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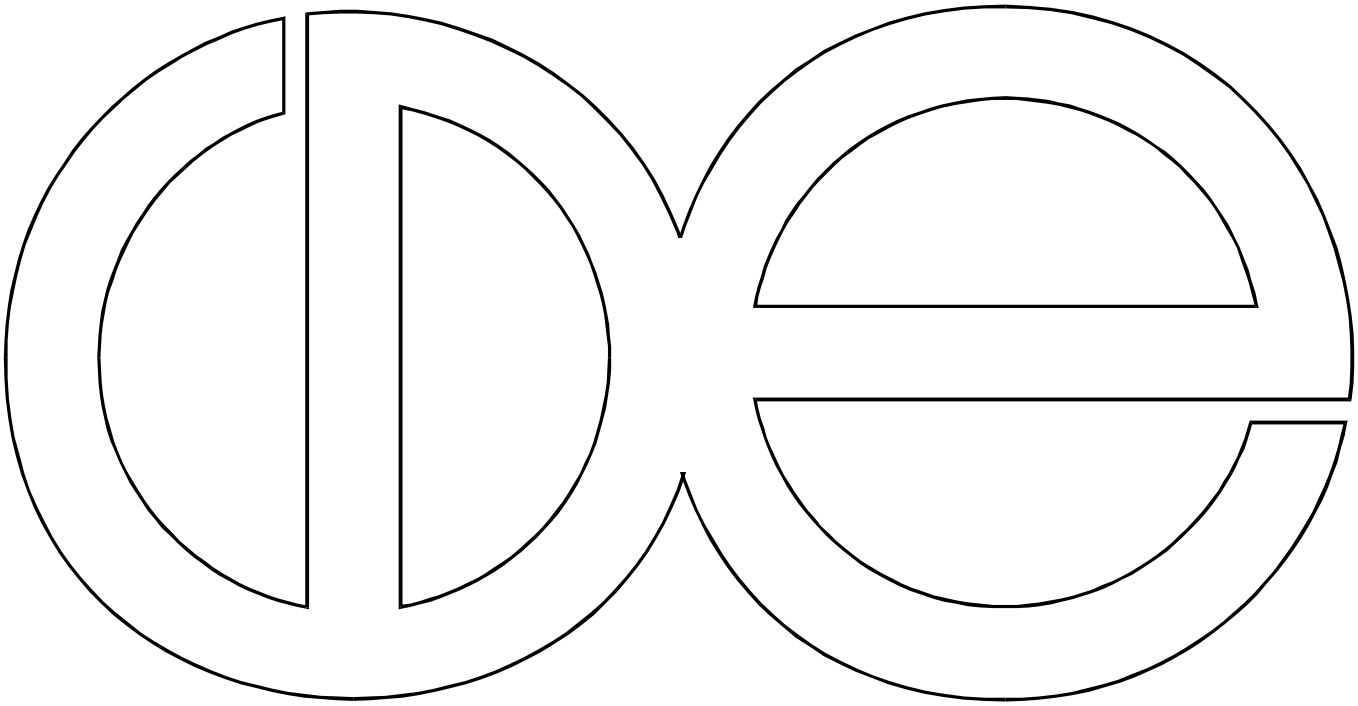

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Abstract

Using ecological theory as a theoretical framework, this study systematically examined the associations between multiple dimensions of family solidarity, work characteristics, work-family spillover, and alcohol abuse among a national sample of employed midlife adults (N=1,806). Multivariate analyses confirmed that work and family microsystem factors were associated with alcohol abuse. Aspects of the work-family mesosystem were the most robust correlates of problematic alcohol consumption. Psychological well-being did not mediate the association between work and family factors, and alcohol abuse; nor did the associations differ for women and men.

Key Words: alcohol abuse, family solidarity, work characteristics, work-family spillover, midlife

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Problematic alcohol consumption has devastating personal and family consequences. At the individual level, extensive evidence indicates that problematic or chronic alcohol consumption undermines physical health (Berkman & Breslow, 1983; Breslow & Breslow, 1993; Fried et al., 1998; Kaplan, Seeman, Cohen, Knudsen, & Guralnik, 1987; Metzner, Carman, & House, 1983; Paffenbarger et al., 1994; Pinsky, Leaverton, & Stokes, 1987; Roos & Havens, 1991), psychological well-being (Franks, Campbell, & Shields, 1992; Goldsmith-Cwikel, Dielman, Kirscht, & Israel, 1988; Public Health Service [PHS], 1990; Wickrama, Lorenz, Conger, & Elder, 1997), and social functioning (Finney, Moos, & Mewborn, 1980; Hull & Bond, 1986; Pokorny, Miller, & Kaplan, 1972; Selzer, 1971; Steele & Josephs, 1990). Problematic alcohol consumption therefore is a significant barrier to an individual's optimal health and wellbeing (Albert, 1995; Rowe & Kahn, 1987). At the family level, problematic drinking has been demonstrated to undermine marital satisfaction (Dunn, Jacob, Hummon, & Seilhamer, 1987; Jacob, 1992; Jacob & Leonard, 1992) and parent-child interactions (Seilhamer, Jacob, & Dunn, 1993; Jacob, Krahn, & Leonard, 1991). Consequently, from a public health and family enhancement perspective, it is important to more fully understand the correlates and predictors of problematic alcohol consumption to aid efforts to prevent alcohol abuse, and to successfully change existing alcohol abuse among adults.

Empirical investigations of abusive drinking, and practical interventions to change drinking habits typically assume that alcohol consumption reflects a rational choice (cf. Fitzgerald, Davies, Zucker, & Klinger, 1994). For example, the health behavior literature has been dominated by individual level "value expectancy" theories (Glanz, Lewis, & Rimer, 1997), which posit that alcohol consumption results from a logical decision-making process wherein an individual makes a

choice whether to drink after considering the pros and cons of the behavior (Prochaska, DiClemente, & Norcross, 1992). Similarly, much of the clinical literature reflects the "affect regulation" model, which holds that an individual self-medicates with alcohol to cope with burdens and stresses of everyday life (Brennan & Shaer, 1995; Moos, 1994; Murphy, 1993). Implicitly, the individual level perspectives assume that an individual can exert direct (i.e., choose to drink or not to drink) or indirect (e.g., learn alternative coping strategies, reconstruct the social environment) control over their alcohol consumption habits.

Unfortunately, several gaps in our understanding of problematic alcohol consumption result from the current over-emphasis on individual level theories. First, individual level theories do not give adequate attention to contextual or ecological factors that may either directly influence or moderate individual level factors in shaping an individual's drinking behavior. Specifically, we know very little about how factors in the family and work domains influence health behaviors and even less about how aspects of the work-family interface influence problematic alcohol consumption. Next, individual level models suggest that contextual factors have the same effect on everyone; however, some evidence has indicated that the determinants of problematic alcohol consumption may be different for men and women (Olenick & Chalmers, 1991; Schall, Kemeny, & Maltzman, 1992). Finally, the majority of the research reported in the health behavior literature uses data from small or non-representative samples which make generalizations tenuous.

The overarching goal of this research project was to use ecological theory (Bronfenbrenner, 1979) to guide a systematic investigation of the extent to which multiple dimensions of family solidarity (Bengtson & Roberts, 1991), work characteristics (Karasek &

Theorell, 1990) and work-family spillover were associated with alcohol abuse among a nationally representative sample of employed middle-aged adults.

Theoretical and Empirical Background

Ecological Systems Theory

Ecological theory, as explicated by Bronfenbrenner and colleagues (Bronfenbrenner, 1979, 1983, 1986, 1989, 1995; Bronfenbrenner & Ceci, 1994; Bronfenbrenner & Morris, 1998), can serve as a valuable tool for further understanding and modeling the determinants of problematic alcohol consumption (Fitzgerald, Davies, Zucker, & Klinger, 1994; McLeroy, et al., 1988; Sallis & Owen, 1997; Stokols, 1996). In short, an ecological perspective goes beyond the individual level theories typically used in the literature on health behavior and alcoholism to suggest an examination of the independent and interactive effects of multiple systemic levels (e.g., individual, microsystem, mesosystem, exosystem, macrosystem) on problematic drinking. In this study we focus on the influences of two major microsystem settings for midlife adults –family and the workplace—and the work-family interface (mesosystem) to see whether including these factors helps provide us with a more complete understanding of alcohol related behavior.

Family Factors and Problematic Alcohol Use

Family interaction patterns, such as a greater sense of emotional closeness or family cohesion, and the lack of intra-family conflict have been found to promote more healthful alcohol consumption among adults (Finney, Moss, & Mewborn, 1980; Franks, Campbell & Shields, 1992, Jacob, 1992; Pratt, 1976). Using a sample of alcoholic men and women who presented for treatment for alcoholism at a public hospital, cross-sectional analyses indicated that higher levels of family cohesion were associated with lower levels of alcohol consumption at both six months

and two years following treatment (Finney et al., 1980). Additionally, independent of the effect for family cohesion, higher levels of family conflict were found to promote alcohol consumption at six months following treatment. Longitudinal analyses of data from these same respondents indicated that both higher levels of family cohesion, and lower levels of family conflict at six months exerted independent effects on alcohol consumption two years after treatment.

Problematic alcohol consumption has also been linked to family culture (Bennett & Wolin, 1990). That is, family rules and family rituals have been identified as primary mechanisms through which the transmission of alcoholism occurs across generations. Families who maintain their family rituals, despite the presence of alcohol abuse in the family, have been found to be less likely to transmit alcoholism from one generation to the next (Bennett, Wolin, Reiss, & Teitelbaum, 1987). Therefore factors that protect family rituals, such as commitment to performance of family roles and commitment to meeting family obligations, would be expected to reduce the likelihood of problematic drinking.

The family, regardless of its structure or formation is an important microsystem shaping individual development; therefore, guided by an ecological model we hypothesized that positive family processes, such as emotional closeness, and family members' sense of family obligation would be associated with less alcohol abuse (Beavers & Hampson, 1993; Bowen, 1978; Broderick, 1993; Broderick & Smith, 1979; Epstein, Bishop, Ryan, Miller & Keitner, 1993; Olson, 1993).

Work Characteristics and Problematic Alcohol Use

The workplace is another common and influential microsystem shaping development during adulthood. Interestingly, the workplace is a target for implementing health promotion interventions (Public Health Service, 1991), yet workplace factors are not systematically examined as potential sources of variability explaining health behavior. This lack of attention has occurred despite cross cultural research implicating workplace characteristics such as decision latitude, psychological job pressures and supportive relationships in the workplace (Karasek & Theorell, 1990) as important predictors of health outcomes (Arber, 1997; Bruhn, 1988; Karasek, 1990; Karasek et al., 1988).

In the literature, only a few studies systematically examine the effects of workplace characteristics on health behaviors including alcohol use. Cross sectional analyses of nationally representative data indicated that skill discretion and supervisor support exerted small, but significant effects on respondents' (especially men's) use of alcohol, marijuana, and tobacco (Mensch & Kandel, 1988). Results from other cross-sectional and longitudinal studies indicate that work characteristics, such as occupational control and prestige, promoted more salutary health behaviors, including non-problematic alcohol consumption (Wickrama, Conger, & Lorenz, 1995). Taken together, available evidence supports the proposition that workplace characteristics influence an individual's use of alcohol. Therefore, we hypothesized that work characteristics reflecting the adequacy of the person-environment fit (Quirk & Wapner, 1991) such as decision latitude, psychological job pressure, and supportive relationships at work would influence alcohol use.

Work-Family Spillover and Problematic Alcohol Use

Ecological theory would also lead to the proposition that factors arising from the work-family mesosystem (i.e., the intersection of the family microsystem and the work microsystem) are likely to influence individual behaviors such as problematic alcohol consumption. Only a few studies have examined the impact of work-family spillover on alcohol consumption (Bromet, Dew, & Parkinson, 1990; Frone, Russell, & Cooper, 1993; Frone, Barnes, & Farrell, 1994). Their results consistently indicate that work-family conflict (i.e., negative spillover) directly and indirectly promotes higher levels of alcohol consumption. We therefore hypothesized that negative spillover between work and family would promote problematic alcohol consumption.

Along with limitations related to sampling (i.e., the use of small, non-representative samples), previous research examining the effects of work-family spillover on alcohol consumption has been limited by a potentially incomplete conceptualization of the work-family interface. That is, previous research has typically operationalized the work-family interface as a mesosystem that can range from non-problematic (neutral) to conflicted (negative). The possibility that the interface between work and family can be characterized by positive spillover as well as negative spillover (conflict) has not been considered (Barnett & Baruch, 1985; Eaton et al., 1993; Eckenrode, & Gore, 1990; Kessler & McRae, 1982; Repetti, Matthews, & Waldron, 1989). Because positive spillover between work and family may reflect successful adaptation to multiple environments, and consequently less need to self medicate with alcohol; we hypothesized that higher levels of positive spillover between work and family would be associated with a higher likelihood of being a non-problematic drinker. We also hypothesized that higher levels of negative spillover between work and family would be associated with a lower likelihood of non-problematic drinking..

Individual Characteristics and Problematic Alcohol Consumption

Ecological theory postulates that certain individual characteristics invite or discourage reactions from the social environment (Bronfenbrenner & Morris, 1998). Strands of evidence suggest that gendered patterns of role socialization for men and women regarding work and family, as well as gender differences in behavioral expectations for men and women help explain some of the variance in health and health behaviors between men and women (Simon, 1992; Verbrugge, 1985; Waldron, 1976).

Bits of theory and research support the gender moderation hypothesis. For example, some research indicates that the effects of work-family spillover are the same for women and men (Windle & Dumenci, 1997); however, other research finds that it is especially important to men to successfully manage the work-family interface because it demonstrates to the family that the man is able to control his work pressures (Weiss, 1990). Further, Pleck (Pleck, 1977) asserted that the boundary between work and family is "asymmetrically permeable" – i.e., the boundary from family to work is more permeable for women, whereas the boundary from work to family is more permeable for men. Differences in the degree of spillover from work to family and vice versa by gender suggest that gender differences will be present in the influence of work-family spillover on alcohol consumption. Therefore we hypothesized that gender would moderate the effects of work and family factors on problematic alcohol consumption, such that higher levels of negative spillover from work to family and lower levels of positive spillover from work to family would influence women's drinking more than men's. In contrast, higher levels of negative spillover from family to work, and lower levels of positive spillover from family to work would influence men's drinking habits more than women's.

Accounting for Family, Work and Problematic Alcohol Consumption Relationships

Ecological theory suggests that individual psychological factors serve as the mechanism through which social interactions influence developmental outcomes including behavior. By characterizing processes as "progressively more complex reciprocal interactions between an active human organism and the persons, objects and symbols in its immediate environment" (Bronfenbrenner & Ceci, 1994), ecological theory implies psychological assessments of the person-environment fit precede any developmental outcome. This conceptualization maps well onto existing health behavior research which suggests that aspects of psychological well-being mediate the association between social factors and health behavior outcomes (Duncan & McAuley, 1993; Fuchs, 1996; Mechanic & Cleary, 1980; Pender, 1996).

While some research treats psychological well-being as unidimensional construct (e.g., operationalizing it as either depression or happiness), Ryff and colleagues (Ryff, 1989; Ryff & Keyes, 1995; Ryff & Singer, 1996; Ryff & Singer, 1998a, 1998b; Schmutte & Ryff, 1997) have expanded upon the premise that psychological well-being is multidimensional. Drawing on a variety of theoretical and philosophical perspectives, Ryff has developed and validated six distinct components of psychological well-being reflecting a positive evaluation of self (self acceptance), quality connection to others (positive relations with others), the sense of direction and meaning in life (purpose in life), the capacity to effectively manage one's life (environmental mastery), a sense of continuing growth and development as a person (personal growth), and a sense of self-determination or autonomy (autonomy) (Ryff, 1989; Ryff & Keyes, 1995). Recently, Ryff and Singer (Ryff & Singer, 1998a; Ryff & Singer, 1998b) have posited that "the goods" in life, comprised of positive relations with others, a feeling of environmental mastery, and purpose in

life, are essential elements of positive health and well-being, and that one way that these "goods" have a salutary effect is through positive health behaviors.

If psychological well-being is a multidimensional construct, then health behavior research which has typically examined only one dimension of psychological well-being at a time (e.g., depression) may be incomplete. Indeed, it is possible that multiple dimensions of psychological well-being may exert independent effects on alcohol consumption. Therefore we included an examination of both depression and wellness as potential mediators of the association between work and family factors and problem drinking.

Hypotheses

To summarize, ecological theory and the existing literature led us to examine the following hypotheses:

H1. Ecological theory suggests that processes occurring within the family, such as intra-family relationships and feelings of family obligation influence behavioral/developmental outcomes; therefore **it is hypothesized that family solidarity evidenced by high perceived levels of affectual solidarity and high levels of normative solidarity will be associated with a lower likelihood of reporting alcohol-related problems.**

H2. Parallel to previous theory and research linking work characteristics to health, **it is hypothesized that an individual with a high level of decision latitude at work, and a supportive work environment will be more likely to be a non-problematic drinker. Conversely, we hypothesized that an individual working in psychologically demanding job will be more likely to report alcohol-related problems.**

H3. **It is hypothesized that positive spillover between family and work will be associated with a lower likelihood of abusing alcohol, while negative spillover will be associated with a greater likelihood of reporting alcohol-related problems.**

H4. **It is hypothesized that both positive and negative psychological well-being will independently help account for (mediate) the associations between family solidarity, work characteristics, work-family spillover and problematic alcohol consumption.**

H5. **It is hypothesized that higher levels of family solidarity will promote more healthful use of alcohol for women than men, and that salutary work characteristics will promote more healthful use of alcohol for men than women. We also expect that more negative and less positive work to family spillover will be associated with more alcohol abuse for women in contrast to men. By contrast, we hypothesize that more negative and less positive family to work spillover will be associated with more alcohol abuse for men in contrast to women.**

Methods

Data and Sample

The data used for this study are from the National Survey of Midlife Development in the United States (MIDUS) collected in 1995 by the John D. and Catherine T. MacArthur Foundation Research Network on Successful Midlife Development. The original purpose of the MIDUS was to examine patterns, predictors and consequences of midlife development in the areas of physical health, psychological well-being, and social responsibility. MIDUS respondents are a nationally representative general U.S. population sample of non-institutionalized persons aged 25-74, who have telephones. The sample was obtained through random digit dialing, with an oversampling of older respondents and men made to guarantee a good distribution on the cross classification of age and gender. The analytic sample to be used here (i.e., employed respondents aged 35-65)

includes 1,806 persons (N=847 women; N= 959 men). Sampling weights correcting for selection probabilities and non-response allow this sample to match the composition of the U.S. population on age, sex, race and education.

MIDUS respondents first participated in a telephone interview which lasted approximately 40 minutes. The response rate for the telephone questionnaire was 70%. Respondents to the telephone survey were then asked to complete two self-administered mailback questionnaires. The response rate for the mailback questionnaire was 86.8%. This yielded an overall response rate of 60.8% (.70 X .868) for both parts of the survey.

Measures

The one dependent variable, **Alcohol abuse** was operationalized by considering the extent to which the respondent experienced serious consequences as a result of drinking or symptoms of alcohol dependence within the past year (Hilton, 1991a; Pokorny, Miller, & Kaplan, 1972; Selzer, 1971). Respondents were asked the following five questions which were expanded from the *Composite International Diagnostic Interview* (World Health Organization [WHO], 1990): "Were you ever, during the past 12 months, under the effects of alcohol or feeling its after-effects in a situation which increased your chances of getting hurt – such as when driving a car or boat, or using knives or guns or machinery? Did you ever, during the past 12 months, have any emotional or psychological problems from using alcohol – such as feeling depressed, being suspicious of people or having strange ideas? Did you every, during the past 12 months have such a strong desire or urge to use alcohol that you could not resist it or could not think of anything else? Did you have a period of a month or more during the past 12 months when you spent a great deal of time using alcohol or getting over its effects? Did you ever, during the past

12 months, find that you had to use more alcohol than usual to get the same effect or that the same amount had less effect on you than before?" Response categories were yes, and no (Cronbach's alpha for the five items was .68). The respondent was coded as a non-problematic drinker (i.e., coded 1) if they answered "no" to all of the questions; otherwise, if the respondent answered "yes" to any of the questions the respondent was coded 0.

Descriptive statistics for the weighted analytic sample indicated that 12% of respondents were classified as problem drinkers, closely mirroring reports from other national samples (CDC, 1997; Hilton, 1991b) (see Table 1). We found that more men than women (18% versus 7%, respectively) reported an alcohol related problem (CDC, 1997; Hilton, 1991b).

[Insert Table 1 about here]

Three measures of family solidarity were included in the analyses. **Family affectual solidarity** was assessed with a summed index of responses to the following questions: (1) "not including your spouse or partner, how much do members of your family really care about you? (2) How much do they understand the way you feel about things? (3) How much can you rely on them for help if you have a serious problem? (4) How much can you open up to them if you need to talk about your worries? (5) Not including your spouse or partner, how often do members of you family make too many demands on you? (6) How often do they criticize you? (7) How often do they let you down when you are counting on them? (8) How often do they get on your nerves?" Response categories for each item were not at all=1, a little=2, some=3, and a lot=4, with items 5-8 reverse coded. Cronbach's alpha was .82.

Spouse affectual solidarity was assessed by summing the responses to the following questions: (1) "How much does your spouse or partner really care about you? (2) How much does he or she understand the way you feel about things? (3) How much does he or she

appreciate you? (4) How much can you rely on him or her for help if you have a serious problem? (5) How much can you open up to him or her if you need to talk about your worries? (6) How much can you relax and be yourself around him or her? (7) How often does your spouse or partner make too many demands on you? (8) How often does he or she make you feel tense? (9) How often does he or she argue with you? (10) How often does he or she criticize you? (11) How often does he or she let you down when you are counting on him or her? (12) How often does he or she get on your nerves?" Response categories were not at all=1, a little=2, some=3 and a lot=4. Cronbach's alpha for this index was .92.

Normative solidarity was assessed with a strength of family obligation scale, which was constructed by summing respondents' answers to four hypothetical situations. Specifically, the items asked "How much obligation would you feel: (1) to drop your plans when your children seem very troubled; 2) to call, write, or visit your adult children on a regular basis; 3) to drop your plans when your spouse seems very troubled; and 4) to take your divorced or unemployed adult child back into your home?" Response categories for each item was a scale from 0 = none to 10 = very great. Cronbach's alpha for this scale was .77.

Three measures of work characteristics were included. **Decision latitude**, assessing the amount of control the individual has over their work environment and tasks, and the specialization of labor or task variety was measured using a summed index based on responses to the following questions: (1) "How often do you have a choice in deciding how you do your tasks at work? (2) How often do you have a choice in deciding what tasks you do at work? (3) How often do you have a say in decisions about your work? (4) How often do you have a say in planning your work environment –that is, how your workplace is arranged or how things are organized? (5) How often do you learn new things at work? (6) How often does your work demand a high level of

skill or expertise? (7) On your job, how often do you have to initiate things – such as coming up with your own ideas, or figuring out on your own what needs to be done? (8) How often does your job provide you with a variety of things that interest you?" Response categories for each item in this index (as well as the indices for job pressure and support at work described subsequently) were never=1, rarely=2, sometimes=3, most of the time=4, and all of the time=5. Cronbach's alpha for this index was .98.

Job pressure, assessing the amount of psychological strain associated with working, was measured using the sum of responses to the following questions: (1) "How often do you have to work very intensively – that is, you are very busy trying to get things done? (2) How often do different people or groups at work demand things from you that you think are hard to combine? (3) You have too many demands made on you. (4) You have a lot of interruptions." Cronbach's alpha for the job pressure index was .83.

Support at work, assessing the extent to which relationships with co-workers and supervisors are perceived as supportive, was measured by summing responses to the following questions: (1) "How often do you get help and support from your co-workers? (2) How often are your coworkers willing to listen to your work-related problems? (3) How often do you get the information you need from your supervisor or superiors? (4) How often do you get help and support from your immediate supervisor? (5) How often is your immediate supervisor willing to listen to your work-related problems?" Cronbach's alpha for the support at work index was .94.

Four distinct dimensions of work-family spillover were evaluated. **Negative spillover from work to family** was assessed by summing respondents' answers to four questions. Specifically, the items asked "How often have you experienced each of the following in the past

year? 1) Your job reduces the effort you can give to activities at home. 2) Stress at work makes your irritable at home. 3) Your job makes you feel too tired to do the things that need attention at home. 4) Job worries or problems distract you when you are at home." Response categories for each of these items and each of the subsequently described work-family spillover indices were never=1, rarely=2, sometimes=3, most of the time=4, and all of the time=5. Cronbach's alpha for this index was .82.

Positive spillover from work to family was assessed by an index that summed respondents' answers to four questions. Specifically, the items asked, "How often have you experienced each of the following in the past year? 1) The things you do at work help you deal with personal and practical issues at home. 2) The things you do at work make you a more interesting person at home. 3) Having a good day on your job makes you a better companion when you get home. 4) The skills you use on your job are useful for things you have to do at home." Cronbach's alpha for this index was .72.

Negative spillover from family to work was assessed by summing respondents' answers to four questions. The questions asked, "How often have you experienced each of the following in the past year? 1) Responsibilities at home reduce the effort you can devote to your job. 2) Personal or family worries and problems distract you when you are at work. 3) Activities and chores at home prevent you from getting the amount of sleep you need to do your job well. 4) Stress at home makes you irritable at work." Cronbach's alpha for this index was .79.

Positive spillover from family to work was measured by an index summing respondents' answers to four questions. The questions asked "How often have you experienced each of the following in the past year? 1) Talking with someone at home helps you deal with problems at

work. 2) Providing for what is needed at home makes you work harder at your job. 3) The love and respect you get at home makes you feel confident about yourself at work. 4) Your home life helps you relax and feel ready for the next day's work." Cronbach's alpha for this index was .68.

Two mediating variables were included in the analysis. **Wellness** assesses the "critical goods" in life as measured by Ryff's (1989) positive relations with others, environmental mastery, and purpose in life indices. The items used to construct this index included: 1) "Maintaining close relationships has been difficult and frustrating for me. 2) People would describe me as a giving person, willing to share my time with others. 3) I have not experienced many warm and trusting relationships with others. 4) In general, I feel I am in charge of the situation in which I live. 5) I am good at managing the responsibilities of daily life. 6) I can do just about anything I really set my mind to. 7) Some people wander aimlessly through life, but I am not one of them. 8) I live life one day at a time and don't really think about the future. 9) I sometimes feel as if I've done all there is to do in life." Response categories for these items were: 1=strongly disagree, 2=somewhat disagree, 3=disagree a little, 4=agree a little, 5=agree somewhat, and 6=strongly agree (alpha = .69).

The **dysphoria** scale was comprised of six items which ask the respondent, "During the past 30 days, how much of the time did you feel so sad nothing could cheer you up? nervous? restless or fidgety? hopeless? that everything was an effort? and worthless?" Response categories for each item included all the time=5, most of the time=4, some of the time=3, a little of the time=2, and none of the time=1 (alpha=.89).

Several individual characteristics are typically associated with health behaviors, including age, gender, race, education and income (Abbey, Smith, & Scott, 1993; Ames & Rebhun, 1996;

Blair, 1988; Berkman & Breslow, 1983; Clark et al., 1997; DeFronzo & Pawlak, 1994; Dishman, Sallis, Orenstein, 1985; Gottlieb & Green, 1984; Graham, 1994; Hilton, 1991; Sallis & Hovell, 1990; Verbrugge, 1990; Waldron, 1976). Therefore this research project included controls for age (years), gender (female=1), race (black=1), education (years), and income (dollars). Additionally, a separate review of the family literature (Ross, Mirowsky, & Goldsteen, 1990) indicated that individuals who were married and who had children were more likely to practice positive health behaviors; therefore, **marital status** (not-married=1) **and parental status** (no children=1) were also controlled to better isolate the independent effects of work and family variables on health behaviors.

A variety of health behavior research has indicated that an individual's sense of control over their own health is an important predictor of health-related behaviors (Seeman & Seeman, 1983; Wallston & Wallston, 1978); therefore, control over health was also controlled in all analyses. **Control over health** was constructed by summing responses to the following items: 1) "Keeping healthy depends on things that I can do. 2) There are certain things that I can do for myself to reduce the risk of a heart attack. 3) There are certain things I can do for myself to reduce the risk of getting cancer. 4) I work hard at trying to stay healthy. 5) When I am sick, getting better is in the doctor's hands. 6) It is difficult for me to get good medical care" (alpha=.88).

Since time constraints are often conjectured to be an influence on health behaviors, the number of **hours the respondent reported working** were also controlled in all analyses. The number of hours worked was assessed using two questions from the telephone interview. First, respondents were asked "About how many hours do you work for pay in the average week on

your main job?" Then respondents were asked, "In an average week, how may hours to you work for pay at any other jobs?" Responses to these two items were summed into a continuous measure. (Interestingly, however, number of hours worked was *never* found to be significantly associated with health behaviors.)

Missing Data

In order to retain as many cases as possible, if a respondent answered more than half of the items comprising an index (i.e., family affectual solidarity, work to home negative spillover, etc.), the mean of the valid responses for the respondent was used for the index value. If the respondent answered less than half of the items for the index, the index value for that respondent was coded as missing. Missing flags (indicator variables) were then created for independent variables with missing data. Respondents missing on the outcome measure were not included in the analyses.

Analytic Sequence

The first three hypotheses were tested using multivariate logistic regression models, where non-problem alcohol consumption was first regressed on the control variables and family solidarity measures; then the outcome was regressed on the control variables and the work characteristics measures; and finally the outcome was regressed on the control variables and the work-family spillover measures. A final model examined the independent (unique) associations between all of the independent variables, the control variables and non-problem alcohol consumption.

The gender moderating hypothesis was examined by constructing gender interaction terms for each independent variable and entering the interaction terms into their respective models (e.g.,

Gender X Family Solidarity terms were entered into the family solidarity model and the full model). The mediating hypothesis was assessed using the guidelines established by Baron and Kenny (1986).

Results

Preliminary analyses that included both men and women together in models estimating the associations between work and family factors and problematic alcohol consumption did not provide sufficient evidence to support the gender moderation hypothesis; no gender interactions were significantly ($p \leq .05$) associated with problem drinking. We therefore report estimates from models that included both men and women and excluded gender interaction variables in Table 2.

[Insert Table 2 about here]

Family Solidarity and Non-problematic Alcohol Consumption

Evidence from a model estimating the association between different dimensions of family solidarity and problematic alcohol consumption (Table 2, Model 2) provided modest support for the first hypothesis. As expected, a higher level of spouse affectual solidarity was found to be associated with a lower likelihood of alcohol abuse. More specifically, for every unit increase in the amount of emotional closeness with a spouse or partner, the odds of reporting an alcohol-related problems decreased by a factor of 42%. This evidence provides some support for the ecological perspective which postulates that factors within the family microsystem systematically influence problematic alcohol consumption.

Work Characteristics and Non-Problematic Alcohol Consumption

Analyses estimating the effects of work characteristics on problematic alcohol consumption also provided some support for the research hypotheses. Results reported in Model 3 indicated that a higher level of pressure at work was associated with greater odds reporting alcohol-related problems among both women and men. Also as hypothesized, more supportive work relationships were associated with lower odds of being a problematic drinker among respondents in this midlife sample. Specifically, for every unit increase in the amount of pressure on the job, the odds of reporting alcohol-related problems increased by a factor of 50%; whereas for every unit increase in the amount of support at work, the odds of reporting alcohol-related problems decreased by a factor of 23%. Although decision latitude was not found to be associated with alcohol abuse, results from these analyses generally support an ecological perspective on alcohol consumption, which suggests that factors from the employment microsystem influence an individual's health-related behaviors.

Work-Family Spillover and Non-problematic Alcohol Consumption

Work to Family Spillover

Results from our analyses estimating the association between work to family spillover and problematic alcohol consumption partially support our third hypothesis, and replicate previous findings. Results from Model 4 indicate that a higher level of negative spillover from work to family (i.e., work-family conflict) is associated with greater odds of reporting an alcohol related problems. In contrast to our hypothesis however, these estimates suggest that positive spillover from work to family is not associated with alcohol consumption.

Family to Work Spillover

When we estimated the associations between negative and positive spillover from family to work, and problematic alcohol consumption (Model 5), consistent with our third hypothesis, we found that more negative spillover was associated with a greater likelihood of reporting alcohol related problems, while more positive spillover from family to work was associated with lower odds of alcohol abuse. Taken together, the results from Models 4 and 5 provide strong support for an ecological perspective on alcohol consumption which would predict that interactions between important life settings would be important determinants of behavior.

Unique Effects of Family, Work and Work-Family Spillover on Alcohol Abuse

Multivariate analysis estimating the unique effects of family solidarity, work characteristics, and work-family spillover on problematic alcohol consumption provided some robust evidence for an ecological perspective which posits that contextual factors are relevant sources of influence on alcohol consumption. That is, above and beyond the effects of the most commonly studied individual-level correlates of health-related behaviors, results from Model 6 indicate that factors from each ecological system (except for the family) were found to be independently associated with problem drinking.

Once the effects of family solidarity, work characteristics, and work-family spillover on problematic alcohol consumption were considered simultaneously, the previously significant associations between spouse affectual solidarity and non-problematic drinking were reduced to non-significance. Providing additional support for the second research hypothesis, results from multivariate analysis revealed that a higher level of pressure at work was associated with greater odds of problem drinking. Consistent with the third hypothesis, our results indicated that more negative spillover from work to family was associated with greater odds of reporting alcohol

related problems (trend level), and more positive spillover from family to work was associated with lower odds of reporting alcohol-related problems. In contrast to the third hypothesis however, these results also indicated that more positive spillover from work to family was associated with greater odds of reporting alcohol-related problems.

Psychological Well-being and Substance Use Behaviors

[Insert Tables 3 & 4 about here]

Analyses to justify the use of each measure of psychological well-being as a potential mediator of the associations between work and family factors and non-problematical alcohol consumption provided preliminary support for Hypothesis 4. Consistent with the established protocol (Baron & Kenny, 1986), we first examined the associations between our mediator variables and the outcome. Results provided in Table 3 indicated that independently, and net of each other, both positive and negative well-being were associated with problem drinking. Results displayed in Table 4 also indicated that all of the independent variables (except for pressure at work, support at work, and normative solidarity) are systematically associated with each of the hypothesized mediators.

However, when wellness and dysphoria were added to the "unique effects" model (i.e., Model 7) we found only very modest evidence of mediation, and only dysphoria was found to be associated with alcohol consumption once work and family factors were controlled. A trend level association between negative spillover from work to family and problem drinking was attenuated to non-significance. Similarly, a small amount of the association between job pressure and alcohol consumption was accounted for by both wellness and dysphoria. A small amount of the association between positive spillover from family to work and alcohol was explained by

psychological well-being. These results begin to suggest that work-family spillover is associated with alcohol consumption, at least in part, because of the association between work-family spillover and dysphoria.

Summary, Discussion, and Conclusions

The overarching goal of this research project was to use ecological theory to guide an examination of the association between family solidarity, work characteristics, and work-family spillover and problematic alcohol consumption during midlife. Generally the results provided support for taking an ecological perspective on problematic alcohol consumption, since they indicated that above and beyond the effects of individual factors, contextual factors from the conspicuous adult settings of work and family, and the interface of these settings influence problematic alcohol consumption among employed women and men. Contradictory to the fourth research hypothesis regarding mediation of these associations by psychological well-being, we found only modest evidence indicating that dysphoria mediated some of the effects of work and family factors on alcohol abuse. Rather, most of the contextual factors exerted direct effects on problematic use of alcohol. Finally, results indicated that the associations between work and family factors, and non-problematic drinking did not differ by gender.

Results from this study extend our understanding of problematic alcohol consumption among midlife adults in several important ways. Consistent with previous work (Bromet et al., 1990; Frone et al., 1994; Frone et al., 1993), several analyses in this study indicated that negative spillover between work and family promoted alcohol consumption among women and men. Consequently, this study provides nationally representative evidence suggesting that work-family conflict promotes problematic alcohol consumption.

Newer to the literature however were the results indicating that positive spillover between work and family influenced problematic alcohol consumption. Indeed results from the unique effects model suggest that both negative and positive spillover from work to family, and positive spillover from family to work are important ecological correlates of alcohol consumption among American midlife women and men. Moreover, our evidence indicating that both positive spillover from work to family and positive spillover from family to work were independently associated with alcohol consumption suggests that previous research conceptualizing the work-family interface from neutral to conflicted is limited.

The ecological perspective on alcohol consumption provides one potential explanation for the common finding that marital relationship quality promotes more healthful drinking. In the restricted model estimating the effects of family solidarity on non-problematic alcohol consumption, a high level of emotional closeness with a spouse or partner was found to be associated with lower levels of problematic alcohol consumption. However, once the work and work-family spillover variables were entered into the unique effects model, the effect for spouse affectual solidarity was attenuated to non-significance. Subsequent analyses (not shown) indicated that positive spillover from family to work completely mediated the effect of spouse affectual solidarity on non-problematic alcohol consumption. These results suggest that emotional closeness or intimacy per se does not influence alcohol consumption, rather spousal affect promotes more healthful use of alcohol by facilitating more success in the employment domain.

We must also recognize the limitations of this study. First, these data are cross-sectional, therefore any inferences of causality are tenuous. Longitudinal research examining the effects of

family, work and work-family spillover is necessary to more fully understand the temporal sequence of effects. Next, the alcohol consumption measure used in this study reflects only one dimension of alcohol consumption (i.e., problems related to alcohol). For example, the lack of findings in the present study regarding decision latitude at work, in contrast to other studies (Green & Johnson, 1990; Mensch & Kandel, 1988), may indicate that work characteristics do not influence an individual's propensity to start or stop the use of legal substances, but rather work characteristics influence the amount of substance use (Green & Johnson, 1990). Therefore future research needs to examine the extent to which work and family factors influence other dimensions of alcohol use (e.g., amount of consumption, and patterns of drinking) not captured by our measure, as well as how these factors influence attempted behavior change.

Nonetheless, these results provide strong evidence for the ecological perspective on alcohol abuse. Consistent with research hypotheses our findings indicate that aspects of the work and family microsystem, along with perceptions of the work-family mesosystem are independently associated with non-problem alcohol consumption among midlife, employed adults. In contrast to our hypothesis however, the associations between work and family factors, and alcohol consumption were, at best, modestly mediated by psychological well-being. Our results did not support the gender moderation hypothesis either; instead, results suggested that the associations between family solidarity, work characteristics, work-family spillover, and non-problematic alcohol consumption were largely the same for women and men. It is therefore important that future health behavior research continue to recognize the direct and indirect effects of ecological factors, such as family relationships, employment characteristics, while remaining attentive to individual level factors to most accurately specify and understand health behaviors.

Table 1: Descriptive statistics for analysis variables

Variable	M	SD	Range
Outcome			
Alcohol Abuse	.12	0.33	0-1
Family Solidarity			
Family Affectual	3.11	0.51	1-4
Spouse Affectual	3.14	0.56	1-4
Normative	8.08	1.69	0-10
Work Characteristics			
Decision Latitude	3.64	0.73	1-5
Job Pressure at Work	3.19	0.68	1-5
Support at Work	3.65	0.73	1-5
Work to Family Spillover			
Negative	2.65	0.73	1-5
Positive	2.87	0.74	1-5
Family to Work Spillover			
Negative	2.09	0.66	1-5
Positive	3.35	0.76	1-5
Psychological Well-being			
Dysphoria	9.19	3.67	3-30
Wellness	32.95	6.62	6-45
Individual Characteristics			
Age	46.03	7.77	35-64
Gender (1=female)	0.51	0.50	0-1
Race/ethnicity (1=black)	0.11	0.31	0-1
Household Earnings	50,435	38,278	0-300,000
Education	2.70	0.97	1-5
Not Currently Married	0.29	0.45	0-1
No Children	0.11	0.31	0-1
Hours Worked/Week	44.80	16.30	3-126
Control Over Health	5.18	.76	1-7

Source: National Survey of Midlife Development in the United States 1995 (MIDUS).

Note: Means for categorical variables are proportions.

Table 2: Estimated odds ratios for the effects of family solidarity, work characteristics, and work-family spillover on alcohol abuse.

Independent Variables	Model 1 O.R. [a]	Model 2 O.R. [a]	Model 3 O.R. [a]	Model 4 O.R. [a]	Model 5 O.R. [a]	Model 6 O.R. [a]	Model 7 O.R. [a]
Family Measures							
Family Affectual Solidarity		.84				1.02	1.14
Spouse Affectual Solidarity		.58 ***				.82	.86
Normative Solidarity		.95				.98	.98
Work Measures							
Decision Latitude			.88			.89	.92
Job Pressure at Work			1.50 **			1.30 *	1.29 +
Support at Work			.77 *			.85	.84
Work to Family Spillover							
Negative				1.56 ***		1.26 +	1.13
Positive				1.11		1.35 *	1.37 *
Family to Work Spillover							
Negative					1.52 ***	1.14	1.09
Positive					.66 ***	.66 ***	.67 ***
Psychological Well-being							
Wellness							.98
Dysphoria							1.05 *
Individual Characteristics							
Age	.95 ***	.95 ***	.95 ***	.96 ***	.96 ***	.96 ***	.96 ***
Gender (female=1)	.30 ***	.29 ***	.29 ***	.29 ***	.29 ***	.27 ***	.27 ***
Race/Ethnicity (Black=1)	.36 *	.34 *	.37 *	.36 *	.37 *	.39 *	.42 *
Household Earnings	1.00 *	1.00 *	1.00 *	1.00 *	1.00 *	1.00 *	1.00 *
Education	1.06	1.06	1.05	1.04	1.04	1.01	1.05
Not Married	2.02 ***	1.32	2.02 ***	2.04 ***	1.83 ***	1.38	1.26
No Children	.68 +	.68 +	.67 +	.67 +	.68 +	.67 +	.63 *
Hours Worked/Week	.99	.99	.99 +	.99 +	.99	.99 +	.99
Control Over Health	.74 ***	.75 **	.76 **	.74 **	.76 **	.76 **	.75 **
Log Likelihood	1105.60	1087.59	1088.34	1087.46	1079.90	1057.02	1044.92
df	1564	1558	1559	1560	1560	1545	1541

+ p<..10 * p<.05 ** p<.01 *** p<.001 (one-tailed)

Source: National Survey of Midlife Development in the United States 1995 (MIDUS).

[a]: O.R.=Odds Ratio

Table 3: Estimated odds ratios for the association between psychological well-being, individual characteristics and alcohol abuse

Independent Variables	**Model 1 O.R.** [a]	**Model 2 O.R.** [a]	**Model 3 O.R.** [a]
Psychological Well-being			
Wellness	.95 ***		.96 **
Dysphoria		1.09 ***	1.06 *
Individual Characteristics			
Age	.95 ***	.95 ***	.95 ***
Gender (female=1)	.31 ***	.28 ***	.29 ***
Race/Ethnicity (black=1)	.39 *	.37 *	.39 *
Household Earnings	1.00 *	1.00 *	1.00 *
Education	1.11	1.10	1.12
Not Married	1.80 **	1.88 ***	1.78 **
No Children	.68	.65 +	.66 +
Hours Worked/Week	1.00	1.00	1.00
Control Over Health	.75 **	.75 **	.75 **
Log Likelihood	1084.18	1086.37	1076.72
df	1562	1562	1560

+ p<.10 * p<.05 ** p<.01 *** p<.001 (two-tailed).
Source: National Survey of Midlife Development in the United States 1995 (MIDUS).
[a]: O.R.= Odds Ratio

Table 4: Unstandardized OLS coefficients estimating the associations between work and family factors and psychological well-being.

	Wellness	Dysphoria
Family Measures		
Family Affectual Solidarity	1.87 ***	-0.61 **
Spouse Affectual Solidarity	2.04 ***	-1.06 ***
Normative Solidarity	0.51 ***	0.11
Work Measures		
Decision Latitude	1.53 ***	-0.22 ***
Job Pressure at Work	-0.39	-0.04
Support at Work	-0.36	.29 *
Work to Family Spillover		
Negative	-1.37 ***	1.18 ***
Positive	0.34 *	-0.34 *
Family to Work Spillover		
Negative	-1.08 **	0.47 **
Positive	0.49 +	-0.06
Constant	16.35 ***	10.09 ***
Adjusted R^2	0.28	0.19

+ p<.10 * p<.05 ** p<.01 *** p<.001 (two-tailed).
Source: National Survey of Midlife Development in the United States 1995 (MIDUS).

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