Published in final edited form as:

Clin Psychol Rev. 2003 December ; 23(7): 959–997. doi:10.1016/j.cpr.2003.09.002.

For better or for worse? The effects of alcohol use on marital functioning

Michael P. Marshal*

Department of Psychiatry, Western Psychiatric Institute and Clinic, 2811 O'Hara Street, Pittsburg, PA 15213, USA

Abstract

Two competing hypotheses propose opposite effects for the relation between alcohol use and marital functioning. One hypothesis conceptualizes alcohol use as maladaptive and proposes that it serves as a chronic stressor that causes marital dysfunction and subsequent dissolution. An opposing hypothesis proposes that alcohol use is adaptive and serves to temporarily relieve stressors that cause marital dysfunction, stabilizing the marital relationship, and perhaps preventing dissolution. Sixty studies were reviewed that tested the relation between alcohol use and one of three marital functioning domains (satisfaction, interaction, and violence). Results provide overwhelming support for the notion that alcohol use is maladaptive, and that it is associated with dissatisfaction, negative marital interaction patterns, and higher levels of marital violence. A small subset of studies found that light drinking patterns are associated with adaptive marital functioning; however, more research is necessary to replicate these effects and identify specific conditions under which they occur. © 2003 Elsevier Ltd. All rights reserved.

Keywords

Alcohol drinking patterns; Alcoholism; Marriage; Marital relations; Marital satisfaction

1. Introduction

The term *alcoholic marriage* (McCrady & Epstein, 1995a, 1995b; Paolino & McCrady, 1977) is often used to describe a partnership in which one or both of the partners have a history of alcoholism that interferes with successful, day-to-day marital functioning. Although alcoholic marriages are fairly common in the United States, with estimated prevalence rates ranging anywhere from 10% to 45% (Clark & Hilton, 1991), the commencement and subsequent trajectory of the alcoholic marriage is anything but common. For example, a recent review of what has been termed *alcohol and the marriage effect* concluded that (a) alcoholics are less likely to get married than are nonalcoholics, (b) if they do get married, it is often earlier or later in the young-adult developmental cycle than nonalcoholics, (c) alcoholics are likely to reduce alcohol use once they are married, and (d) they are more likely to get divorced than are nonalcoholics (Leonard & Rothbard, 1999).

This last finding, that alcoholics are more likely to get divorced than are nonalcoholics, is consistent with the most intuitive and popular hypothesis regarding this relationship, that alcohol use serves as a chronic stressor, and has a deleterious influence on marital functioning

(for reviews, see Gotlib & McCabe, 1990; Halford, Bouma, Kelly, & Young, 1999; O'Farrell & Rotunda, 1997). Indeed, social exchange theory (see McCrady, 1982) posits that alcohol use causes stressful family interactions, the negative effects of which are dampened by subsequent alcohol use, thereby serving as a negative reinforcer. As alcohol use increases, then, so do negative family interactions, marital violence, and marital dissatisfaction, all of which serve to perpetuate the dissolution process (Gottman, 1994).

Another popular hypothesis, originating from a family systems approach to alcoholism, suggests that alcohol use serves an adaptive function in the marital relationship rather than a maladaptive one (see Steinglass & Robertson, 1983, for review). The basic tenets of this theory contend that family interaction patterns serve to maintain alcohol use, by rewarding drinking behaviors through subsequent family interactions that serve as positive reinforcers. The seminal work of Steinglass and colleagues provides some qualitative evidence in support of this process. For example, they observed alcoholic family interaction (marital dyads, with and without children) in the hospital, laboratory, and at home, and concluded that alcohol use temporarily relieves daily stress or tension in the family system through increases in affective expression and problem-solving ability, helping to maintain relatively stable and adaptive marital and family relationships (Steinglass, 1971, 1979a, 1979b; Steinglass, Davis, & Berenson, 1977). This hypothesis is provocative not only because it suggests that drinking behavior is maintained by family interactions, but that a relatively successful marital relationship might be maintained by alcohol use.

These contradictory hypotheses—one predicting maladaptive marital outcomes and the other predicting adaptive marital outcomes—are important because they have guided several decades of research on the effects of alcohol use on marital functioning. This research has posed and tested three main questions: (a) Do alcoholic marriages differ from nonalcoholic marriages in their quality of marital functioning? (b) Is alcohol consumption related to marital functioning? (c) What theoretical and methodological factors moderate the relation between alcohol consumption and marital functioning? The primary goal of this review was to evaluate the nature of the relation between alcohol use and marital functioning (adaptive versus maladaptive) using these questions. The secondary goal of this review was to evaluate and summarize the methodological strengths and weaknesses of this literature and the extent to which they inform us about the internal and external validity of the findings, and our ability to make causal inferences regarding the relationship between alcohol use and marital functioning.

Marital functioning outcome variables used with intact couples are typically operationalized as marital satisfaction, interaction, and violence. Although some researchers have provided fairly extensive reviews within one marital functioning domain (e.g., Jacob & Seilhamer, 1987; Leonard, 1993; McCrady & Epstein, 1995a, 1995b), a comprehensive review that includes all three marital functioning domains has not been written. There are two main reasons why a review of this nature is important. First, a comprehensive review of the empirical literature that has evaluated the effects of alcohol use on multiple indices marital functioning is a necessary first step towards understanding their role in the association between alcohol and marital success and/or marital dissolution and divorce. Second, it can highlight similarities and differences in the methods, results, and conclusions of these studies across three frequently used marital functioning domains, which have been studied relatively independently of one another in the alcohol use literature. Indeed, one of the strengths of an integrative review is that it can compare and contrast the conclusions from studies that have inherently different design methodologies. For example, marital interaction research involves the microanalysis of moment-to-moment behaviors of each spouse during a dyadic interaction task in the laboratory, whereas violence research typically evaluates the effects of concurrent, self-reported predictors and moderators of verbal and physical aggression. Because evaluating the adaptive and maladaptive associations between alcohol use and marital functioning involves integrating the

conclusions of these disparate methodologies, a qualitative rather than quantitative review of this literature was conducted.

Several search methods were employed to identify studies in the literature that tested the relation between alcohol and marital functioning in intact, married couples. The primary search engine/database employed was PsychInfo, which identified well over 1000 articles and book chapters using several variations of the keywords *alcohol and marriage*. Alcohol was also used in combination with several marital functioning keywords such as *satisfaction, interaction, communication, conflict, violence, and aggression* to identify relevant studies. These abstracts were then evaluated to determine whether the study tested the relation between alcohol and marital functioning. The second stage of the search procedure involved identifying key alcohol and marital functioning measures and using the Social Science Citation Index to identify articles that cited them. These abstracts were also evaluated to determine if they met criteria for the current review. Finally, articles were located using the bibliographies of all articles that tested the relation between alcohol and marital functioning. Altogether, 60 peer-reviewed articles and book chapters were identified using these procedures, which tested 70 outcomes (24 satisfaction, 16 interaction, and 30 violence) using 44 independent samples. Because the majority of these studies were quasi-experimental, an evaluation of the internal and external validity of the results and our ability to make causal inferences about this relation rely heavily on study design characteristics including: sampling procedures, sample size, demographic characteristics, inclusion/exclusion criteria, data analytic strategies, and the construct validity of the alcohol and marital functioning variables. A summary of these characteristics and their implications as they pertain to this literature, therefore, will be discussed prior to summarizing the results. A detailed description of the methodological characteristics of all studies cited in this review is presented in Table 1. The information contained in this table was used as a vehicle for describing and summarizing the methodological characteristics of each subset of studies, and as a result, is divided into three parts. Table 1A contains all studies that tested the relationship between alcohol and marital satisfaction, Table 1B contains all marital interaction studies, and Table 1C contains all marital violence studies. Each part is alphabetically ordered by the last name of the first author.

2. Study design characteristics

2.1. Sampling procedures

2.1.1. Sample type—Participants across studies were recruited from several sources that can be broadly categorized into treatment- and community-based samples. Treatment samples were often recruited from university-based counseling clinics, hospitals, and/or community mental health clinics. Couples in treatment-based samples are thought to have more severe and acute alcohol and/or marital problems than non-treatment-based samples do, as well as higher rates of associated psychiatric comorbidity. Community samples are normally recruited through local newspaper advertisements. Because they are typically not characterized by acute distress, these couples are often seen as having less severe problems than couples recruited from treatment programs. As a result, the source of recruitment has implications for the internal and external validity of the findings. For example, the effects of alcohol use observed in treatment-based samples might be inflated due to symptoms associated with comorbid psychopathology rather than due to the effects of alcohol use, and may not generalize to nontreatment populations. Fifteen of the 44 independent samples were treatment samples, 26 were community samples, and 3 samples were recruited from treatment and community sources. Marital violence studies have the highest proportion of treatment-based samples (40%), followed by interaction studies (31%), and satisfaction studies (25%).

2.1.2. Inclusion/exclusion criteria—Specificity of the relation between alcohol and marital functioning is influenced by the sample recruitment procedures. Researchers that

exclude couples or individuals with concurrent psychological diagnoses such as major depression, antisocial personality disorder, or drug abuse and dependence (as opposed to alcohol abuse and dependence) can make more confident statements about the relation between alcohol and marital functioning than researchers who do not. This is especially true of spousal alcoholism studies because there is a high rate of psychiatric comorbidity within alcoholism samples (Helzer & Pryzbeck, 1988; Kessler, 1995), and as a result some speculated that the relation between spousal alcoholism and marital functioning may be spurious (Gelles, 1993; Leonard, 1993; Leonard & Rothbard, 1999). Indeed, marital functioning is affected by depression and other forms of psychopathology that may preclude, mask, or exacerbate the observed relations between alcohol and marital functioning. Despite problems presented by presence of concurrent psychiatric disorders in alcoholics, only 20 of the 60 studies excluded such participants (see Table 1).

For studies in which alcoholic couples were compared with nonalcoholic couples, the internal validity of the findings and the ability to make causal inferences are also influenced by the nature and source of the comparison groups (see the “Comparison Group” column in Table 1). Nonequivalent comparison groups threaten the conclusion that differences between alcoholic and nonalcoholic couples are due to alcohol rather than other demographic or clinical factors. While the majority of the studies that compare alcoholic and nonalcoholic groups test for differences between groups, some compare their results to national survey samples (e.g., O’Farrell & Choquette, 1991) or do not control for demographic differences that they do find. These problems will be discussed in more detail below.

2.2. Sample size

Sample sizes across these 60 studies ranged from 8 to 11,870 and are highly positively skewed, with a median sample size of 96. Study design and procedures heavily influence the resources that are required to recruit and pay participants. Studies that assess behavioral interactions between partners typically utilize more resources because they require (a) that participants visit the laboratory, (b) larger monetary incentives to encourage participation by the couples, and (c) several experimenters to observe and code each interaction sequence. These research demands are reflected in the smaller sample sizes used in marital interaction research (mean/median = 72/82) relative to the marital satisfaction samples (mean/median = 170/80) and marital violence samples (mean/median = 1166/343). In such studies, the statistical conclusion validity of the results is threatened (see Shadish, Cook, & Campbell, 2002), primarily by the fact that they do not have enough power to detect small (but meaningful) effects. Problems that arise as a result of small sample sizes in the marital interaction literature are discussed in more detail below.

2.3. Sample age and duration of marriages

Mean age of participants in each study in this review ranges from 23 to 45, with a mean age across studies of 36. Some differences are observed between sets of studies. For example, the average age in the set of marital violence studies is 32, whereas the average age in the set of marital interaction studies is 40. Nevertheless, only 5 of the 44 independent samples reported mean sample ages under 30, and only one interaction study had a mean sample age under 30. This bias limits the external validity of the results, because the age of the participants is likely to have an effect on the relation between alcohol and marital functioning. Young adults are likely to have different alcohol use and marital functioning trajectories than older adults. For example, the 2-week prevalence of heavy drinking declines after age 21 (Johnston, O’Malley, & Bachman, 1997), and marital satisfaction has a tendency to decline during the first several years of the relationship (Kurdek, 1998). As couples get older, then, their drinking habits change and their relationship becomes increasingly stable. Because of these differences, some caution is warranted when generalizing results from these studies to younger populations.

2.4. Ethnicity

Thirty-three of the 60 studies in Table 1 (55%) reported descriptive information on sample ethnicity or race. The proportion of Caucasian participants across these studies ranged from 28.9% to 100%, and the average was 76.6%. Some differences across subsets of studies are noteworthy. For example, only 3 out of the 16 marital interaction studies (18.8%) reported descriptive information about ethnicity and their average proportion of Caucasian participants was 91%. Interestingly, marital violence studies were most likely to contain information regarding their participant's ethnicity status (67.9%), and also had the most diverse representation (percentage of Caucasian: 28.9–100%) compared to satisfaction studies (60–100%) and interaction studies (81–100%), and as a result had the lowest average proportion of Caucasians (48.2%). While some studies in this literature made explicit efforts to incorporate ethnicity into their research questions (e.g., Neff, Holamon, & Schluter, 1995), others noted discrepancies between experimental and control groups in ethnic composition but did not attempt to control for them (e.g., Schiavi, Stimmel, Mandeli, & White, 1995). Doing so is important due to ethnic group differences in the prevalence of alcohol use disorders (Helzer, Burnam, & McEvoy, 1991), the trajectories of drinking behavior over time and their relationship to marital status (Curran, Muthen, & Harford, 1998), and changes in alcohol related problems over time (Caetano & Clark, 1998). It should be noted here that other important indices of cultural influences on the relationship between alcohol use and marital functioning were either underreported (e.g., religious beliefs) or too heterogeneous in their operationalization across studies (e.g., socioeconomic status) to facilitate meaningful conclusions or discussion.

2.5. Independent variables

Alcohol use is a broad term purposely employed throughout this review to subsume a wide range of alcohol use behaviors and consequences that are most commonly used in this literature. Indeed, particular attention should be paid to the alcohol use constructs used within and across studies, because the operational definition of these constructs play a strong role in the interpretation of their effects on marital functioning and in the conclusions that are drawn from this review. For this reason, a brief overview of the four most common conceptual and operational definitions of alcohol use behaviors used in this literature will be provided below. It should be noted that the majority of these studies assessed the effects of husbands' alcohol use and abuse on wives' marital functioning outcomes. This bias influenced this review in two ways. First, because it is historically not studied as often in this literature, the effects of alcohol use on one's own marital functioning was not reviewed. Second, terminology used in this review was such that "alcoholics" in alcoholic marriages will refer to the husbands unless otherwise stated. The effects of wives' alcohol use and abuse on marital functioning and the effects of concordant use will be given special consideration and summarized towards the end of this review.

2.5.1. Alcoholism diagnosis—The *Diagnostic and Statistical Manual for Mental Disorders* (DSM; American Psychiatric Association) is the most widely used alcoholism diagnostic tool in the United States. Individuals who meet DSM alcohol "dependence" and/or "abuse" criteria are considered alcoholics. Dependence primarily refers to a cluster of symptoms that involve physiological and psychological tolerance of alcohol and withdrawal symptoms in the absence of alcohol. *Alcohol abuse* is primarily defined as the amount of negative personal, social, and work/ school related consequences as a result of alcohol consumption. Despite these relatively concrete definitions, this literature has been criticized for the lack of consistency across studies in the conceptual and operational definitions of alcoholism (Leonard, 1993; McCrady & Epstein, 1995a, 1995b).

2.5.2. Problem use—*Problem use* is a broad term used to describe behaviors and symptoms of drinkers that are characteristic of formally diagnosed alcoholics. Problem use is often assessed using diagnostic screening instruments such as the Michigan Alcoholism Screening Test (MAST; Selzer, 1971) or the Alcohol Dependency Scale (ADS; Skinner & Allen, 1982). In addition, the term *problem use* is used to describe negative alcohol-related consequences that occur as a result of alcohol consumption (e.g., been in a fight or have had legal problems as a result of alcohol use). While some studies in this review employ diagnostic screening measures like the MAST to identify alcoholic and nonalcoholic groups, others use it as a continuous problem use variable.

2.5.3. Alcohol consumption—Measures of alcohol consumption refer to the quantity and frequency of alcohol consumed in a given period. Typical measures of alcohol consumption will assess how often an individual drinks (frequency) or how much an individual drinks in one sitting (quantity). Quantity–frequency indices are often employed by studies in the current review and are used to calculate average daily or weekly estimates of a drinkers' volume of alcohol consumption. Heavy use is a term that is also used in the alcohol literature, and although there are no standard measures, it is often operationalized as having five or more drinks in one sitting or getting “drunk” or “very high” on alcohol.

2.5.4. Alcohol typologies—Although there is an extensive history of research on the development of alcoholic subtypes (see Babor, Hesselbrock, Meyer, & Shoemaker, 1994, for a review), the marital functioning literature most often focuses on three subtypes defined primarily by either drinking pattern or comorbid high-risk behavior such as aggression or antisociality. For example, some researchers distinguish between “steady” and “binge” drinkers (Epstein, Kahler, McCrady, Lewis, & Lewis, 1995). Steady drinkers are more likely to drink a smaller volume of alcohol and do so more frequently, whereas binge drinkers are likely to consume heavy amounts of alcohol less frequently. Although this is a conceptual rather than empirical typology, it is consistent with some empirically derived alcoholic subtypes (Epstein et al., 1995), and has been useful in identifying subgroups in the marital functioning literature.

3. Dependent variables and summary of results

Marital satisfaction, interaction, and violence are the three primary constructs used to operationalize marital functioning in the alcohol use literature. In each of the following sections, the marital functioning construct will be described and the strengths and weaknesses of the common assessment measures will be discussed. The remainder of each section is organized such that each subset of studies will be evaluated based on these three questions: (a) Do alcoholic marriages differ from nonalcoholic marriages in their quality of marital functioning? (b) Is alcohol consumption related to marital functioning? (c) What theoretical and methodological factors moderate the relation between alcohol consumption and marital functioning? Ten studies are represented in more than one part of Table 1 because they assessed more than one marital functioning construct (see “Outcome” column in table). Five samples were used in more than one study, therefore are represented two or more times in this review.

3.1. The effects of alcohol use on marital satisfaction

Marital functioning is often assessed using intraindividual measures of marital satisfaction. Marital satisfaction is a common way to distinguish between maritally distressed and nondistressed couples and has been an integral part of marital research for many decades (e.g., Terman, 1938). Common marital satisfaction items might ask a respondent how happy they are in the marriage, whether they feel supported by their partner, how often they argue, and whether they have ever regret getting married. Eighteen of the 24 satisfaction studies in Table

1A assessed marital satisfaction with the Short Marital Adjustment Test (MAT; Locke & Wallace, 1959) and/or the Dyadic Adjustment Scale (DAS; Spanier, 1976). The MAT provides a total marital satisfaction score that ranges from 2 to 158. Scores lower than 100 are considered to be in the clinically “distressed” range. The DAS also provides an overall marital adjustment score similar to the MAT, ranging from 0 to 151. The DAS also includes several subscale scores (affection, cohesion, consensus, and satisfaction) that are not used often in this literature.

3.1.1. Differences between alcoholic and nonalcoholic couples in marital satisfaction—Eight studies tested differences in marital satisfaction between spouses of alcoholics and spouses of nonalcoholics. O’Farrell and Birchler (1987) conducted a study that is prototypic of this design. They compared 28 alcoholic couples with 28 maritally conflicted couples and 28 normal control couples. Alcoholic couples were recruited from an alcohol treatment program. All of the husbands in the alcoholic group reported clinically significant levels of alcohol use and/or abuse on the MAST (Selzer, 1971). Maritally conflicted couples were recruited from a marital therapy treatment program, and reported clinically significant levels of marital dissatisfaction on the MAT. Normal control couples were recruited from newspaper advertisements requesting the participation of “happily married” couples, and met study criteria if they scored above 100 on the MAT, indicating healthy levels of marital satisfaction. The results indicated that wives of alcoholics reported marital satisfaction levels similar to the wives in conflicted marriages, both of which were significantly lower than levels reported by wives of happily married couples. Seven other studies reported similar findings (Escallier-Nicola, Botwin, & Tarter, 1994; Jacob & Leonard, 1992; Leonard & Jacob, 1997; McLeod, 1993; Perodeau & Kohn, 1989; Schiavi et al., 1995; Tubman, 1991) and suggest that spousal alcoholism is associated with marital dissatisfaction.

3.1.2. Relationship between alcohol consumption and marital satisfaction—Another common way to assess the relation between alcohol and marital functioning is to test whether continuous measures of alcohol consumption and alcohol problems are correlated with marital satisfaction. Several studies tested this question, generating several interesting trends. First, studies with relatively large sample sizes (Dumka & Roosa, 1993, 1995; Leonard & Roberts, 1998b; Leonard & Senchak, 1993; Zweben, 1986) reported significant negative correlations between alcohol problems or heavy use and marital satisfaction. These results are consistent with the results from studies comparing alcoholic and control groups and suggest that heavy/problem alcohol use plays a maladaptive role in marital relationships. In addition, two of these studies found the relation between problem use and marital satisfaction to be mediated by stress associated with alcohol problems (Dumka & Roosa, 1993; Zweben, 1986).

Several other studies reported marginal (Jacob, Dunn, & Leonard, 1983) or nonsignificant correlations between spouse’s alcohol use/abuse and total scores on the DAS (Halford & Osgarby, 1993; Katz, Arias, Beach, Brody, & Roman, 1995). Nonsignificant results can be explained a couple of different ways. First, these studies have relatively small sample sizes compared to those that found significant correlations, and suggest that they do not have enough power to detect the effect. Second, not only were these samples small, but two of these studies (Halford & Osgarby, 1993; Katz et al., 1995) did not over sample alcoholic participants, perhaps not capturing enough variability in alcohol use and abuse. Indeed, these studies used alcoholism screening tools rather than diagnostic tools such as the DSM, and only identified about one third of their sample as possible alcoholics.

3.2. Moderators of the relationship between alcohol use and marital satisfaction

Another explanation for null effects found by some studies is that the relation between alcohol use and abuse and marital satisfaction is different for different subgroups of alcoholic couples.

Indeed, there is evidence to suggest that the type of drinker moderates the relation between alcohol use and marital satisfaction. Dunn, Jacob, Hummon, and Seilhamer (1987) found that marital satisfaction was positively related to husbands' consumption when the husband drank primarily at home, and negatively related to consumption when the husband drank primarily out of the home. In addition, Jacob et al. (1983), who reported null effects or weak positive correlations between consumption and satisfaction for their total sample, found that total scores on the MAT and several subscales of the DAS were positively correlated with husbands' alcohol consumption for steady drinkers and uncorrelated with consumption for binge drinkers.

A recent study of "drinking partnerships" corroborated this general trend. Roberts and Leonard (1998) performed a cluster analysis on several husband and wife drinking variables and identified several drinking partnership clusters that included "husband heavy," "heavy out-of-home," "light social," "light intimate," and "frequent intimate" drinking couples. Results found that the wives' levels of marital satisfaction as measure by the MAT were significantly lower for those in the "husband heavy" and "heavy out-of-home" groups, but were equivalent across all other groups. In all, these studies suggest that light or moderate levels of alcohol use can be adaptive and help maintain a healthy level of marital satisfaction, and heavy or problem use is maladaptive. These results are consistent with those that found alcohol use to be mediated by stress, in that light patterns of use are much less likely to be accompanied by the negative consequences often experienced as a result of heavy use. Interestingly, one study found that wives' marital satisfaction was positively associated with their alcoholic husbands' report of alcohol severity (Epstein, McCrady, & Hirsh, 1997). This finding is provocative because it supports the hypothesis that alcohol use may sometimes be adaptive; however, it is inconsistent with other studies because it suggests that severe consequences of alcohol use (a composite scale of three negative alcohol consequence measures) in an alcoholic sample are associated with higher levels of satisfaction. Reasons for such inconsistency are unclear, but it may be that this positive effect is an artifact of the study recruitment procedure. That is, participants in this study consisted of *couples* that presented at a clinic seeking conjoint treatment for the male's alcohol problems (Epstein et al., 1997). It may be that the wives' level of marital satisfaction was associated more with feelings of relief that they were seeking help rather than the severity of recent negative alcohol consequences.

In sum, the majority of these studies suggest that alcohol use is maladaptive, and that marital satisfaction suffers as a result. A fairly robust trend suggests that spouses of alcoholics have lower levels of marital satisfaction than do spouses of nonalcoholics. In addition, problem use and heavy use are negatively correlated with spouses' marital satisfaction, and two studies suggested that this relation is mediated by stress due to negative alcohol-related consequences. There is some limited evidence to suggest that light or moderate patterns of use are adaptive. For example, within alcoholic samples marital satisfaction is positively correlated with spouses' alcohol consumption for in-home and steady drinkers, while it is uncorrelated or negatively correlated to alcohol consumption for binge and out-of-home drinkers.

3.3. The effects of alcohol use on marital interactions

One putative mediator of the relation between alcohol use and marital satisfaction is marital interaction patterns. Marital interactions have been used for decades to distinguish between distressed and nondistressed couples (for reviews, see Schapp, 1984; Weiss & Heyman, 1990, 1997) and are typically assessed using the Marital Interaction Coding System (MICS; Weiss, Hops, & Patterson, 1973). Affective dimensions of marital interaction (as opposed to behavioral dimensions) identified using the MICS and other measures have provided the most consistent findings (Weiss & Heyman, 1990), indicating that maritally distressed couples manifest higher levels of negativity (criticism, hostility, complaining, excuses, withdrawal, etc.) and lower levels of positivity (empathy, congeniality, smiling, humor, approval, etc.) than

nondistressed couples do. Some behavioral indices are also quite predictive, for example, indicating that nondistressed couples manifest more problem-solving behavior (providing problem descriptions, problem solutions) than distressed couples do.

3.3.1. Differences between alcoholic and nonalcoholic couples in marital interactions—

One of the primary questions in the marital interaction literature asks whether alcoholic couples exhibit different levels of positive, negative, and problem-solving behavior than do distressed couples without alcohol problems, and nondistressed, nonalcoholic couples. Jacob and Krahn (1988) conducted a study prototypic of this design by evaluating group differences in marital interaction patterns with a sample of alcoholic couples, couples with a depressed partner, and normal control couples. Prior to the interaction task, all couples completed the Areas of Change Questionnaire (ACQ; Margolin, Talovic, & Weinstein, 1983), a 34-item measure of each members' current complaints regarding their marital relationship. Couples then participated in an interaction protocol that required them to engage in several 10-minute, dyadic, conflict-resolution interaction tasks in which they were instructed to discuss a behavior they would like to see their partners change. Interactions were then coded using the MICS and coders who were blind to the nature of the study. Results showed that alcoholic and depressed couples engaged in less positive behavior and more negative behavior than did normal control couples. Four other studies using similar methods and coding procedures found similar results, indicating that alcoholic couples were characterized by more negativity (Billings, Kessler, Gomberg, & Weiner, 1979; Haber & Jacob, 1997; Jacob, Ritchey, Cvitkovic, & Blane, 1981), less positivity (Billings et al., 1979; Haber & Jacob, 1997; Jacob et al., 1981; O'Farrell & Birchler, 1987), and lower levels of problem solving (Jacob et al., 1981) than nonalcoholic couples were. Moreover, alcoholic couples were comparable to distressed, nonalcoholic couples on levels of positivity (O'Farrell & Birchler, 1987) and negativity (Billings et al., 1979).

In addition to using frequency of positive, negative, and problem-solving behaviors to assess differences between alcoholic and nonalcoholic couples, sequential interactions between partners during an interaction task have been used (see Gottman & Roy, 1990, for a review). Sequential interaction methods are useful because they can provide information about how positive and/or negative interactions escalate or deescalate over time. Escalation can occur when partners engage in positive and negative reciprocity, such that positive interaction loops or negative interaction loops are formed. Jacob and Leonard (1992) are the only researchers to date to analyze differences in sequential interaction patterns between alcoholic and nonalcoholic couples. Using the same sample and data as Jacob and Krahn (1988), Jacob and Leonard (1992) found that alcoholic husbands were less likely to respond positively and more likely to respond negatively to their wives' problem-solving efforts than were nonalcoholic husbands. Interestingly, alcoholic husbands were less likely to respond to wives' negativity with their own negativity (i.e., negative reciprocity) than were nonalcoholic couples, suggesting that alcoholics' behavior was more adaptive than nonalcoholic controls' behavior. Overall, these results suggest that alcohol couples are less positive, more negative, and engage in less problem-solving behavior than alcoholic couples do, and alcoholic couples exhibit patterns of behavior that are similar to maritally distressed couples. This does not identify alcohol consumption, per se, as the cause of these behavior patterns in alcoholic couples, but suggests that chronic alcohol problems and/or alcohol-related negative consequences associated with high levels of consumption are related to maladaptive behavioral interaction patterns.

3.3.2. Relationship between alcohol consumption and marital interactions—

Indeed, another common question that has been tested is whether acute alcohol intoxication changes the behavioral patterns of alcoholic couples and whether patterns change relative to nonalcoholic couples. Do alcoholics become more like nondistressed, happily married couples

under the influence of alcohol, or do they remain similar to maritally distressed couples? Jacob and Krahn (1988) tested the effects of alcohol consumption by making alcoholic beverages available to their participants prior to one of the interaction tasks, and then compared couples' behavior in the drink condition to the no-drink condition. Results indicated that alcoholic and control couples engaged in more negative and more positive behaviors in the drink condition than in the no-drink condition. Three other studies found similar results, indicating that in drinking conditions couples were more positive and congenial (Frankenstein, Hay, & Nathan, 1985; Haber & Jacob, 1997) and engaged in more problem-solving behaviors (Leonard & Roberts, 1998a) than in the no-drink condition. Some studies found that couples were also more negative (Leonard & Roberts, 1998a) in the drink than no-drink condition, and one study found that this is especially true for alcoholic couples, who experienced increases in negativity during the drinking condition while the nonalcoholic control couples did not (Jacob et al., 1981).

At first glance, these results are consistent with the notion that alcohol consumption serves an adaptive function, because it increases problem-solving and positive behavior between spouses. In addition, although consumption also increases negative behavior, this pattern of results is consistent with the notion that alcohol encourages the expression of a larger range of emotions, both positive and negative, which serve to temporarily relieve ongoing tensions between the alcoholic and the spouse (Steinglass et al., 1977). There is some evidence in the general marital interaction literature to support this notion. For example, some suggest that negativity might not always be negative (Weiss & Heyman, 1997), and that some negative behaviors are associated with positive outcomes (Sher & Weiss, 1991). In addition, consistent with Steinglass' claims, some behaviors might produce maladaptive short-term effects but be adaptive over the long term (Gottman & Krokoff, 1989). However, this interpretation should be employed with caution for several reasons. First, there is strong support for the notion that high levels of expressed emotion are associated with negative relationship and/or mental health outcomes. For example, high levels of expressed emotion, especially expressed negative emotion, are often indicative of maladaptive interaction patterns between family members (Hooley, 1987) and are associated with high relapse rates in married alcoholics (O'Farrell, Hooley, Fals-Stewart, & Cutter, 1998). Second, alcoholic couples are often starting with lower baseline levels of positive interactions, and although this hypothesis has not been directly tested, it suggests that increases in positive interactions due to alcohol consumption might simply raise them to "normal" levels. These positive behaviors are accompanied by increases in negative behaviors during drinking, which presumably started at levels above baseline relative to controls. It may be that the extremely high levels of negative interactions during drinking negate the positive effects of experiencing "normal" levels of positive interactions during drinking. Third, a somewhat different picture is presented when sequential interaction patterns are analyzed in drink and no-drink conditions. For example, husbands' tendency to increase problem-solving behaviors in response to wives' positivity decreased significantly in the drink condition as compared to the no-drink condition (Jacob & Leonard, 1992). The same was true for wives' responses to husbands' positivity. That is, in the drink condition, wives were less likely to increase problem-solving behaviors, and less likely to repress negativity in response to husbands' positivity than they were in the no-drink condition. Finally, there are some reasons to question the specific operational definition of problem-solving behavior—a behavior that purportedly increases in the drink condition—and whether it serves an adaptive or maladaptive role in marital interaction. For example, although it is described as behaviors that are relatively neutral in affect, it involves a variety of behaviors such as problem descriptions, positive solutions, negative solutions, compromising, and questions (Jacob & Krahn, 1988; Jacob & Leonard, 1992; Leonard & Roberts, 1998a). In other words, the problem-solving construct as coded by the MICS aggregates these behaviors regardless of their substantive contribution towards an appropriate solution. Such behavior may or may not reflect positive change (Leonard & Roberts, 1998a). For example, Leonard and Roberts (1998a) found

that aggressive men showed higher levels of problem solving than did nonaggressive men, and Leonard and Senchak (1993) found that men's problem-solving behaviors were prospectively predictive of marital violence. Indeed, these data suggest that problem-solving behaviors are positively correlated with aggression in men, and therefore cannot always be interpreted as facilitative.

3.3.3. Moderators of the relationship between alcohol use and marital interactions

Differences in marital interaction behaviors between different subtypes of alcoholics have not been tested as often in the marital interaction literature. Jacob and Leonard (1988) found no significant differences between steady and episodic drinking couples in levels of positivity, negativity, and problem solving. They did find that in the no-drink condition, episodic and steady alcoholic couples had similar levels of problem solving, whereas in the drink condition, steady alcoholics engaged in more problem solving than did episodic alcoholics. Moreover, wives of episodic alcoholics in the drink condition showed lower levels of negativity than in the no-drink condition (Jacob & Leonard, 1988). However, they exhibited higher levels of negative reciprocity in the drink than in the no-drink condition (Leonard & Jacob, 1997). Furthermore, Murphy and O'Farrell (1997) found that husbands and wives in aggressive alcoholic relationships were more likely to manifest negativity than were husbands and wives in nonaggressive alcoholic relationships. In addition, they also showed that aggressive couples were more likely to engage in negative reciprocity than nonaggressive couples were. Negative reciprocity is considered a precursor to negative escalation loops that lead to aggression (Leonard & Roberts, 1998a). These results are important because they are consistent with theories that propose that the relation between alcohol abuse and marital dissolution is mediated by marital conflict and marital violence resulting from escalating conflict (Leonard, 1993; O'Leary, 1988). Finally, a recent study evaluated the differences between high and low antisocial alcoholic husbands (Jacob, Leonard, & Haber, 2001) and found that for high antisocial alcoholics, couples were more negative in the drink condition than they were in the no-drink condition, and that the wives' negativity increased in response to the husbands' negativity. These effects were not found for the low antisocial alcoholic group. Because antisocial behavior is one of the most common constructs used to differentiate between different subtypes of alcoholics, this study has made an important step toward the external validity of these interaction effects.

In sum, overall patterns suggest that alcoholic couples were characterized by more negativity and less positivity than were nonalcoholic couples. In addition, although alcohol consumption increased positive interactions between spouses, it also increased negative interactions, and decreased positive or adaptive responses to partners' positive behavior. These patterns indicate that alcoholic couples are more similar to distressed nonalcoholic couples than they are to nondistressed, nonalcoholic couples, and suggest that alcohol has a maladaptive rather than adaptive influence on marital functioning. In addition, although only a few studies have assessed the moderating effects of alcoholic subtypes on the relation between alcohol use and abuse and marital interaction, results suggest that some differences between groups emerge, and that the maladaptive effects of alcohol are stronger for episodic and aggressive alcoholics than for steady and nonaggressive alcoholics.

Several methodological weaknesses limit our ability to draw strong conclusions about the nature of the relation between alcohol use and marital interaction. First, the most disconcerting problem in this literature is the relatively small samples that were employed (see Table 1B). While quantitative research suggests that researchers need at least 126 total participants to have enough power to detect a moderate effect size (Cohen, 1988), many more participants are needed if two- or three-way interactions are being tested. Sample sizes in the marital interaction literature range from 8 to 135, with the mean sample size of 73, making it difficult to detect main effects, let alone two- and three-way interactions. This is problematic because most of

the studies that assess differences between alcoholic and nonalcoholic couples (six in all) typically test main effects for group (alcoholic, nonalcoholic), member (husband, wife), condition (drink, no-drink), and all of the interactions between these variables. It is not surprising, then, that across three outcome variables (positivity, negativity, and problem solving) only three studies detected a three-way interaction (Haber & Jacob, 1997; Jacob & Krahn, 1988; Leonard & Roberts, 1998a), and not coincidentally, these studies had the largest samples (ranging from 107 to 135). A similar pattern can be found when testing two-way interactions. Most two-way interactions were nonsignificant, and the majority of those that were significant had samples sizes above 100 (Haber & Jacob, 1997; Jacob & Krahn, 1988). Second, despite notable efforts to evaluate and validate the psychometric properties of MICSS (see Jacob & Krahn, 1987), inconsistent coding and operational definitions of the various behavioral interaction categories across studies limits our ability to draw strong, substantive conclusions regarding the effects of alcohol use on marital interaction. Although general behavioral categories such as positivity, negativity, and problem solving were identified, they were operationalized in many different ways. For example, positivity was operationalized as positive verbal behavior, positive nonverbal behavior, congeniality, responsibility acceptance, and/or facilitative/enhancing behavior. These different operational definitions probably contributed to unreliability and measurement error across studies. Because unreliability reduces power (see Aiken & West, 1991), these measurement problems likely contributed to an inability to detect important effects. Third, only one marital interaction study employed a placebo group to test whether the effects of alcohol consumption on marital interaction were due to inebriation or whether they were due to the expectations couples have regarding the effects of alcohol consumption (Leonard & Roberts, 1998a). Although this study found that there was no placebo effect, therefore no reason to believe that interaction behavior was due to alcohol expectancies, there is reason to believe that this finding would not generalize to other studies. For example, participants in this study were targeted as “aggressive” and “nonaggressive” husbands. Alcoholic participants, on the other hand, might have different alcohol expectancies. A review of alcohol expectancy research supported the conclusion that heavy drinkers perceive the effects of alcohol to be less negative than nonheavy drinkers, and that alcohol expectancies in general vary depending on drinking patterns (Leigh, 1989).

Finally, some evidence suggests that discussing alcohol-related topics during an interaction task influences interaction behavior; however, no systematic effort to assess the effects of alcohol-related discussions has been conducted. This is important because for some couples, interactions about alcohol might occur more frequently than interactions about other topics, especially for couples in which alcohol use and abuse plays a major role in day-to-day life. For example, Halford & Osgarby (1993) reported that over 80% of men and women in their sample reported frequent disagreements about alcohol consumption. Several pieces of evidence suggest that talking about alcohol might provoke different kinds of interactions than talking about another conflict topic or about a benign topic. First, one study explicitly tested differences in behavior between alcohol- and non-alcohol-related discussions during couples’ marital interaction tasks (Becker & Miller, 1976) and found that alcoholic and nonalcoholic husbands talked more during alcohol-related than non-alcohol-related discussions, and that their wives looked at them more than they looked at their wives during alcohol-related discussions. Second, Halford and Osgarby (1993) found that marital disagreements about alcohol were strongly related to decreased levels of marital satisfaction and to increased number of steps toward divorce. Third, Weiss and Heyman (1997) suggest that distressed couples are more likely to discuss “hot topics” than are nondistressed couples, and that differences seen in the laboratory between distressed and nondistressed couples might very well be due to the nature of the topic rather than their group status. This suggests that we might see larger effects (i.e., larger differences between alcoholic and nonalcoholic couples), and therefore more consistent effects across studies, if alcoholic couples discussed alcohol-related problems.

3.4. The effects of alcohol use on marital violence

Several decades of research on the relation between alcohol use and marital violence have generated dozens of studies and at least three comprehensive reviews (Hotaling & Sugarman, 1986; Leonard, 1993; Leonard & Roberts, 1998a). The goal of this section, therefore, is not to reinvent the wheel and write a review similar in scope and objective to previous reviews. Rather, the goal of this section is to provide a review of published studies that have tested the relation between spouses' alcohol use and abuse and marital violence to assess whether alcohol use is associated with adaptive (i.e., no violence) or maladaptive levels of marital violence. Kantor and Straus (1987) have operationally defined *violence* as "an act carried out with the intention or perceived intention of causing physical pain or injury to another person" (p. 218). The most popular measure of marital violence used in the alcohol use literature is the Conflict Tactics Scale (CTS; Straus, 1979), which has demonstrated high internal validity and construct validity, and has been used in at least two national surveys (Straus & Gelles, 1986). A common conceptual distinction made by the CTS and used often in this literature is among verbal aggression (e.g., yelling, cursing), moderate physical aggression (e.g., throwing something at partner, pushing or grabbing partner), and severe physical aggression (e.g., hit, kicked, or threatened partner with a weapon). The CTS was used in over half of the marital violence articles reviewed in this article. Other studies typically use single-item or multi-item violence measures of unidentified source (Coleman, Weinman, & Hsi, 1980; Halford & Osgarby, 1993; Hutchinson, 1999; Leonard & Blane, 1992; Rosenbaum & O'Leary, 1981), and none of these reported reliability or validity data. Still, others operationalized marital violence by whether individuals were participating in a domestic violence treatment program; however, they did not provide specific entrance criteria (e.g., Hurlbert, Munoz, & Whittaker, 1991).

3.4.1. Differences between alcoholic and nonalcoholic couples in marital violence—A common study design used in this literature is to compare alcoholic and nonalcoholic couples on levels of violence. O'Farrell and colleagues took this approach (O'Farrell & Choquette, 1991; O'Farrell & Murphy, 1995) and found that alcoholic couples reported higher rates of violence than the national norms (O'Farrell & Choquette, 1991) and higher rates than a normal control group (O'Farrell & Murphy, 1995; Leonard, Bromet, Parkinson, Day, & Ryan, 1985). Three other studies found similar results, indicating that men who were more frequently drunk were more likely to be verbally and physically violent toward their partners (Coleman & Straus, 1983; Hutchinson, 1999; Kantor & Straus, 1989).

3.4.2. Relationship between alcohol consumption and marital violence—Another common approach in the violence literature is to compare violent and nonviolent couples on levels of alcohol use and abuse. Leonard and Roberts (1998a) conducted a study prototypic of this design. They recruited 60 aggressive and 75 nonaggressive men from a previous research program and from the community using newspaper advertisements. Couples were considered aggressive if they engaged in two or more aggressive episodes that did not include physical violence or one or more episodes of husband-to-wife aggression that included a serious aggressive act (a slap or greater). Their results indicated that the aggressive husbands had higher levels of alcohol dependence and consumed more alcohol than did the nonaggressive group. Ten of the 11 violent–nonviolent group studies in Table 1C showed similar results. Compared to nonviolent husbands, violent husbands reported higher levels of problem drinking (Hurlbert et al., 1991; Julian & McKenry, 1993; Murphy & O'Farrell, 1994; Rosenbaum & O'Leary, 1981; Van Hasselt, Morrison, & Bellack, 1985), more frequent alcohol consumption (Coleman et al., 1980), higher quantities of alcohol consumption (Barnett & Fagan, 1993; Leonard & Roberts, 1998a; Rodriguez, Lasch, Chandra, & Lee, 2001), and an earlier onset of problem drinking (Murphy & O'Farrell, 1994, 1997). Finally, two studies found similar results using multivariate regression analyses, such that alcohol problems and alcohol use were associated with marital violence prospectively (Leonard & Quigley, 1999; Leonard & Senchak, 1993).

3.4.3. Moderators of the relationship between alcohol use and marital violence

—Several studies suggest that the relation between alcohol consumption and marital aggression is moderated by interpersonal and intrapersonal factors. For example, there is consistent evidence to suggest that alcohol use/abuse is positively correlated with marital aggression for couples with low levels of marital satisfaction and unrelated for those with high levels of satisfaction (Leonard & Blane, 1992; Leonard & Senchak, 1993; Margolin, John, & Foo, 1998). Similar effects are found for other moderators such that alcohol use and abuse is positively related to marital aggression at high levels of marital conflict (Quigley & Leonard, 1999), negative life events (Margolin et al., 1998), and negative affect (Leonard & Blane, 1992), and unrelated at low levels. Interestingly, one study showed that problem alcohol use is associated with violence at low levels of drug use, but not at high levels (Miller et al., 1990). Husbands' hostile personality traits also increased the relation between alcohol use/abuse and marital aggression (Heyman, O'Leary, & Jouriles, 1995), particularly when satisfaction levels were low (Leonard & Blane, 1992) or when the husband believed that aggression was permissible (Kantor & Straus, 1987), and this was especially true when the alcoholic is drinking (Leonard & Senchak, 1993). Finally, there is some evidence to suggest that aggressive and nonaggressive alcoholic husbands have different drinking styles that might influence whether alcoholics engage in aggressive behavior. For example, nonaggressive alcoholics are more likely than aggressive alcoholics to have steady drinking patterns, and are less likely to drink outside of the home (Murphy & O'Farrell, 1994). These drinking patterns might serve as protective factors because they can be associated with higher levels of marital satisfaction and increases in husband problem-solving behavior while drinking (Jacob et al., 1983; Jacob & Leonard, 1988). The moderating effects of level of use are also observed when comparing different levels of diagnosis. For example, men with alcohol dependence were more likely to report marital violence than men diagnosed with misuse or with no diagnosis. Moreover, alcoholics who report recent alcoholism symptoms were more likely to report marital violence than recovered alcoholics and participants with no diagnosis (Leonard et al., 1985). The effects of acute binge or very heavy drinking on marital violence, however, might be different than their effects on marital satisfaction or interaction. For example, two studies show that alcohol use might be curvilinearly related to violence, such that when husbands' engage in very heavy or binge drinking (Coleman & Straus, 1983; Hutchinson, 1999; Neff et al., 1995), marital violence actually decreases. Reasons for this are unclear, but some suggest that the alcoholic husband is too inebriated to engage in violent behavior.

Overall, there is very little evidence to suggest that alcohol use is associated with adaptive levels of marital violence. On the contrary, for certain couples, alcohol use is associated with higher levels of violence that are detrimental to successful marital functioning. These conclusions should be interpreted with some caution due to several methodological limitations. First, of primary concern is the overreliance on treatment-based samples (Leonard, 1993). Couples in treatment-based samples are considered inherently different from couples recruited through other sources because they are typically characterized by more severe and acute psychiatric and psychosocial problems. Indeed, 40% of the violence studies in Table 1C (and all but one of the studies that compared violent and nonviolent control groups) were recruited from treatment sources, raising concerns that the differences between groups were not due to alcohol, but to other characteristics of the sample that might be correlated with marital violence. Second, this concern is exacerbated by the fact that very few (4 of 22 independent samples) studies that test the relation between alcohol use and marital violence excluded couples with other concurrent, comorbid psychiatric diagnoses, or statistically controlled for such diagnoses. Doing so would increase confidence that the effects reported are specific to alcoholism rather than symptoms related to comorbid psychopathology. Third, in the current review, the recruitment source is confounded with the methods and statistical techniques employed to assess the relationship between alcohol use and marital violence. All of the studies that test moderators of this relation employed community-based samples and tested direct and

moderating effects of alcohol use without distinguishing between violent and nonviolent groups. Thus, little is known about the moderating effects of inter- and intrapersonal variables in treatment-based samples. Ironically, couples in treatment-based samples would benefit from efforts to identify modifiable moderators (e.g., alcohol expectancies) that would serve to reduce the effects of alcohol use on violent interactions. Finally, an important methodological weakness of the violence literature in particular, and the spousal alcoholism literature in general, is that the majority of the studies assess the relationship between the *husbands'* alcohol use and marital functioning. The next section, therefore, will summarize the effects of wives' alcohol use on marital functioning.

4. The effects of wives' alcohol use on marital functioning

Gender differences in the effects of alcohol use on marital functioning are suspected due to gender differences in the etiology, psychiatric comorbidity, course, and consequences of alcohol use and alcoholism (see Halford et al., 1999; Wilsnack & Wilsnack, 1997). Although gender differences in alcoholism are receiving increased attention, little is known about differences in the context of the marital relationship (McCrady, 1990; Roberts & Leonard, 1997). Indeed, very few studies have evaluated the association between wives' alcohol use and marital functioning, and even fewer have evaluated the association between concordant alcohol use and marital functioning. For this reason, the following review should be considered preliminary and interpreted with caution.

Because marital satisfaction is an intrapersonal measure of marital functioning, the effects of wives' alcoholism on husbands' marital satisfaction were of primary interest. These effects have been tested in a couple of different ways. Two studies compared husbands with nonalcoholic wives to husbands with "heavy drinking" wives and found no differences in levels of marital satisfaction (McLeod, 1993; Perodeau & Kohn, 1989). In addition, female alcoholics and their husbands reported higher levels of marital satisfaction than male alcoholics and their wives (Noel, cCrady, Stout, & Fisher-Nelson, 1991). These results stand in stark contrast with the robust, maladaptive effects of husbands' alcoholism, and suggest that wives' alcohol use might be less maladaptive than husbands' alcohol use; however, they are limited by a few methodological shortcomings. For instance, the use of single-item marital satisfaction variables (McLeod, 1993) and single-item heavy alcohol use items (McLeod, 1993; Perodeau & Kohn, 1989) raises questions about the reliability and validity of the measures. Interestingly, Leonard and Roberts (1998b) reported that wives' daily consumption was positively correlated with a composite score of husbands' and wives' marital satisfaction; however, wives' problem use (heavy use and alcohol dependence) was negatively correlated with the composite score of couples' satisfaction, and with the husbands' own marital satisfaction. This pattern is consistent with the relation between husbands' alcohol use and wives' marital satisfaction reviewed earlier (e.g., Jacob & Krahn, 1988), suggesting that patterns of light use might serve an adaptive function in the marriage, and patterns of problem use might serve a maladaptive function.

Three studies assessed the relation between alcoholism and marital interactions in female alcoholic couples and reported inconsistent results. Noel et al. (1991) reported that female alcoholics engaged in higher levels of positivity and lower levels of negativity toward their spouses than did male alcoholics. Another study found that maritally distressed, female alcoholics and their spouses showed levels of positive verbal behaviors that were similar to normal control couples and higher than distressed nonalcoholic couples during a conflict resolution interaction task; however, spouses of alcoholics engaged in more negative verbal behavior (e.g., criticism) than did normal control spouses (Kelly, Halford, & Young, 2002). Others suggest that female alcoholic couples were more negative and less positive than male alcoholic couples and normal control couples were (Haber & Jacob, 1997) and that female alcoholic couples manifested similar levels of negativity than those of male alcoholic couples

and controls in the drink condition. The reasons for this discrepancy and the conclusions that can be drawn are unclear. One explanation may be that when comparing across individual level behavior rather than couple-level behavior gender differences emerge. That is, it may be that higher levels of positivity exhibited by female alcoholics (Noel et al., 1991) are characteristic of females in general, rather than female alcoholics. Indeed, women tend to manifest higher levels of positivity regardless of group status (Haber & Jacob, 1997; Jacob & Krahn, 1988; Jacob et al., 1981; Murphy & O'Farrell, 1994; O'Farrell & Birchler, 1987). Nevertheless, more research with female alcoholics is necessary before conclusions can be drawn about the adaptive versus maladaptive effects of wives' alcoholism on marital interaction.

The data on the relation between females' alcohol use and marital violence, on the other hand, are a little clearer. In general, studies show that indicators of wives' heavy use (frequency of times drunk, heavy drinking) are positively correlated with premarital aggression (Leonard & Senchak, 1993) and marital aggression (Kantor & Straus, 1989; Leonard & Roberts, 1998b). In addition, women with alcohol problems were more likely to experience marital violence than were women without alcohol problems (Miller, Downs, & Gondoli, 1989; Neff et al., 1995). Once again, these data suggest that (heavy) alcohol use plays a maladaptive role in marital relationships, being associated with high levels of moderate and severe marital violence. Interestingly, there is some evidence to suggest that wives' alcohol use can curb marital violence and that it might serve an adaptive role as well. Leonard and Roberts (1998b) found that wives' average daily consumption was negatively related to marital aggression, which was consistent with the relation between wives' daily consumption and marital satisfaction in the same sample. If this "average daily consumption" measure captures light or steady use patterns, then these results would be consistent with those that suggest light drinking patterns might facilitate healthy relationship functioning.

5. Concordant drinking and marital functioning

Evaluating the role of alcohol use in marriages in which both partners drink is particularly important because husband and wife drinking patterns might influence each other, and because concordant drinking might be an epiphenomenon of other, more global patterns partner selection and influence such as assortative mating (see Leonard & Das Eiden, 1999). Nevertheless, only seven studies assessed the relation between husbands' and wives' concordant drinking and their effects on marital functioning. Simple descriptive data using a national probability sample indicated that 8% of the couples that experienced marital violence reported alcohol consumption by both partners prior to the event (Kantor & Straus, 1989). Haber and Jacob (1997) described two different hypotheses that predict adaptive versus maladaptive outcomes in concordant drinking couples. Adaptive outcomes might be observed in concordant couples because attitudes and behaviors regarding alcohol are similar and thus do not serve to divide them. Maladaptive marital outcomes might be observed, on the other hand, if stressors that are associated with alcohol use are, in effect, doubled, and are manifested through poor marital interaction patterns between spouses. Their results supported the second hypothesis, showing that concordant couples were more negative than male alcoholic and normal control couples and less positive and congenial than normal control couples. In addition, while female alcoholic couples with a nonalcoholic husband decreased their negativity in the drink condition, concordant couples increased their negativity in the drink condition. Similar findings were reported with respect to the effects of concordant drinking on wives' marital satisfaction. For example, wives in concordant couples reported lower levels of marital satisfaction than did wives of alcoholic husbands (McLeod, 1993; Perodeau & Kohn, 1989) and normal controls (McLeod, 1993).

Husbands in concordant drinking couples, on the other hand, either reported negligible differences between groups (McLeod, 1993) or reported higher levels of satisfaction than

alcoholic men who were married to nonalcoholic women (Perodeau & Kohn, 1989). Results from a recent study on husband-to-wife violence are consistent with these findings. Quigley and Leonard (2000) found an interaction between husbands' and wives' alcohol consumption, such that violence was lower if they both drank heavily than it was if the husband drank heavily and the wife did not. Violence levels were lowest when both were light drinkers. Two other studies found similar results, showing higher levels of violence (Leadley, Clark, & Caetano, 2000) and lower levels of marital satisfaction (Mudar, Leonard, & Soltysinski, 2001) in discordant couples than in nondiscordant couples, and these results were consistent across heavy drinking, frequency of intoxication, and drug use variables (Mudar et al., 2001).

Another plausible hypothesis that is not often discussed in the concordant literature is that both adaptive and maladaptive processes are operating concurrently. For example, it could be that one spouse uses alcohol as a mechanism to cope with the negative consequences of his or her partner's alcoholism. There is some limited evidence for this hypothesis. For example, one study found that the wives' number of "steps toward divorce" as measured by the Marital Status Inventory (MSI; Weiss & Cerreto, 1980) was positively correlated with the husbands' alcohol consumption, however it was negatively correlated with her alcohol consumption (Halford & Osgarby, 1993). Perhaps alcohol use in this sample of wives served as a buffer to the stressors associated with being in a dysfunctional, alcoholic marriage. In sum, these studies present a relatively mixed picture, such that the association between concordant alcohol use and marital functioning can sometime be adaptive and sometimes maladaptive and that there is some evidence that these processes might be dependent on one another. Reasons for the unreliability of effects across studies are unclear, but may be due to methodological shortcomings such as small sample sizes, poorly defined variables, and a lack of data that elucidate under which conditions these effects occur. For example, these effects might be dependent on levels of other contextual factors such as where the couples drink, who they drink with including whether they drink with each other (see Leonard & Mudar, in press), and whether there is a presence of other maladaptive behaviors or disorders, for example, depression, aggression, and antisocial behavior. Much more research on the effects of concordant alcoholism on marital functioning should be conducted before drawing definitive conclusions.

6. Summary and conclusions

Several decades of research on the effects of alcohol use on marital functioning have been guided primarily by two theoretical hypotheses. The first states that alcohol use is a maladaptive stressor that causes problems in the marital relationship and contributes to marital dysfunction and subsequent dissolution. The second states that alcohol use is an adaptive mechanism that facilitates affective expression and relieves ongoing daily tension between partners, in effect, maintaining the relationship. Three questions have been posed and tested in this literature to test these competing hypotheses: (a) Do alcoholic marriages differ from nonalcoholic marriages in their quality of marital functioning? (b) Is alcohol consumption related to marital functioning? (c) What theoretical and methodological factors moderate the relation between alcohol consumption and marital functioning?

This review suggests that there is an overwhelming amount of evidence for the conclusion that spousal alcoholism is maladaptive, and that heavy and problematic alcohol use is associated with lower levels of marital satisfaction, higher levels of maladaptive marital interaction patterns, and higher levels of marital violence. The fact that these results are observed across several marital functioning domains and several study design characteristics bolsters the robustness and reliability of this effect. For example, studies using intraindividual measures of marital satisfaction (e.g., MAT; Locke & Wallace, 1959) were consistent with those using unbiased observers' ratings of marital interaction (e.g., MICS; Weiss, Hops, & Patterson, 1973). In addition, the findings from samples that were recruited from courtordered violence

treatment programs (Barnett & Fagan, 1993) were consistent with those from samples recruited through newspaper advertisements in the local paper (Jacob & Krahn, 1988). Finally, maladaptive outcomes are observed in male-alcoholic couples, femalealcoholic couples, and concordant couples.

Interestingly, there is also some limited evidence to suggest that alcohol use can serve an adaptive function in the marital relationship. This evidence was also robust in the sense that it was also observed in all three marital functioning domains (e.g., Frankenstein et al., 1985; Jacob et al., 1983; Leonard & Roberts, 1998b), within (Haber & Jacob, 1997) and across (Jacob & Krahn, 1988) alcoholic and nonalcoholic subgroups, during acute intoxication induced in the laboratory (Frankenstein et al., 1985) and using self-reported pencil-and-paper measures (Roberts & Leonard, 1998), and in distinctly different demographic populations, for example, in a community sample of newlywed couples (Leonard & Roberts, 1998b) versus a treatment sample of relatively older alcoholics who had been married an average of 17 years (Jacob et al., 1983). Although these results should be considered tentative until further research can contribute to the reliability of the results, they provide some limited empirical evidence to support Steinglass' theory.

The effects of alcohol use on marital functioning is moderated by the level of consumption. A fairly clear and consistent pattern emerges when comparing adaptive and maladaptive effects, such that when adaptive results were found, they were almost invariably in the context of light to moderate drinking patterns. In contrast, maladaptive results are found when comparing alcoholic couples to nonalcoholic couples, or when testing the relation between heavy-use patterns and marital functioning. Future research should attempt to test these moderating effects, by testing curvilinear effects of alcohol consumption or by testing the interaction between alcohol consumption and alcohol-related typologies. Empirical support for these moderating effects will help determine whether they are strong enough to warrant further exploration. Nevertheless, this curvilinear hypothesis is consistent with other literatures that have evaluated the positive and negative effects of alcohol use. For example, several decades of research have shown that moderate levels of alcohol use, as opposed to abstinence or heavy use, are associated with cardiovascular health and decreased mortality rates associated with coronary heart disease (see Klatsky, 1994). Given these possible health benefits of moderate alcohol use, and the association between physical health and well-being and positive marital functioning (Burman & Margolin, 1992), it may be possible that personal health and well-being mediates the relationship between moderate levels of alcohol use and interpersonal functioning.

Furthermore, a long line of research has shown that moderate levels of alcohol use are associated with stress-dampening effects, whereas light and heavy patterns of use are associated with behavioral activation and stress induction (see Greeley & Oei, 1999). The adaptive effects found in this review could be preliminary evidence to suggest that the typical stressors that married couples endure as a function of a normal marital relationship are dampened by moderate alcohol use, thereby showing positive effects on measures of marital functioning. It is important to note that the nature of this curve might depend on the marital functioning variable. For example, descriptive data suggests that at very high levels of use, violence decreases (Coleman & Straus, 1983; Hutchinson, 1999; Neff et al., 1995), perhaps because the alcoholic is incapacitated. Given these potentially different trends, it will be important for future research to compare and contrast the nature of the alcohol effect across marital functioning outcomes, and important for researchers and theorist to assume that variability in this effect exists, despite the message unintentionally implied by the broad conclusions drawn in this review, that the negative alcohol effects are somewhat homogeneous across marital functioning domains.

6.1. Evidence for causal inference

A secondary goal of this review is to evaluate evidence to support a causal relation between spouses' alcohol use and abuse and marital functioning. Decisions about whether alcohol use and abuse has an adaptive or maladaptive effect on marital functioning implies that alcohol use and abuse *causes change* in marital functioning. While this hypothesis is relatively intuitive, alternative hypotheses are plausible. For example, some suggest that marital functioning causes alcohol problems, not the other way around (Jacob, 1992), and other suggest that alcohol use and abuse are correlated with marital functioning, but not its cause (Gelles, 1993). There are three commonly used criteria for establishing causal inference between two variables: (a) an observed relation between variables, (b) evidence that the relation is not spurious, and (c) temporal precedence of the cause to the effect (see Shadish et al., 2002). The results from the preceding review provide strong evidence to support criteria "a," that there is a fairly consistent statistical relationship between alcohol use and marital functioning across studies. The jury is still out regarding whether the alcohol effect is spurious (criteria "b"). As noted previously, the majority of studies do not employ exclusion criteria and/or covariates in their statistical models that would increase confidence that the effects observed are specific to alcohol use and alcoholism; however, given that the results from these less rigorous studies were more or less consistent with those that employed more rigorous designs, the difference may only be a matter of degree. Finally, while criteria "c," establishing temporal precedence of the cause to the effect, is important to inferring causality, only 13% of the satisfaction studies (3/24) and 24% (7/29) of the violence studies evaluated the prospective effects of alcohol use. Although none of the interaction studies measured alcohol use prospectively, many of the interaction studies administered alcohol to their participants and tested the acute effects of alcohol use on marital interaction patterns rather than the effects of chronic alcohol problems. This experimental design might be the strongest and clearest demonstration of temporal precedence in the marital functioning literature, and shows that when alcohol is administered to alcoholic couples prior to an interaction task, behavioral interactions change. Nevertheless, these methodological limitations across studies show that despite the relatively consistent finding that alcohol use is associated with marital functioning, more research is needed to make strong causal statements about this effect.

6.2. Implications for clinical intervention

Decades of research on the treatment of alcohol problems in couples have generated several effective therapeutic models to help treat alcoholic couples (for examples, see McCrady & Epstein, 1995a, 1995b; O'Farrell & Rotunda, 1997). These models and the intervention procedures are highly consistent with the results of this empirical review, by assuming that alcohol use and alcoholism are maladaptive, and suggesting that measures of marital satisfaction, interaction, and violence are primary assessment domains that serve as gauges for the status of an alcoholic marriage. Because a thorough review and critique of these intervention procedures is beyond the scope of this review, only a few relevant points will be made. First, some researchers highlight the problems encountered during treatment when alcohol problems are discussed, stating that "the first few sessions focus on decreasing alcohol-related feelings and interactions and increasing positive exchanges" (O'Farrell & Rotunda, 1997, p. 563). Other intervention techniques use alcohol-related topics as "vehicles" (McCrady & Epstein, 1995a, 1995b) for addressing communication deficits and teaching adaptive communication skills. The marital interaction literature reviewed in this article, however, provides us with very little information about how alcohol discussions might influence communication patterns. It may be that alcohol discussion tasks are even more negative and less positive than discussions about relatively benign topics. In addition, the effects of acute alcohol intoxication on subsequent interaction patterns might be more salient and negative during alcohol-related discussions. Since alcohol-related discussions are primary components of clinical interventions, they might

benefit from marital interaction research with alcoholic couples that systematically assesses the effects of alcohol-related discussions on marital interaction patterns.

Second, some caution is warranted for alcohol treatment strategies that encourage alcoholics to temporarily reduce alcohol intake to moderate levels as a step towards abstinence, because different types and levels of drinking have different marital functioning consequences. Two things might happen if a drinker were to decrease from heavy drinking patterns to moderate drinking patterns. First, some studies show that marital violence is higher at moderate levels than at heavy levels of drinking (Coleman & Straus, 1983; Hutchinson, 1999), raising concerns that this transition might increase marital problems. Second, other studies show that moderate levels of drinking are sometimes associated with higher levels of marital satisfaction (Dunn et al., 1987; Jacob et al., 1983; Leonard & Roberts, 1998b), which could mislead the couple into believing that their problems have been solved and that continuation in therapy is unnecessary. Clearly, some intervention strategies can use moderation effectively as a step towards abstinence and are justified in proceeding with caution in the event that these unwanted marital side effects might be elicited.

6.3. Limitations of current research and future directions

Despite the strong evidence in support of the maladaptive hypothesis, and the many strengths of this literature overall, many of these studies are characterized by methodological limitations that threaten the internal and external validity of their results. Many of these limitations applied to specific subsets of studies and were already discussed in relative detail, including small sample sizes, poor measurement quality, over reliance on treatment samples, failure to employ placebo groups to control for expectancy effects, and a failure to systematically evaluate the effects of alcohol related topics during marital interaction tasks. Other limitations of this literature transcend specific study design or marital outcome subgroups and include a striking dearth of studies that evaluate the effects of wives' alcohol use and concordant alcohol use on marital functioning, the relationship between alcohol use and one's own marital functioning, relatively few systematic attempts to rule out alternative hypotheses regarding the specificity and directionality of the alcohol effect, and an oversampling of older, Caucasian couples who are in well-established marriages. Recent research by Leonard and colleagues is a notable exception, however, and has made special efforts to assess the longitudinal effects of alcohol use on marital violence in young newlywed couples with a higher than average proportion of non-Caucasian participants (see Leonard & Roberts, 1996, for a review), to evaluate the role of wives' drinking on marital outcomes, and to investigate the role of ethnicity in alcohol involvement and the transition to marriage (Mudar, Kearns, & Leonard, 2002).

Furthermore, only a handful of satisfaction and violence studies have systematically identified and tested mediators and moderators of the alcohol effect (Dumka & Roosa, 1993; Kantor & Straus, 1987; Leonard & Blane, 1992; Leonard & Senchak, 1993; Margolin et al., 1998; Quigley & Leonard, 1999; Zweben, 1986). Future research should use these studies as a point of departure for identifying empirically supported risk and protective factors that can be targeted in future prevention and intervention programs and for developing theoretical models of risk and resilience to alcohol problems that contribute specifically to marital success and/or dissolution processes. Potential mediators should be explored for both adaptive and maladaptive processes. For example, the adaptive effects of alcohol use may be mediated by positive interpersonal/social expectancies associated with alcohol use, increases in positive affect, decreases in perceived stress, and perhaps from the physical health benefits associated with moderate alcohol use. The maladaptive effects of heavy or problematic alcohol use and alcoholism may be explained by the common stressors associated with the negative consequences of heavy use (e.g., problems at work, problems with social network members), cognitive/intellectual impairments while drinking heavily that could impair communication

skills (Leonard & Roberts, 1998a) or preoccupation with alcohol use behavior that might cause an alcoholic to neglect his or her interpersonal relationships. Moreover, it is important to characterize the causal relationships among the various marital functioning domains. For example, alcohol use may be associated with interpersonal violence because the alcoholic is disinhibited, but it may also be due to low satisfaction levels and an inability to communicate effectively with a partner. A few researchers have begun to elucidate these relationships (e.g., Quigley & Leonard, 1999).

Another serious limitation of the current research is that very few studies assess effects of alcohol use prospectively (Leonard & Rothbard, 1999). Longitudinal studies are important for several reasons. First, establishing temporal precedence of alcohol use and abuse increases our confidence that there is a causal relation between alcohol and marital functioning. Second, longitudinal studies would allow researchers to test the reciprocal effects of this relation. That is, a host of research and theory in the literature suggests that poor marital functioning is likely to cause drinking problems rather than the other way around (see Halford et al., 1999; Jacob, 1992), and it is likely that they are influencing each other over time. Third, longitudinal studies would provide the opportunity to observe the effects of alcohol use and marital functioning on subsequent dissolution. While there are several longitudinal studies that assess the effects of the transition into and out of marriage on rates of alcohol use and abuse (see Leonard & Rothbard, 1999, for a review), and over 100 longitudinal studies of marital quality and stability (Karney & Bradbury, 1995), no studies have observed alcohol and marital functioning variables over time and tested how they contribute to marital dissolution. Indeed, several studies in this review found that alcohol use and abuse was related to dissolution “potential” in married couples (Halford & Osgarby, 1993; Katz et al., 1995; O’Farrell & Birchler, 1987; Perodeau & Kohn, 1989) as measured by the MSI. In addition, one of the most comprehensive theoretical and empirical models of dissolution suggests that marital satisfaction, interaction, and violence are central components of the dissolution process (Gottman, 1994). Given the strong association between alcohol use and these marital processes, longitudinal studies that evaluate their course over time and their contribution to dissolution are paramount.

6.4. A heuristic model of alcohol use and marital functioning

Despite the advantages of using the adaptive and maladaptive hypotheses as heuristics for guiding past research (and as an interesting storyline in this review), most researchers and clinicians would agree that they grossly oversimplify what are considered highly complex phenomena. For example, the role that alcohol use plays in interpersonal aggression alone has been observed for hundreds of years, has been the topic of dozens of theoretical and/or empirical reviews, and almost as many explanatory models that include, but are not limited to cognitive, behavioral, systemic, expectancy, personality, biological/pharmaceutical, and social/contextual theories (see Kantor & Straus, 1986; Pernanen, 1976, for reviews). It is no surprise, then, that comprehensive theoretical models of risk that attempt to explain all of the possible mechanisms by which alcohol use contributes to marital success or failure are elusive.

Nevertheless, researchers and clinician may benefit from a conceptual guide that can be used to replicate and build upon the studies evaluated in this review. The heuristic model proposed in Fig. 1 is meant to be a modest step toward this end. The central purpose of the model is to provide a pragmatic framework that is broad enough to encompass the multiple factors that may play a role in the alcoholic marriage, but also detailed enough that it can serve as a mechanism for articulating and testing specific hypotheses regarding the longitudinal, bidirectional, moderated, and mediated pathways of risk and protection that are accumulating in this literature. It is not meant to be exhaustive; rather, it is meant to serve as a foundation and springboard for future studies, and as a point of departure for more elaborate, comprehensive theoretical models of risk. For example, the majority of the studies evaluated

in this review tested the direct effects of alcohol use on marital satisfaction (path “a”) or interaction and violence (path “b”). Other studies went one step further by testing interactions between alcohol use and risk or protective factors represented by paths “c” and “d” (Kantor & Straus, 1987; Leonard & Blane, 1992; Leonard & Senchak, 1993; Margolin et al., 1998; Quigley & Leonard, 1999; Zweben, 1986), or by testing mediated effects represented by paths “e” and “f” (Dumka & Roosa, 1993, 1995). However, no studies have attempted to identify multiple mediated pathways of risk from alcohol use to divorce, or pathways that evaluate the relationships among the various marital functioning domains in the context of alcohol use and divorce (paths g, h, i, and j). Such pathways are important because they can serve as building blocks for larger, more comprehensive theoretical models, and as targets for intervention and prevention studies that aim to reduce marital problems, drinking problems, or both. Future studies that (a) evaluate risk and protective mechanisms via mediator and moderator models delineated in Fig. 1, (b) account for covariates that might threaten the specificity of the alcohol effect (path k), (c) attempt to model the bidirectional effects between alcohol use and marital functioning, and (d) attempt to incorporate multiple marital functioning domains over time to evaluate their relative and interactive effects on marital success and dissolution will make generous contributions to the literature.

Acknowledgements

This review was supported in part by grants from the National Institute on Mental Health (MH12010) and the National Institute of Alcohol Abuse and Alcoholism (F31-AA13217). The author would like to thank Drs. Laurie Chassin, Manuel Barrera, Ken Leonard, Susan Somerville, Nancy Russo, Larry Dumka, Frank Lotrich, Tad Gorske, Christopher Martin, Mary Amanda Dew, and Joshua Miller for their helpful guidance and feedback.

References

- Aiken, L.; West, S. Multiple regression: Testing and interpreting interactions. Newbury Park, CA: Sage; 1991.
- Babor, TF.; Hesselbrock, V.; Meyer, RE.; Shoemaker, W. Types of alcoholics: Evidence from clinical, experimental, and genetic research. New York: New York Academy of Sciences; 1994.
- Barnett OW, Fagan RW. Alcohol use in male spouse abusers, and their female partners. *Journal of Family Violence* 1993;8:1–25.
- Becker JV, Miller PM. Verbal and nonverbal marital interaction patterns of alcoholics and nonalcoholics. *Journal of Studies on Alcohol* 1976;37:1616–1624. [PubMed: 1003977]
- Billings AG, Kessler M, Gombert CA, Weiner S. Marital conflict resolution of alcoholic and nonalcoholic couples during drinking and nondrinking sessions. *Journal of Studies on Alcohol* 1979;40:183–195. [PubMed: 449342]
- Burman B, Margolin G. Analysis of the association between marital relationships and health problems: An interactional perspective. *Psychological Bulletin* 1992;112:39–63. [PubMed: 1529039]
- Caetano R, Clark CL. Trends in alcohol consumption patterns among Whites, Blacks and Hispanics: 1984 and 1995. *Journal of Studies on Alcohol* 1998;59:659–668. [PubMed: 9811087]
- Cohen, J. Statistical Power for the Behavioral Sciences. Vol. 2nd ed.. Hillsdale, NJ: Erlbaum; 1988.
- Clark, WB.; Hilton, ME. Alcohol in America. New York: State University of New York; 1991.
- Coleman, DH.; Straus, MA. Alcohol abuse and family violence. In: Gottheil, E.; Druley, KA.; Skolada, TE.; Waxman, HM., editors. Alcohol, drug abuse and aggression. Springfield, IL: Charles C. Thomas; 1983. p. 104-124.
- Coleman KH, Weinman ML, Hsi BP. Factors affecting conjugal violence. *Journal of Psychology* 1980;105:197–202. [PubMed: 7400986]
- Curran PJ, Muthen BO, Harford TC. The influence of changes in marital status on developmental trajectories of alcohol use in young adults. *Journal of Studies on Alcohol* 1998;59:647–658. [PubMed: 9811086]
- Dumka LE, Roosa MW. Factors mediating problem drinking and mothers’ personal adjustment. *Journal of Family Psychology* 1993;7:333–343.

- Dumka LE, Roosa MW. The role of stress and family relationships in mediating problem drinking and fathers' personal adjustment. *Journal of Studies on Alcohol* 1995;56:528–537. [PubMed: 7475033]
- Dunn NJ, Jacob T, Hummon N, Seilhamer RA. Marital stability in alcoholic-spouse relationships as a function of drinking pattern and location. *Journal of Abnormal Psychology* 1987;96:99–107. [PubMed: 3584673]
- Epstein EE, Kahler CW, McCrady BS, Lewis KD, Lewis S. An empirical classification of drinking patterns among alcoholics: Binge, episodic, sporadic, and steady. *Addictive Behaviors* 1995;20:23–41. [PubMed: 7785480]
- Epstein EE, McCrady BS, Hirsh LS. Marital functioning in early versus late-onset alcoholic couples. *Alcoholism: Clinical and Experimental Research* 1997;21:547–556.
- Escallier-Nicola E, Botwin DE, Tarter RE. The influence of psychosocial variables on male adolescents at risk for alcoholism. *Journal of Child and Adolescent Substance Abuse* 1994;3:1–8.
- Frankenstein W, Hay WM, Nathan PE. Effects of intoxication on alcoholics' marital communication and problem solving. *Journal of Studies on Alcohol* 1985;46:1–6. [PubMed: 3974232]
- Gelles, RJ. Alcohol and other drugs are associated with violence—They are not its cause. In: Gelles, RJ.; Loseke, DR., editors. *Current controversies on family violence*. Newbury Park, CA: Sage; 1993. p. 182-196.
- Gotlib, IH.; McCabe, SB. Marriage and psychopathology. In: Fincham, FD.; Bradbury, TN., editors. *The psychology of marriage: Basic issues and applications*. New York: Guilford Press; 1990. p. 226-257.
- Gottman, JM. What predicts divorce?: The relationship between marital processes and marital outcomes. Hillsdale, NJ: Erlbaum; 1994.
- Gottman JM, Krokoff LJ. Marital interaction and satisfaction: A longitudinal view. *Journal of Consulting and Clinical Psychology* 1989;57:47–52. [PubMed: 2487031]
- Gottman, JM.; Roy, AK. *Sequential analysis: A guide for behavioral researchers*. New York: Cambridge University; 1990.
- Greeley, J.; Oei, T. Alcohol and tension reduction. In: Leonard, KE.; Blane, HT., editors. *Psychological theories of drinking and alcoholism*. Vol. 2nd ed.. New York: Guilford Press; 1999. p. 14-53.
- Haber JR, Jacob T. Marital interactions of male versus female alcoholics. *Family Process* 1997;36:385–402. [PubMed: 9543660]
- Halford WK, Bouma R, Kelly A, Young R McD. Individual psychopathology and marital distress: Analyzing the association and implications for therapy. *Behavior Modification* 1999;23:179–216. [PubMed: 10224948]
- Halford WK, Osgarby SM. Alcohol abuse in clients presenting with marital problems. *Journal of Family Psychology* 1993;6:245–254.
- Helzer, JE.; Burnam, LN.; McEvoy, LT. Alcohol abuse and dependence. In: Robins, LN.; Reiger, DA., editors. *Psychiatric disorders in America. The epidemiologic catchment area study*. New York: Free Press; 1991. p. 81-115.
- Helzer JE, Pryzbeck JR. The co-occurrence of alcoholism with other psychiatric disorders in the general population and its impact on treatment. *Journal of Studies on Alcohol* 1988;49:219–224. [PubMed: 3374135]
- Heyman RE, O'Leary KD, Jouriles EN. Alcohol and aggressive personality styles: Potentiators of serious physical aggression against wives? *Journal of Family Psychology* 1995;9:44–57.
- Hooley, JM. The nature and origins of expressed emotion. In: Hahlweg, K.; Goldstein, MJ., editors. *Understanding major mental disorder: The contribution of family interaction research*. New York: Family Process; 1987. p. 176-194.
- Hotaling GT, Sugarman DB. An analysis of risk markers in husband to wife violence: The current state of knowledge. *Violence and Victims* 1986;1:101–124. [PubMed: 3154143]
- Hurlbert DF, Munoz CJ, Whittaker KE. Etiological characteristics of abusive husbands. *Military Medicine* 1991;156:670–675. [PubMed: 1780068]
- Hutchinson IW. Alcohol, fear, and woman abuse. *Sex Roles* 1999;40:893–920.
- Jacob T. Family studies of alcoholism. *Journal of Family Psychology* 1992;5:319–338.
- Jacob T, Dunn NJ, Leonard KE. Patterns of alcohol abuse and family stability. *Alcoholism: Clinical and Experimental Research* 1983;7:382–385.

- Jacob T, Dunn NJ, Leonard KE, Davis P. Alcohol-related impairments in male alcoholics and the psychiatric symptoms of their spouses: An attempt to replicate. *American Journal of Drug and Alcohol Abuse* 1985;11:55–67. [PubMed: 4061435]
- Jacob T, Krahn GL. The classification of behavioral observation codes in studies of family interaction. *Journal of Marriage and the Family* 1987;49:677–687.
- Jacob T, Krahn GL. Marital interactions of alcoholic couples: Comparison with depressed and nondistressed couples. *Journal of Consulting and Clinical Psychology* 1988;56:73–79. [PubMed: 3346452]
- Jacob T, Leonard KE. Alcoholic-spouse interaction as a function of alcoholism subtype and alcohol consumption interaction. *Journal of Abnormal Psychology* 1988;97:231–237. [PubMed: 3385076]
- Jacob T, Leonard KE. Sequential analysis of marital interactions involving alcoholic, depressed, and nondistressed men. *Journal of Abnormal Psychology* 1992;101:647–656. [PubMed: 1430603]
- Jacob T, Leonard KE, Haber JR. Family interactions of alcoholics as related to alcoholism type and drinking condition. *Alcoholism: Clinical and Experimental Research* 2001;25:835–843.
- Jacob T, Ritchey D, Cvitkovic JF, Blane HT. Communication styles of alcoholic and nonalcoholic families when drinking and not drinking. *Journal of Studies on Alcohol* 1981;42:466–482. [PubMed: 7278288]
- Jacob, T.; Seilhamer, RA. Alcoholism and family interaction. In: Jacob, T., editor. *Family interaction and psychopathology*. New York: Plenum; 1987. p. 535-580.
- Johnston, L.; O'Malley, P.; Bachman, J. National survey results from the Monitoring the Future Study, 1975–1995: College students and young adults. Vol. 2. Rockville, MD: National Institute on Drug Abuse; 1997.
- Julian TW, McKenry PC. Mediators of male violence toward female intimates. *Journal of Family Violence* 1993;8:39–56.
- Kantor GK, Straus MA. The drunken bum theory of wife beating. *Social Problems* 1987;34:213–230.
- Kantor GK, Straus MA. Substance abuse as a precipitant of wife abuse victimizations. *American Journal of Drug and Alcohol Abuse* 1989;15:173–189. [PubMed: 2729225]
- Karney BR, Bradbury TN. The longitudinal course of marital quality and stability: A review of theory, method, and research. *Psychological Bulletin* 1995;118:3–34. [PubMed: 7644604]
- Katz J, Arias I, Beach SRH, Brody G, Roman P. Excuses, excuses: Accounting for the effects of partner violence on marital satisfaction and stability. *Violence and Victims* 1995;10:315–326. [PubMed: 8703843]
- Kelly AB, Halford WK, Young RM. Couple communication and female problem drinking: A behavioral observation study. *Psychology of Addictive Behaviors* 2002;16:269–271. [PubMed: 12236464]
- Kessler RC. The national comorbidity survey: Preliminary results and future directions. *International Journal of Methods in Psychiatric Research* 1995;5:139–151.
- Klatsky AL. Epidemiology of coronary heart disease: Influence of alcohol. *Alcohol: Clinical and Experimental Research* 1994;18:88–96.
- Kurdek, LA. Developmental changes in marital satisfaction: A 6-year prospective longitudinal study of newlywed couples. In: Bradbury, TN., editor. *The developmental course of marital dysfunction*. New York: Cambridge University; 1998. p. 180-204.
- Leadley K, Clark CL, Caetano R. Couples' drinking patterns, intimate partner violence, and alcohol-related partnership problems. *Journal of Substance Abuse* 2000;11:253–263. [PubMed: 11026124]
- Leigh BC. In search of the seven dwarves: Issues of measurement and meaning in alcohol expectancy research. *Psychological Bulletin* 1989;105:361–373. [PubMed: 2660178]
- Leonard, KE. Drinking patterns and intoxication in marital violence: Review, critique, and future directions for research. In: Martin, SE., editor. *Alcohol and interpersonal violence: Fostering multidisciplinary perspectives*. Monographs of the National Institute on Alcohol Abuse and Alcoholism. Vol. 24. Bethesda, MD: National Institute on Alcohol Abuse and Alcoholism; 1993. p. 253-280.
- Leonard KE, Blane HT. Alcohol and marital aggression in a national sample of young men. *Journal of Interpersonal Violence* 1992;7:19–30.

- Leonard KE, Bromet EJ, Parkinson DK, Day NL, Ryan CM. Patterns of alcohol use and physically aggressive behavior in men. *Journal of Studies on Alcohol* 1985;46:279–282. [PubMed: 4033127]
- Leonard KE, Das Eiden R. Husband's and wife's drinking: Unilateral or bilateral influences among newlyweds in a general population sample. *Journal of Studies on Alcohol* 1999;(Suppl 13):130–138. [PubMed: 10096318]
- Leonard KE, Jacob T. Sequential interactions among episodic and steady alcoholics and their wives. *Psychology of Addictive Behaviors* 1997;11:18–25.
- Leonard KE, Mudar P. Peer and partner drinking and the transition to marriage: A longitudinal examination of selection and influence processes. *Psychology of Addictive Behaviors* 2003 June;17(2):115–125. [PubMed: 12814275]
- Leonard KE, Quigley BM. Drinking and marital aggression in newlyweds: An event-based analysis of drinking and the occurrence of husband marital aggression. *Journal of Studies on Alcohol* 1999;60:537–545. [PubMed: 10463811]
- Leonard KE, Roberts LJ. Alcohol in the early years of marriage. *Alcohol, Health, and Research World* 1996;20:192–196.
- Leonard KE, Roberts LJ. The effects of alcohol on the marital interactions of aggressive and nonaggressive husbands and their wives. *Journal of Abnormal Psychology* 1998a;107:602–615. [PubMed: 9830248]
- Leonard, KE.; Roberts, LJ. Marital aggression, quality and stability in the first years of marriage: Findings from the Buffalo newlywed study. In: Bradbury, TN., editor. *The developmental course of marital dysfunction*. New York: Cambridge University; 1998b. p. 44-73.
- Leonard KE, Rothbard JC. Alcohol and the marriage effect. *Journal of Studies on Alcohol* 1999;(Suppl 13):139–146.
- Leonard KE, Senchak M. Alcohol and premarital aggression among newlywed couples. *Journal of Studies on Alcohol* 1993;(Suppl 11):96–108.
- Leonard KE, Senchak M. Prospective prediction of husband marital aggression within newlywed couples. *Journal of Abnormal Psychology* 1996;105:369–380. [PubMed: 8772007]
- Locke HJ, Wallace KM. Short marital-adjustment and prediction tests: Their reliability and validity. *Marriage and Family Living* 1959;21:251–255.
- Margolin G, John RS, Foo L. Interactive and unique risk factors for husbands' emotional and physical abuse of their wives. *Journal of Family Violence* 1998;13:315–344.
- Margolin G, Talovic S, Weinstein CD. Areas of Change Questionnaire: A practical approach to marital assessment. *Journal of Consulting and Clinical Psychology* 1983;51:920–931.
- McCrary, BS. Marital dysfunction: Alcoholism and marriage. In: Pattison, EM.; Kaufman, E., editors. *Encyclopedic Handbook of Alcoholism*. New York: Gardner Press; 1982. p. 673-685.
- McCrary, BS. The marital relationship and alcoholism treatment. In: Collins, RL.; Leonard, KE.; Searles, JS., editors. *Alcohol and the family: Research and clinical perspectives*. New York: Guilford Press; 1990. p. 338-355.
- McCrary BS, Epstein EE. Directions for research on alcoholic relationships: Marital- and individual-based models of heterogeneity. *Psychology of Addictive Behaviors* 1995a;9:157–166.
- McCrary, BS.; Epstein, EE. Marital therapy in the treatment of alcohol problems. In: Jacobson, NS.; Gurman, AS., editors. *Clinical handbook of couple therapy*. New York: Guilford Press; 1995b. p. 369-393.
- McLeod JD. Spouse concordance for alcohol dependence and heavy drinking: Evidence from a community sample. *Alcoholism: Clinical and Experimental Research* 1993;6:1146–1155.
- Miller BA, Downs WR, Gondoli DM. Spousal violence among alcoholic women as compared to a random household sample of women. *Journal of Studies on Alcohol* 1989;50:533–540. [PubMed: 2586106]
- Miller BA, Nochajski TH, Leonard KE, Blane HT, Gondoli DM, Bowers PM. Spousal violence and alcohol/drug problems among parolees and their spouses. *Women and Criminal Justice* 1990;1:55–72.
- Mudar P, Kearns JN, Leonard KE. The transition to marriage and changes in alcohol involvement among black couples and white couples. *Journal of Studies on alcohol* 2002;63:568–576. [PubMed: 12380853]

- Mudar P, Leonard KE, Soltysinski K. Discrepant substance use and marital functioning in newlywed couples. *Journal of Consulting and Clinical Psychology* 2001;69:130–134. [PubMed: 11302271]
- Murphy CM, O'Farrell TJ. Factors associated with marital aggression in male alcoholics. *Journal of Family Psychology* 1994;8:321–335.
- Murphy CM, O'Farrell TJ. Couple communication patterns of maritally aggressive and nonaggressive male alcoholics. *Journal of Studies on Alcohol* 1997;58:83–90. [PubMed: 8979216]
- Neff JA, Holamon B, Schluter TD. Spousal violence among Anglos, Blacks, and Mexican Americans: The role of demographic variables, psychosocial predictors, and alcohol consumption. *Journal of Family Violence* 1995;10:1–21.
- Noel NE, McCrady BS, Stout RL, Fisher-Nelson H. Gender differences in marital functioning of male and female alcoholics. *Family Dynamics of Addiction Quarterly* 1991;1:31–38.
- O'Farrell TJ, Birchler GR. Marital relationships of alcoholic, conflicted and nonconflicted couples. *Journal of Marital and Family Therapy* 1987;13:259–274.
- O'Farrell TJ, Choquette K. Marital violence in the year before and after spouse-involved alcoholism treatment. *Family Dynamics of Addiction Quarterly* 1991;1:32–40.
- O'Farrell TJ, Hooley J, Fals-Stewart W, Cutter HSG. Expressed emotion and relapse in alcoholic patients. *Journal of Consulting and Clinical Psychology* 1998;66:744–752. [PubMed: 9803692]
- O'Farrell TJ, Murphy CM. Marital violence before and after alcoholism treatment. *Journal of Consulting and Clinical Psychology* 1995;63:256–262. [PubMed: 7751486]
- O'Farrell, TJ.; Rotunda, RJ. Couples interventions and alcohol abuse. In: Halford, WK.; Markman, HJ., editors. *Clinical handbook of marriage and couples interventions*. New York: Wiley; 1997. p. 556-588.
- O'Leary, KD. Physical aggression between spouses: A social learning perspective. In: Van Hasselt, VB.; Morrison, RL.; Bellack, AS.; Hersen, M., editors. *Handbook of family violence*. New York: Plenum; 1988. p. 31-55.
- Pan HS, Neidig PH, O'Leary KD. Predicting mild and severe husband-to-wife physical aggression. *Journal of Consulting and Clinical Psychology* 1994;5:975–981. [PubMed: 7806729]
- Paolino, TJ.; McCrady, BS. *The alcoholic marriage: Alternative perspectives*. New York: Grune & Stratton; 1977.
- Pernanen, K. Alcohol and crimes of violence. In: Kissin, B.; Begleiter, H., editors. *The biology of alcoholism: Social aspects of alcoholism*. New York: Plenum; 1976. p. 344-351.
- Perodeau GM, Kohn PM. Sex differences in the marital functioning of treated alcoholics. *Drug and Alcohol Dependence* 1989;23:1–11. [PubMed: 2920663]
- Quigley BM, Leonard KE. Husband alcohol expectancies, drinking, and marital conflict styles as predictors of severe marital violence among newlyweds. *Psychology of Addictive Behaviors* 1999;13:49–59.
- Quigley BM, Leonard KE. Alcohol and the continuation of early marital aggression. *Alcoholism: Clinical and Experimental Research* 2000;24:1003–1010.
- Roberts, LJ.; Leonard, KE. Gender differences and similarities in the alcohol and marriage relationship. In: Wilsnack, RW.; Wilsnack, SC., editors. *Gender and alcohol: Individual and social perspectives*. New Brunswick, NJ: Rutgers Center of Alcohol Studies; 1997. p. 289-311.
- Roberts LJ, Leonard KE. An empirical typology of drinking partnerships and their relationship to marital functioning and drinking consequences. *Journal of Marriage and the Family* 1998;60:515–526.
- Rodriguez E, Lasche KE, Chandra P, Lee J. Family violence, employment status, welfare benefits, and alcohol drinking in the United States: What is the relation? *Journal of Epidemiology and Community Health* 2001;55:172–178. [PubMed: 11160171]
- Rosenbaum A, O'Leary KD. Marital violence: Characteristics of abusive couples. *Journal of Consulting and Clinical Psychology* 1981;49:63–71. [PubMed: 7217476]
- Schapp, C. A comparison of the interaction of distressed and nondistressed married couples in a laboratory situation: Literature survey, methodological issues, and empirical investigation. In: Halweg, K.; Jacobson, NS., editors. *Marital interaction: Analysis and modification*. New York: Guilford Press; 1984. p. 133-158.

- Schiavi RC, Stimmel BB, Mandeli J, White D. Chronic alcoholism and male sexual function. *American Journal of Psychiatry* 1995;152:1045–1051. [PubMed: 7793441]
- Selzer ML. The Michigan Alcoholism Screening Test: The quest for a new diagnostic instrument. *American Journal of Psychiatry* 1971;127:89–94.
- Shadish, WR.; Cook, TD.; Campbell, DT. Experimental and quasiexperimental design for generalized causal inference. Boston: Houghton-Mifflin; 2002.
- Sher TG, Weiss RL. Negativity in marital communication: Where's the beef? *Behavioral Assessment* 1991;13:1–5.
- Skinner HA, Allen BA. Alcohol dependence syndrome: Measurement and validation. *Journal of Abnormal Psychology* 1982;91:199–209. [PubMed: 7096790]
- Spanier GB. Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and the Family* 1976;38:15–28.
- Steinglass P. A systems approach to alcoholism: A model and its clinical implications. *Archives of General Psychiatry* 1971;24:401–408. [PubMed: 5581264]
- Steinglass P. The alcoholic family in the interaction laboratory. *Journal of Nervous and Mental Disease* 1979a;167:428–436. [PubMed: 448347]
- Steinglass P. The home observation assessment method (HOAM): Real-time naturalistic observation of families in their homes. *Family Process* 1979b;18:337–354. [PubMed: 385337]
- Steinglass P, Davis DI, Berenson D. Observations of conjointly hospitalized “alcohol couples” during sobriety and intoxication: Implications for theory and therapy. *Family Process* 1977;16:1–16. [PubMed: 862838]
- Steinglass, P.; Robertson, A. The alcoholic family. In: Kissen, B.; Begleiter, H., editors. *The pathogenesis of alcoholism*. New York: Plenum; 1983. p. 243–307.
- Straus MA. Measuring intrafamily conflict and violence: The Conflict Tactics Scales. *Journal of Marriage and the Family* 1979;41:75–88.
- Straus MA, Gelles R. Societal change and change in family violence from 1975 to 1985 as revealed by two national surveys. *Journal of Marriage and the Family* 1986;48:785–793.
- Terman, LM. Psychological factors of marital happiness. New York: McGraw-Hill; 1938.
- Tubman JG. A pilot study of family life among school-age children of problem drinking men: Child, mother, and family comparisons. *Family Dynamics of Addiction Quarterly* 1991;1:10–20.
- Van Hasselt VB, Morrison RL, Bellack AS. Alcohol use in wife abusers and their spouses. *Addictive Behaviors* 1985;10:127–135. [PubMed: 4013862]
- Weiss RL, Cerreto MC. The Marital Status Inventory: Development of a measure of dissolution potential. *American Journal of Family Therapy* 1980;8:80–85.
- Weiss, RL.; Heyman, RE. Observation of marital interaction. In: Fincham, FD.; Bradbury, TN., editors. *The psychology of marriage*. New York: Guilford; 1990. p. 87–117.
- Weiss, RL.; Heyman, RE. A clinical research overview of couples interactions. In: Halford, WK.; Markman, HJ., editors. *Clinical handbook of marriage and couples interventions*. New York: Wiley; 1997. p. 13–41.
- Weiss, RL.; Hops, W.; Patterson, GR. A framework for conceptualizing marital conflict, a technology for altering it, and some data for evaluating it. In: Hamerlynck, LA.; Handy, LC.; Mash, EJ., editors. *Behavior change: Methodology, concepts, and practice*. Champaign, IL: Research Press; 1973. p. 309–342.
- Wilsnack, RW.; Wilsnack, SC. Gender and alcohol: Individual and social perspectives. New Brunswick, NJ: Rutgers Center of Alcohol Studies; 1997.
- Zweben A. Problem drinking and marital adjustment. *Journal of Studies on Alcohol* 1986;47:167–172. [PubMed: 3713180]

Fig. 1.
A heuristic model of alcohol use and marital functioning.

Table 1

logical characteristics of studies that tested the effects of alcohol use on marital satisfaction, interaction, and violence

N	Mean age	Effect	Ethnicity	Sampling procedure	Target group	Comparison group	Outcome	Outcome measures	Alcohol measures	Comments
—	—	M	69	C	Problem drinkers	None	S	DAS, OS	MAST, DSM	
—	—	M	65	C	Problem drinkers	None	S	DAS, OS	MAST, DSM	
40.6	—	B	—	C	Alcoholic men	None	S	OS	RDC, MDP	1, 2, 3, 7
38.1	—	A	92	AT	Alcoholic subtypes	Alcoholic subtypes	S, I	DAS	DSM, MAST, CIDI, ADS	
—	—	M	100	C	Alcoholic men	Normal	S	DAS	DSM	1, 2
36.0	—	N	—	CT	Couples	None	S, V	DAS	MAST, HBQ, QF	
25.0	—	N	100	C	Newlyweds	None	S, V	MAT	MAST, QFI	5
40.5	—	A	100	C	Alcoholic men	None	S	MAT, DAS	RDC, QFI	1, 2, 3
40.5	—	A	100	C	Alcoholic men	None	S	MAT, DAS	RDC, CON	1, 2, 3
40.5	—	B	—	C	Episodic alcoholics	Steady alcoholics	S, I	MAT, DAS	MDP, RDC	1, 2, 3
42.2	—	M	—	C	Alcoholic men	Depressed, normal	S, I	MAT, DAS	RDC, MDP, MAST	1, 2, 3
27.6	—	N	—	C	Married couples	None	S	DAS	MAST	
41.3	—	M	—	C	Episodic drinkers	Steady drinkers	S, I	MAT	RDC, MDP, LDH	1, 2, 3
23.5	—	B	67	C	Newlyweds	None	S, V	MAT	QFI, ADS, HVY	4, 5, 6
23.7	—	M	72	C	Newlyweds	None	S, V	OS	QFI, ADS, HVY	
44.3	—	M, N	100	C	Married couples	None	S	OS	DSM	7
27.7	—	A	60	C	Newlyweds	None	S	CTS	QFI, ADS	
43.7	—	A	—	T&C	Alcoholic women	Alcoholic men	S, I	MAT	MAST, REC, CON	1, 2
40.3	—	M	100	AT	Alcoholic men	Maritally distressed, normal	S, I	MAT	MAST	
43.8	—	B	—	AT	Alcoholic women	Alcoholic men	S	DAS	Quant	7

Clin Psychol Rev. Author manuscript; available in PMC 2009 June 23.

N	Mean age	Effect	Ethnicity	Sampling procedure	Target group	Comparison group	Outcome	Outcome measures	Alcohol measures	Comments
	25.0	B	83	C	Newlyweds	None	S	MAT	QFI, ADS	
	43.0	M	75	—	Alcoholic men	Normal	S	MAT, DAS	DSM, MAST, LDH	1, 2
	34.6	M	90.6	C	Problem drinking men	Normal	S	OS	ADS	1, 2, 4
	41.3	M	—	CT	Problem drinkers	None	S	DAS, OS	TLFB	5
	45.1	N	—	AT	Alcoholic men	Anxiety/depression men	I	OI	Treatment status	
	34.2	M	—	C	Alcoholic men	Maritally distressed, normal	I	OI	QFI, CON	1, 2
	38.1	N	92	AT	Alcoholic subtypes	Alcoholic subtypes	S, I	CST	DSM, MAST, CIDI, ADS	
	41.0	A	—	C	Alcoholic couples	None	I	MICS	MAST, MDP	1, 2
	40.2	B	—	C	Alcoholic men	Normal	I	MICS	RDC	1, 2, 3, 4
	41.3	M	—	C	Alcoholic men	Depressed, normal	I	MICS	MAST, QFI, RDC	1, 2, 3
	40.5	B	—	C	Episodic alcoholics	Steady alcoholics	S, I	MICS	MDP, RDC	1, 2, 3
	42.2	B	—	C	Alcoholic men	Depressed, normal	S, I	MICS	RDC, MDP, MAST	1, 2, 3
	39.17	M	—	C	Antisocial alcoholic	Non-antisocial alcoholics	I	MICS	RDC, DSM-IV	3, 4
	42.0	M	—	C	Alcoholic men	Normal	I	MICS	MAST, QFI	3
	41.6	B	—	C	Alcoholic wives	Normals	I	DAS, KPI	KAT	
	41.3	M	—	C	Episodic alcoholics	Steady alcoholics	S, I	MICS	MAST, Prob	1, 2, 3
	26.4	M	81	C	Violent husbands	Normal	I	MICS	QFI, ADS	3, 4
	43.7	M	—	CT	Violent husbands	Normal	I	MICS	DSM, MAST, ADS	1, 2, 3, 4
	43.7	A	—	T&C	Problem drinkers	None	S, I	MICS	MAST	1, 2
	40.3	M	100	AT	Alcoholic men	Maritally distressed, normal	S, I	MICS	MAST	

N	Mean age	Effect	Ethnicity	Sampling procedure	Target group	Comparison group	Outcome	Outcome measures	Alcohol measures	Comments
	32.5	M	70	VT	Violent husbands	Maritally distressed, normal	V	CTS	QFI	4
	—	M	—	C	Random probability	None	V	CTS	Freq	7
	—	B	—	CT	Violent couples	Maritally distressed	V	OV	Freq	7
	36.0	N	—	CT	Couples	None	S, V	OV	MAST, QFI	
	25.0	M	100	C	Newlyweds	None	S, V	CTS	MAST, QFI	5
	24.9	M	53	VT	Violent husbands	Maritally distressed	V	OV	MAST	
	30.5	B	28.9	C	Abused women	None	V	OV	QFI	
	31.8	M	75	T&C	Violent men	Treatment	V	CTS	MAST	4
	—	M	—	C	Probability sample	None	V	CTS	QFI	
	—	M	—	C	Probability sample	None	V	CTS	Freq	7
	—	M	34.4	C	Probability sample	None	V	CTS	QFI	4, 6
	23	M	76.5	C	Probability	None	V	OV	ADS	4, 7
	36.7	M	100	C	Factory workers	Normal	V	CTS	DSM, QFI	
	23.8	M	74	C	Newlyweds	None	V	CTS	QFI, ADS	
	23.5	B	81	C	Newlyweds	None	S, V	CTS	QFI, ADS, HVY	4, 5
	23.7	M	72	C	Newlyweds	None	S, V	CTS	QFI, ADS, HVY	4
	23.7	M	74	C	Newlyweds	None	V	CTS	ADS, QFI, HVY	4, 5
	39.6	M	53.6	C	Married couples	None	V	CTS	II	4
	35.2	M	77.5	T&C	Alcoholic women	Normal	V	CTS	MAST, QFI	
	36	M	40.0	C	Male parolees	None	V	CTS	Prob	4
	42.0	M	—	CT	Violent alcoholic men	Nonviolent alcoholic men	V	CTS	DSM, MAST, TLFB, ADS	1, 2, 4

N	Mean age	Effect	Ethnicity	Sampling procedure	Target group	Comparison group	Outcome	Outcome measures	Alcohol measures	Comments
	39.8	A	33	C	Probability	None	V	CTS	Quant, Freq, Total Weekly	4, 7
	42.4	M	—	CT	Alcoholic husbands	Normal	V	CTS	MAST, ADS, DSM, CON	1, 2, 3, 4
	42.5	M	98.9	CT	Alcoholic husbands	Normal	V	CTS	DSM, MAST	1, 2, 3, 4
	29.6	M	100	C	Army personnel	None	V	CTS	Prob	7
	23.8	M	69.4	C	Newlyweds	None	V	CTS	QFI, ADS	4, 5
	23.8	B	69.4	C	Newlyweds	None	V	CTS	QFI, ADS, ADV	4, 5
	36.5	M	77.1	C	None	None	V	OV	Quant	4, 7
	35.9	M	—	VT	Violent couples	Maritally distressed, normal	V	OV	MAST	4
	32.8	M	—	VT	Violent men	Maritally distressed, normal	V	OV	MAST, QFI	4

Clin Psychol Rev. Author manuscript; available in PMC 2009 June 1.

Participants indicated dependent variables. Total N: m = male participants; f = female participants; c = couples; b = both male and female participants (but not married to each other); AT = alcohol treatment; CT = couples' treatment; VT = violence treatment; T&C = both treatment and community. *Outcome variable*: S = satisfaction; I = interaction; MAST = Marital Adjustment Test; DAS = Dyadic Adjustment Scale; OS = other satisfaction measure; MICS = Marital Interaction Coding System; CST = Communication measure; CTS = Conflict Tactics Scale; OV = other violence measure. *Alcohol measures*: ADS = Alcohol Dependency Scale; CIDF = Composite International Diagnostic Manual; Freq = frequency only; HVY = heavy use; II = impairment index; LDH = lifetime drinking history; MDP = Marlatt Drinking Profile; MAST = Michigan Alcoholism Screening Test; Prob = problem use; Quant = quantity only; QFI = quantity/frequency index; RDC = Research Diagnostic Criteria; TLFB = timeline follow-back measure; TLFB = timeline follow-back measure. *Comparison group*: 2 = excluded wives with other psychological disorders; 3 = excluded couples that were in treatment; 4 = controlled for baseline; 5 = longitudinal design; 6 = combined spouses' reports; 7 = single-item measure.