MDD). Simmons and Havens (under review) found that rural participants in the National Comorbidity Survey were more likely to meet the criteria for comorbid past month drug or alcohol abuse or dependence if they met the diagnosis for past month MDD, generalized anxiety disorder (drug only), or lifetime antisocial personality disorder. These studies point to poor mental health as a risk factor for substance abuse.

The mesosystem incorporates linkages between settings where individuals live, work, attend school and participate in the community. These linkages include the extended family, peers, and helping professionals. For rural families, these linkages can be strong and supportive or barriers to quality of life. Earning family income requires not only availability of jobs and personal knowledge and skills but, for parents, availability of child care. The lack of adequate, affordable and accessible child care can be a risk factor contributing to reduced income and accompanying stresses of poverty.

Bauer and Braun (2002) noted that 50% of the mothers in the multi-state *Rural Families Speak* study were working, yet 70% received no publically-funded childcare assistance. Walker and Reschke (2004) found that informal care was frequently used because the cost of regulated care was too high. Families in the study, with at least one infant or toddler, had a median income of \$13,846 per year. Full-time, center-based care for this infant would consume 37% of the family

income. Thus for these families, the linkages with extended family provided a means for mothers to be employed and negotiate lower out-of-pocket costs for childcare arrangements. The next component of the ecosystem is the exosystem representing external environments--the existence of which may be unknown by family members. Yet, events that occur in these environments affect, or are affected by, what happens in the microsystem (Bronfenbrenner, 1979). According to Lynch and Cicchetti (2002), features of the community such as availability of services and employment, access to formal and informal support, and socioeconomic climate are part of the exosystem. More subtly, the mother's work environment affects the family if the mother "brings home" a positive or negative mood depending on activities in that environment. The social capital of the community that ties people to the community is an unseen, yet influencing factor that can be either a risk or protective factor. When the community lacks resources to support families, families make do or do without. When the community provides support services, families benefit.

Several studies from the *Rural Families Speak* study have examined the exosystem, particularly the relationship between the formal and informal social supports available in the communities where the families live and aspects of the quality of their lives. Kohler, Anderson, Oravec, and Braun (2004) found that the Maryland mothers in the study perceived their family members as being more supportive to them than friends and other non-family members. Braun & Marghi (2004) and Marghi (2004) determined that participation in a religious community was a key to life satisfaction and a source of social support among the multi-state mothers. This finding was further examined by Garrison, Marks, Lawrence and Braun (2005) in an analysis examining depressive symptoms. The authors found that support from a community of faith made a difference. Islam (2004) also found that the low-income, rural mothers in this study who had high levels of social support experienced lower levels of depression than the mothers with low levels of social support. Rudd (2003) isolated social support as the key to educational attainment of teenage mothers. Thompson (2003) conducted a qualitative analysis of the extent of use of community resources among the Maryland mothers. He found variability among the mothers in their knowledge of community resources, their use of those resources and in their opinions as to how they were treated when using the resources.

Finally, the macrosystem represents larger societal contexts not experienced in the immediate environment. Macrosystem influences differ for various socioeconomic, ethnic, religious, and other subcultural groups (Bronfenbrenner, 1979). In the United States, macrosystem influences include American culture and the social policies and programs that affect American families, such as childcare assistance and antipoverty programs. In the case of rural families, the changes in the farm economy of the 1980s, accompanied by changes in other rural-based industries such as mining and forestry, left rural communities reliant on service industries that pay low wages. This shift left a substantial number of families in poverty which in turn placed them at higher risk for problem behaviors such as drug, alcohol, and tobacco abuse (U.S. Department of Health and Human Services, 2002; Letvak, 2002).

Resiliency and Low-income, Rural Families

Ecological theory provides insight into the effects of individual, family, community, and larger societal level systems on individuals and families. Within each of these levels, there are risk factors that may negatively influence development and there are protective factors that may

foster resiliency--the ability to avoid or recover from stressors and crises. Research during the 1960s explored the existence of a relationship between stressful life events and illness. Stress and coping was the umbrella term chosen to study this relationship. Over time, researchers demonstrated that individual factors and family, peer, and community supports and risks came together to influence positive or negative outcomes. Stress and coping morphed into a risk and resilience framework as these researchers acknowledged the importance of studying how individuals actively cope with stress stemming from adversity, and the complexities of the relationships between multiple stressors and multiple outcomes (Haggerty, Sherrod, Garmezy & Rutter, 1994). McCubbin and McCubbin (1989) also studied the ability of certain families to cope with stressful events while others did not. They provided the family research field with the well-known family stress theory to study the strengths and resistance resources that some families use to endure hardships. The current risk and resilience framework has grown out of the work of these pioneering researchers.

According to Garmezy (1993), resilience is not invulnerability, but rather, the ability to bounce back under adversity. Similarly, Walsh (1998) notes that resilience is often erroneously equated with “invulnerability” or “self-sufficiency” yet, it is forged through interdependence with others. Models of resilience include a delineation of risk factors such as poverty, depression, and isolation, and protective factors, such as cognitive skill, family warmth, and church support (Garmezy, 1993; Garmezy & Rutter, 1983; Murry, Bynum, Brody, Willert, and Stephens, 2001). Poverty is a chronic stressor that places many rural families at-risk. According to Bokemeier and Garkovich (1991), financial instability “is enduring and intractable, its source or cause is difficult to identify, its course uncertain, and its consequences are far reaching” (p.115). For low-income, rural families, related risk factors include higher infant mortality, poor nutritional status and habits, limited education and vocational choice, absence of preventative health behaviors and health maintenance screenings, stress associated with high-risk environments, and potential for illicit drug use (Fox, Blank, Rovnyak, & Barnett, 2001). Vandergriff-Avery, Anderson, and Braun (2004) investigated protective processes used by Maryland participants in the *Rural Families Speak* study with substance abuse-related stress. The researchers found that some participants chose to reinterpret the crisis events as a recovery method. Others exited the situation or moved away to deal with a family member’s substance abuse.

According to Gore and Eckenrode (1994), protective factors may be classified into two groups: 1) personal factors and 2) environmental resources. Some personal factors are biological, such as health status and temperament, while others are linked to experiences in the social environment, such as self-esteem or self-worth. Environmental resources include family income or peer support. The personal factors that an individual brings to his or her environment are influenced by the objective features of that environment.

A rural mother and her family members experience a different social environment than a poor mother and her family in a more urban setting. In contrast to the urban poor, families in rural communities are likely to have less access to reliable cars and/or public transportation and may have a more difficult time sustaining employment or educational pursuits (U.S. Department of Health and Human Services, 2002; Kelleher & Robbins, 1997).

Ecological Risk and Resilience Model

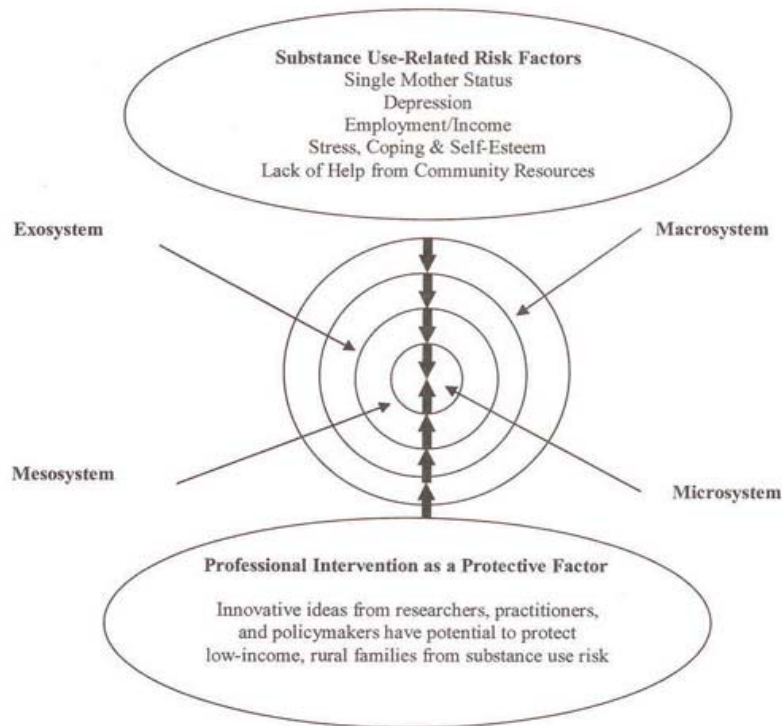
The ecological risk and resilience model is an emerging theoretical framework among family researchers (Maring, 2005; Murry et al., 2001). Few researchers have specified use of a combined ecological risk and resilience theoretical framework to organize their research. However, Bronfenbrenner (1986) refers his readers to important literature on resiliency. Researchers using a resiliency framework frequently cite Bronfenbrenner's work on human ecology as an important theory to complement research on resiliency (Gore and Eckenrode, 1994; Rutter, 1995).

According to the ecological model, a person's development is influenced by individual, family, community, and societal level systems (Bronfenbrenner, 1986). By combining the two theories, researchers and practitioners can examine both the influence on human development of individual, family, community and societal systems and the associated risk and protective factors. The efficacy of adopting an ecological risk and resilience model is suggested by the importance of both the individual's immediate environment and the larger cultural context in defining risk and protective factors.

Murry et al. (2001) used an ecological risk/protection conceptual framework specifically to organize research on African-American families. Their intent was to clarify links between risk and protective factors at the individual, family, and community levels. Their research examined challenges and strengths encountered by single-mother families from the micro to the macro level.

The researchers for the study reported here chose the integrated model to examine the risk factors that influence resilience within the specific ecological context of rural America. This integrated framework was chosen because both individual and environmental level systems influence factors that contribute to risk and resiliency. A partial model using data from the study explored in this paper, the *Rural Families Speak* study, is shown to illustrate the association between reported use of substances and risk factors of these mothers (See Figure 2). The integrated model displays risks associated with personal and environmental hardships (e.g., depression, income) in relation to families and the potential for protective factors in the community (e.g., trained practitioners in culturally competent treatment; drug, alcohol, and tobacco prevention/education programs and policies) that can help families cope with life conditions. By applying the ecological risk and resilience framework to a rural low-income population, the researchers intend to enhance understanding among researchers, practitioners, and policymakers regarding the mental health service needs, including drug, alcohol and tobacco use prevention and treatment among individuals and families in this understudied population.

Figure 2. Partial Ecological Risk and Resilience Model Applied to Substance Use Among Rural, Low-Income Families



Rurality and Associated Barriers to Service

One purpose of this paper was to describe barriers to substance abuse services as a basis for improving programs and policies, and reducing risk among rural, low-income families. Rural populations face four main barriers when they try to access mental health services. These barriers are magnified for families below the poverty line. They are, in effect, risk factors for substance use and abuse.

Transportation

Transportation issues affect all rural, low-income families. The lower population density in rural areas makes it difficult to provide accessible services. Therefore, rural families often have to travel long distances to get mental health services including substance abuse prevention and treatment programs. Public transportation in rural areas is scarce and often undependable. For low-income families who may not own a reliable vehicle or have other means of transportation, this barrier can pose an insurmountable challenge (Conger, 1997; Findlay & Sheehan, 2004; Fox et al., 2001). And for those who do own a vehicle, reliability and operation costs, especially for gasoline, significantly affect their ability to travel (Kearns & Rosenthal, 2001).

Shortage of Professionals

Rural communities have a shortage of mental health practitioners. Rural communities also have difficulty attracting trained substance abuse professionals, school nurses, and counselors. Those who do practice in rural areas are often trained for work with urban populations (U.S. Department of Health and Human Services, 2002). Rural families, therefore, use their primary care physician for mental health care. In a study of a rural impoverished population conducted by Fox et al. (2001), the majority of respondents (81.7%) stated that they would consider going to a physician for a mental health problem. Physicians in rural areas report that they commonly see patients with substance abuse issues. But physicians say they are apprehensive about treating people experiencing anxiety, depression, and substance abuse because, as family practitioners, they lack adequate training (Kearns & Rosenthal, 2001).

Stigmatization

The stigma associated with mental health inhibits rural residents from seeking help. Rural values emphasize privacy, self-reliance, conservatism, religiosity, and intolerance for deviance. These values impact attitudes toward healthcare. Unlike urban dwellers who can more easily remain anonymous, rural residents spend more time in direct contact with acquaintances who may judge their behavior (Kelleher & Robbins, 1997). In addition, rural residents tend to rely more heavily on family members for support than on professionals (Conger, 1997, Fox et al., 2001). Similarly, rural residents are suspicious of mental health services, including substance abuse services (Warner & Leukefeld, 2001).

Wise, Miller, and Preussler (2003) conducted a study of adults assessed and treated at the Farm Resource Center in the rural Midwest. Their findings revealed a relationship between depressive symptoms and alcohol and/or substance use. *However, most respondents did not report using any substance.* The authors noted that fear of stigmatization may affect participant reporting of substance use and suggested that primary care providers assess for alcohol and substance use in rural individual. They also recommended that professionals providing mental health services receive training in psychiatric assessment.

Lack of Awareness

Many rural residents are unaware that they have a mental health problem requiring assistance. As a result, they self-medicate with drugs, alcohol, or tobacco. According to Warner and Leukefeld (2001), norms and values in rural communities decrease the likelihood of formal treatment seeking and thereby impede the recognition of substance use or abuse as problematic. Robertson (1997) reported that over a third of patients admitted for general psychiatric care have drug abuse problems that either influence or precipitate their current mental health status. In another study, Robertson (1997) reported that approximately two-thirds of individuals seeking admission to substance abuse treatment programs presented with evidence of additional psychiatric problems.

Substance Abuse Research in Rural Communities

Research on Environmental Tobacco Smoke (ETS) shows that exposure to tobacco smoke represents a serious and substantial health risk to smokers as well as to passive victims such as children. Passive smoke is detrimental to children's cognitive abilities according to researchers who demonstrated that secondary smoke exposure among these children resulted in reduced scores on tests of math, reading, and visuospatial skills (Yolton et al., 2005). Kurtz, Kurtz, and Contreras (2004) conducted a study investigating an educational intervention to improve knowledge, attitudes, and prevention of ETS among low-income mothers. The smoking rate for women in this project was higher than the 1998 average for women in the state of Michigan (30.4% vs. 24.8%). The smoking rate for other adults in the household was 18.6%. Children lived in 96.7% of the homes placing a large percentage of them at risk for lung cancer, heart disease, and respiratory diseases. Results suggested that incorporating ETS education can promote healthier behaviors and lifestyles for low-income women and their children (Kurtz, Kurtz & Contreras, 2004).

Research also demonstrates that mental health and addiction are often related to one another (Simmons & Havens, under review, Wise, Miller & Preussler, 2003). Simmons and Havens (in press) studied the relationship between rurality and comorbid mental health and substance abuse or dependence disorders. The authors found that rural individuals were more likely to meet the DSM-III-R criteria for past month drug or alcohol abuse or dependence if they also met the diagnostic criteria for a mental disorder. Using the National Comorbidity Survey, multivariate analyses were used to compare rural (n=532) and urban (n=4,653) individuals. Findings indicated the need for research specifically focused on rural families and comorbid mental health and substance abuse disorders.

The relationship between depressive symptoms and alcohol/substance use was also the subject of a study of 1,191 adults assessed and treated in the rural Midwest. Wise, Miller, and Preussler (2003) used a case controlled design where participants were classified into four groups: no reported use, alcohol use only, another substance only (excluding tobacco), or both alcohol and another substance. The majority of participants were Caucasian; 2.2% were African-Americans. Two-thirds were unemployed. The most commonly reported presenting problems were personal/emotional problems and financial problems. Participants also reported employment, family, health, and marital problems. Those who did not report using substances scored significantly lower on the depression scale compared to those who reported using and those reporting using both alcohol and another substance group.

Wise, Miller, and Preussler (2003) discuss an important limitation to their study which applies to much of the research on rural families and substance abuse. Of the 1,191 participants in their study, *few reported using any substance*. For those who did report use, most reported only using alcohol; using both was second. The least number of participants reported using another substance without alcohol. While the study found that those who reported using alcohol and/or other substances had higher levels of depression than those who reported not using substances, the authors speculated that fear of stigmatization affected reporting of substance use.

METHODS

A second purpose of this paper was to investigate the risk factors for substance abuse among a sample of rural mothers and their families. The participants in this exploratory study are part of a multi-state research project entitled: “Low-income Rural Families: Tracking the Well-Being and Functioning in the Context of Welfare Reform.”¹ The project is known as *Rural Families Speak*. It is a longitudinal, mixed-methods study of the well-being of rural, low-income families from the perspective of mothers. Three waves of data were collected beginning in 1999-2000 through 2003. In Wave 1, 414 mothers, with 964 children, living in 24 rural counties in 14 states participated. Data for this analysis came from Wave 1.

Participants in *Rural Families Speak* were mothers, age 18 and older with at least one child 12 years old or younger and were eligible for or receiving Food Stamps or the Supplemental Nutritional Program for Women Infants and Children (WIC). A two to three hour interview was conducted and transcribed for quantitative and qualitative analysis. For this exploratory study, descriptive and correlational analyses using Pearson Product Moment correlations were conducted. Interview items identified as associated with risk were chosen as the independent variables for analysis. These included: work and income-related items, stress-related items, and depression-related items. Drug, alcohol, and tobacco use were the dependent variables.

RESULTS

Demographic Information

Demographic data from Wave 1 participants provide insight into the lives of these low-income rural mothers and their families (See Tables 1, 2, and 3). The majority of the initial 414 participants were White (64.6%). There were 21.5% Hispanic/Latina, 8% African American, and the remaining 5% Native American, Asian, multi-racial and other. The average age of participants was 29.1 years.

Approximately half (50.7%) of the mothers and 82.5% of their partners were working. Mothers worked one to three jobs earning \$1.11 to \$18.40 per hour with a median monthly income of \$791 (Bauer & Braun, 2002). Most families received WIC and participated in the School Lunch Program (84.3% and 86.4%, respectively).

Table 1. Mothers' Personal Demographic Characteristics²

Characteristic	Rural Mothers (n=414)	
	N	%
Age	29.1	
Marital Status:		
Single	103	24.9
Married	185	44.7
Living with Partner	62	15.0
Divorced	37	8.9
Separated	27	6.5
Number of children		
1 child	133	32.1
2 children	125	30.2
3 children	81	19.6
4 children	52	12.6
5+ children	23	5.5
Ethnicity:		
Non-Hispanic White	265	64.6
Hispanic/Latina	88	21.5
African American	36	8.8
Native American, Asian, Multi-racial, Other	21	5.0
Education		
8 th grade or less	42	10.2
Some high school	87	21.1
High school or GED	116	28.2
Business/technical Training	56	13.6
Some college	97	23.5
College/university graduate	12	2.9
Studies beyond college or graduate degree	2	0.5

Table 2. Mothers' Income-Related Demographic Characteristics

Characteristic	Rural Mothers (n=414)	
	N	%
Mothers currently working	210	50.7
Jobs worked by mothers		
1 job	160	84.2
2 jobs	26	13.7
3 jobs	4	2.1
Partners currently working	203	82.5
Jobs worked by partners		
1 job	158	91.9
2 jobs	12	7.0
3 jobs	2	1.2
Families receiving:		
WIC	274	84.3
School Lunch Program	235	86.4
Earned Income Credit	157	38.3
Child care assistance	126	30.4
Housing assistance	88	21.3
Energy assistance	134	32.4
Transportation assistance	53	12.8
Educational grants/loans	46	11.1
Medicaid	296	71.5
TANF	84	20.4
Adequacy of income		
Not at all adequate	60	14.7
Can meet necessities only	139	34.1
Can afford some things we want but not all we want	181	44.4
Can afford about everything we want	16	3.9
Can afford about everything we want and still save money	12	2.9

Most mothers (57.8%) reported being very satisfied or satisfied with life; 42.2% reported being very dissatisfied, dissatisfied, or having mixed feelings about life. Furthermore, nearly half (49.2%) scored as depressed on a standardized measure of depressive symptoms--the Center for Epidemiological Studies Depression Scale (CES-D). Income levels for these mothers placed most below or at the poverty line for the size of their families. Over 81% of the families included a young child (Bauer, 2004).

Table 3. Mothers' Substance Use-Related Demographic Characteristics

Characteristic	Rural Mothers (n=414)	
	N	%
Satisfaction with life		
Very dissatisfied	14	3.4
Dissatisfied	17	4.2
Mixed feelings	141	34.6
Satisfied	156	38.2
Very satisfied	80	19.6
Mother drug use	8	2.0
Mother alcohol use	11	2.7
Mother tobacco use	138	34.2
Partner drug use	9	3.8
Partner alcohol use	10	4.2
Partner tobacco use	102	43.2
Mother does not know where to find help for drug or alcohol problem	150	36.2
Mother scored as depressed on CES-D	188	49.2

The main research question asked in this study was: “What are the risk factors that are associated with drug, alcohol, and tobacco use among a sample of rural, low-income families?” Results are presented based on Pearson Product Moment correlations in Table 4. Tobacco use among mothers in the *Rural Families Speak* sample correlated with higher depression scores, lower total monthly income, poor knowledge of where to find help for a drug or alcohol problem or knowledge of community resources and with greater amounts of immediate stress. Correlations also showed that a higher number of jobs held by the mother was significantly associated with drug problems, alcohol problems, and tobacco use. Low satisfaction with life was significantly correlated with alcohol problems as was higher depression scores. Low level of knowledge about where to find help for a drug or alcohol problem was significantly correlated with participant drug problems. Implications of these factors as they contribute to risk and/or resilience are presented in the discussion.

Table 4. Pearson Correlations between risk/protective factors and drug, alcohol or tobacco use

	Drug use	Alcohol use	Tobacco use
Mother currently working	-.038	-.049	-.033
Total number of jobs	.127*	.162**	.146**
Total monthly income	-.066	-.067	-.110*
Satisfaction with life	-.023	-.110*	-.097
Find help with drug or alcohol problem	.107*	.094	.148**
Knowledge of community services	.079	.000	.180**
Total score of depression scales	.077	.155**	.241**
Total score of life skill assessment	-.040	-.055	-.030
Amount of stress right now	.055	-.093	-.122*
Ability to cope with stress	-.052	-.046	-.052
Overall satisfaction with amount of support	.060	-.025	-.050

*Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).

Findings from *Rural Families Speak* indicate a need for improved services to rural populations. Among the mothers, 36% reported that they did not know where to find help for a drug or alcohol problem—a finding consistent with the literature on lack of access to mental health care. When presented with a checklist of possible health problems, mothers seldom selected substance abuse, again consistent with research on self-reports of use or abuse.

However, more than one-third (34%) of the *Rural Families Speak* mothers did acknowledge tobacco use. Mothers also reported that nearly half (43%) of their partners used tobacco. This rate is significantly higher than the national average of 25% (National Household Survey on Drug Abuse, 2003). Data from *Rural Families Speak* also indicate that 292 (30.7%) of the 951 children were living in households where the mother smoked; 246 (25.9%) where the mother's spouse or male partner smoked; and 137 (14.4%) where both smoked. Thus, all of these children exposed to environmental tobacco smoke are at risk of cognitive impairment; those in a household where two persons smoke are at greatest risk.

DISCUSSION

The combined ecological risk and resilience model was used to frame the examination of factors that influence risk and resilience for low-income rural families. Both individual (e.g., depressive symptomatology and satisfaction with life) and environmental level systems (e.g., family income and knowledge of community resources) are important in defining factors that contribute to risk or resiliency. The theory holds that independent variables that influence risk or resiliency will explain the dependent variables of drug, alcohol, and tobacco use.

Tobacco use is frequently separated from drug and alcohol as a dangerous and addictive substance. Yet, among participants in *Rural Families Speak*, tobacco use correlated with higher depression scores, lower total monthly income, poor knowledge of community resources including where to find help for a drug or alcohol problem, and with high stress. Higher depression scores and low satisfaction with life also correlated with alcohol problems, indicating a substantial risk at the individual level.

A striking correlation in this study was the number of jobs held by the mother as a risk factor for drug problems, alcohol problems, and tobacco use. For these mothers, the need to work more than one job to produce income for food and other necessities apparently places them at-risk for substance abuse.

Limitations to the study

Hauenstein (2002) implored researchers studying rural, low-income women and their families to use imagination, innovation, and creativity. This study took that approach yet the study has limitations. The exploratory study was limited to quantitative analysis of only one wave of data. A great strength of the *Rural Families Speak* study is the combination of quantitative and qualitative research methods for data collection and the longitudinal nature of the interviews. It was an intention of this research study to apply mixed methodology to the analysis. However, time limited the team's ability to explore the qualitative dimensions of the available data set. The additional two waves of data need to be examined quantitatively and all waves, qualitatively. Another limitation was the focus on risk factors at the exclusion of protective factors. Since the interview protocol was not designed to specifically measure those factors, researchers will need to use more time intensive qualitative investigative methodologies to identify protective factors. These two limitations become the basis of recommendations for research including: 1) an examination of qualitative data to create a profile of common characteristics from mothers who self-identify substance abuse issues in their family; and 2) expansion of the work of Vandergriff-Avery, Anderson, and Braun (2004) with further exploration of the protective factors that lead to resilience among individuals and families at-risk, particularly for substance use and abuse.

An Imperative to Act

We, as a nation, must leave no child behind. Yet everyday, children in rural, low-income communities live within families who themselves are experiencing numerous life challenges that put both the adults, and especially the children, at-risk. Among these mothers, those working multiple jobs tended to report using substances--especially tobacco. Research reported by the U.S. government demonstrates that these children are at-risk of cognitive impairment from second-hand smoke.

Compounding the problem of substance use and the threat to children's health and cognitive ability is the lack of community services and the lack of knowledge of those services. Most of the mothers using substances in this study were unaware of available community resources that could help them or their families. To both help mothers and protect children, multiple interventions at multiple ecosystem levels may be needed.

To improve the health and well-being of rural families, practitioners need to understand the factors associated with substance use and abuse and barriers to access of community services. Policymakers need access to sound research such as that emerging from the *Rural Families Speak* study as they make decisions affecting rural families that takes into account their needs and challenges. Researchers, practitioners and policymakers must be aware that different populations have different needs--that rurality is itself a risk factor for many of the 25 million who populate rural America.

Over the last 10 years, the distinct needs of rural American families have received greater attention in research, policy, and the media. In 1997, the National Institute of Drug Abuse issued *Rural substance abuse: State of knowledge and issues*, a comprehensive review of prevention and treatment issues. In 2000, the National Center on Addiction and Substance Abuse (CASA) published another comprehensive review, *No place to hide: Substance abuse in mid-size cities and rural America*. Finally, the U.S. Department of Health and Human Services recently produced the *Rural Task Force Report*. The goals of this task force were to: 1) improve rural communities' access to quality services; 2) strengthen rural families and communities; 3) support rural policy and decision-making; 4) ensure a rural voice in the consultative process. If applied, the findings that are emerging from the *Rural Families Speak* study can contribute to the Rural Task Force goals. The use of an integrated ecological and resiliency framework could make the actions to achieve the goals more effective in preventing or reducing drug, alcohol and tobacco use among rural, low-income families.

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² Most data in tables 1, 2, and 3 are from the Basebook Report on Rural Families Speak by J.W. Bauer (2004). Frequencies are shown for valid cases. This document is available on the world wide web at www.ruralfamilies.umn.edu. Data on drug, alcohol, and tobacco use, and knowledge of where to find help for a drug or alcohol problem were analyzed by the researchers for the current study.