

PROULX, CHRISTINE M., Ph.D. A Contextual Process Model of the Associations among Family Vulnerabilities, Life Stressors, Marital Behavior, Marital Satisfaction, and Personal Well-Being. (2006)

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The association between marital satisfaction and spouses' personal well-being is well established in the family studies and family psychology literatures. Although models specifying the ways in which contextual variables and life stressors influence both marital satisfaction and personal well-being exist in the literature on family studies, no model had been proposed that jointly considered these variables longitudinally. The purpose of the present study was to build on and extend previous theoretical models of marriage and personal well-being to explain (a) the concurrent association between family vulnerabilities, life stressors, and marital behavior; (b) the prospective influence of marital behavior on marital satisfaction; and (c) the prospective impact of one's own marital satisfaction on personal well-being. In addition, the present study addressed previous limitations in the literature by (a) using multiple reporters for the latent constructs under study, (b) using family-level data rather than unrelated samples of husbands and wives, and (c) expanding the conceptualization of personal well-being to include self-reports of depression and life satisfaction as well as observational reports of sadness.

Using the first three waves from a study on families with young adolescents ($N = 338$ couples), partial support was found for the study hypotheses. Results from a series of structural equation models (SEM) suggested that enduring family vulnerabilities, life events, and adaptive processes such as marital behavior exchanges do not exert their

influence on spouses' personal well-being through marital satisfaction. Rather, it appears that there is a direct, significant relationship between the contextual variables and personal well-being. Although one's spouses' negative marital behaviors were not significant predictors of marital satisfaction over time, or of change in marital satisfaction, one's own marital satisfaction was predictive of personal well-being over time. Further, change in marital satisfaction was a significant predictor of change in personal well-being. Model pathways were consistent for husbands and wives.

A CONTEXTUAL PROCESS MODEL OF THE ASSOCIATIONS
AMONG FAMILY VULNERABILITIES, LIFE STRESSORS,
MARITAL BEHAVIOR, MARITAL SATISFACTION,
AND PERSONAL WELL-BEING

by

Christine M. Proulx

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Committee Co-Chair

Committee Co-Chair

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APPROVAL PAGE

This dissertation has been approved by the following committee of the
Faculty of The Graduate School at the University of North Carolina at Greensboro.

Committee Co-Chair _____

Committee Co-Chair _____

Committee Members _____

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CHAPTER I

INTRODUCTION

The association between marital satisfaction and personal well-being is well demonstrated in the literature on marital relationships (Whisman, 2001). Individuals experiencing marital dissatisfaction tend to report higher levels of depressive symptomatology than those who are maritally satisfied, and marital happiness or satisfaction is associated positively with wives' life satisfaction as well as with wives' and husbands' reports of global happiness and self-esteem (Beach, Arias, & O'Leary, 1986; Culp & Beach, 1998; Freudiger, 1983; Glenn & Weaver, 1981; Voss, Markiewicz, & Doyle, 1999). A longitudinal association also is established, such that marital dissatisfaction predicts increases in depressive symptoms over time (Beach & O'Leary, 1993a, 1993b; Fincham, Beach, Harold, & Osborne, 1997), co-varies with changes in depressive symptoms (Karney, 2001; Kurdek, 1998), and increases risk for a major depressive episode in the year following clinical assessment (Whisman & Bruce, 1999). Recent research on the context of marital relationships, however, emphasizes the importance of recognizing that marital relationships occur within a broader context and that contextual factors are likely to influence both marital and personal well-being via couples' adaptive or maladaptive behavioral responses.

Theoretical models formulated to explain the relation among contextual variables (e.g., stressful life events), behavioral variables, and both marital satisfaction (Karney & Bradbury, 1995) and personal well-being (Billings & Moos, 1982) have received empirical support in recent studies. The available empirical research supports the conclusion that life stressors and the vulnerabilities that couples and individuals experience are associated with marital behavior, marital satisfaction, and spouses' well-being (Conger & Elder, 1994; Tesser & Beach, 1998; Vinokur, Price, & Caplan, 1996). The theoretical and empirical research to date, however, has yet to formulate a testable, unified model of the associations among contextual and life stressor variables, marital behavior, marital satisfaction, and personal well-being. The purpose of the present study is to examine the ways in which contextual variables such as life stressors and family vulnerabilities impact spouses' personal well-being through marital behaviors and marital satisfaction.

The present study builds on and integrates previous theoretical work exploring the contexts and processes that influence marital satisfaction (Karney & Bradbury, 1995) and personal well-being (Billings & Moos, 1982). Previous empirical research and theorizing on the associations among family vulnerabilities, life stressors, marital behavior, marital satisfaction, and personal well-being inform both the ordering of the variables in the proposed model and the generated hypotheses. The proposed model illustrates how factors such as family vulnerabilities and life stressors are associated with marital behavior, which in turn is hypothesized to influence spouses' marital satisfaction. Drawing upon previous theorizing on the association between marital satisfaction and

personal well-being (Beach, Sandeen, & O’Leary, 1990; Billings & Moos), the current model also hypothesizes that spouses’ marital satisfaction influences their personal well-being. Although each individual path in the model has been supported by previous theorizing and research, they have yet to be integrated into one model for consideration with community samples.

The present study also addresses methodological limitations in previous research examining marital relationships and personal well-being by using multiple reporters for both the independent and dependent variables. The bulk of the research exploring marital satisfaction and personal well-being as outcomes, as well as research examining the association between the two, draws on single reporters and methods. When using single reporters and a single method of data collection (such as self-report questionnaires) associations between variables are likely to be inflated due to problems with shared method variance (Bank, Burraston, & Snyder, 2004). Particularly when measuring a construct such as personal well-being, an individual’s disposition is likely to be part of this shared method variance and to influence his or her reports of marital behavior or offspring’s behavior (Baucom, Sayers, & Duhe, 1989). For example, Emery and O’Leary (1982) found that mothers’ reports of marital conflict were strongly correlated with their reports of child maladjustment, but the correlation between mothers’ reports of marital conflict and teachers’ reports of child adjustment problems were nearly zero, suggesting that mothers’ overall disposition might have produced an inflated correlation. Therefore, the present study uses latent constructs with multiple indicators and reporters to measure the constructs of interest, allowing for the separation of true score and measurement error

variances and leading to more accurate estimates of the association between the variables of interest (Lorenz, Conger, Simon, Whitbeck, & Elder, 1991). By using multiple reporters and multiple methods, potential sources of misspecification in previous work are minimized.

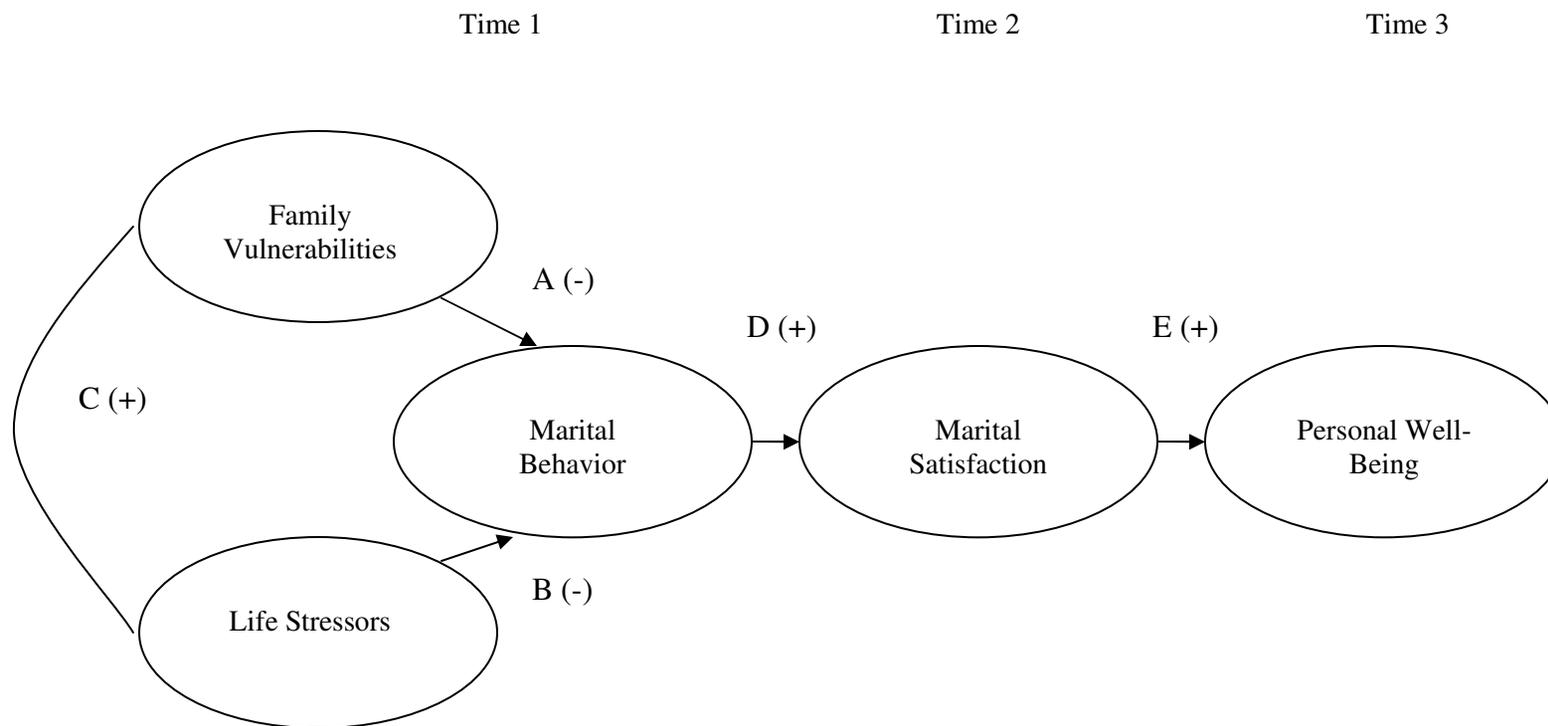
Conceptual Model

The proposed study builds on and extends previous theoretical models of marriage and personal well-being to help explain (a) the concurrent association between family vulnerabilities, life stressors, and marital behavior; (b) the prospective influence of marital behavior on marital satisfaction; and (c) the prospective impact of one's own marital satisfaction on personal well-being. These associations are examined both in time-ordered and autoregressive models. Time-ordered models measure linear relationships among variables over time, whereas autoregressive models include time 1 covariates for the variables included at time 2 and 3 (i.e., marital satisfaction and personal well-being). Further, previous limitations in the research literature are addressed by examining these associations with a relatively homogeneous, community sample of couples, all of whom are in the process of parenting young adolescent children.

Figure 1 presents the conceptual model. This model postulates that at time 1, family vulnerabilities are associated positively with life stressors, and the family vulnerabilities and life stressors couples experience are associated negatively with positive marital behaviors. Marital behaviors at time 1 are hypothesized to predict marital satisfaction at time 2, which then is hypothesized to predict personal well-being at time 3, such that higher levels of marital satisfaction are related to higher levels of personal well-

being. Multiple informants (self, spouse, trained observer, youth, teacher) are used to assess the theoretical constructs. In order to test the potential moderating role of gender, separate but identical models are tested for husbands and wives.

Figure 1. Conceptual model describing the associations between family vulnerabilities, life stressors, marital behavior, marital satisfaction, and personal well-being.



CHAPTER II

THEORETICAL FOUNDATIONS AND REVIEW OF LITERATURE

Theoretical Foundations

The vulnerability-stress-adaptation model of marriage. To integrate previous theoretical models of marriage with established findings in the research literature, Karney and Bradbury (1995) proposed the vulnerability-stress-adaptation (VSA) model of marriage. According to this model, marital quality and stability are a function of enduring vulnerabilities or stable individual traits that spouses bring to the marriage (e.g., attachment style, education level); stressful events, including normative and nonnormative events, transitions, and circumstances that spouses encounter; and adaptive processes, such as adequate communication skills and the positive behaviors spouses exchange during marital interaction tasks (Karney & Bradbury). The model suggests that enduring vulnerabilities, stressful events, and adaptive processes combine to account for variations in marital quality and stability over time.

In developing the VSA model, Karney and Bradbury (1995) emphasized the need for improved models of the developmental course of marriage. One way they suggested this be done was to incorporate both broad (e.g., demographic variables) and specific (e.g., microanalytic observations of marital communication) levels of analysis in the model (Karney & Bradbury). Second, the model illustrates the indirect effects that stress and vulnerabilities have on changes in marital quality and stability through their influence

on adaptive marital processes such as positive marital behavior and adequate communication skills. Lastly, the model allows for both between and within couple differences in the hypothesized links. Although there are several strengths of this approach to understanding influences on marital relations and marital change, the model is limited in that it leaves little room to conceptualize couples as part of a larger community or family. For example, by focusing on individual-level vulnerabilities and stressors, the model proposed by Karney and Bradbury pays little attention to the parental status and transitions (e.g., the transition to parenthood, offsprings' transition to adolescence or young adulthood) that couples might experience jointly. Thus, in the present study, the vulnerability-stress-adaptation model of marriage is adapted to highlight the influence of family-level vulnerabilities and family-level life stressors on couples' marital behaviors.

A framework for the analysis of adaptive processes and personal functioning.

Billings and Moos (1982) presented a theoretical framework hypothesizing that personal functioning and depression-related outcomes associated with stressful life circumstances are influenced by individuals' personal and environmental resources as well as by their appraisal and coping responses. Thus, although the outcome for this model is individual rather than dyadic, the processes posited to influence the dependent variable are similar to those hypothesized by Karney and Bradbury (1995) and suggest that individuals' resources, or lack thereof, and their behavioral responses to stressors influence how life stressors are associated with depression and personal functioning. Billings and Moos conceptualized life circumstances as developing from personal and environmental factors

including specific life events (e.g., divorce, job loss), chronic life strains associated with major social roles (e.g., a stressful job, parenting a disabled child), and financial conditions and illnesses. Personal resources included dispositional characteristics as well as social skills and problem-solving abilities, whereas environmental resources referred to the informational, material, and emotional support provided by intimates, other family members, and nonkin members of social networks. Along with the appraisal process, Billings and Moos suggested that individuals use coping responses that are intended to minimize the adverse effects of stress. The outcome of this coping response process, be it adaptive or maladaptive, influences the individual's level of functioning and adaptation.

The similarities in predictor variables between this model and the one proposed by Karney and Bradbury (1995) make the integration and extension of the two models a promising avenue to help explain the associations among family vulnerabilities, life stressors, marital behaviors, marital satisfaction, and personal well-being. The two models emphasize the importance of recognizing that couples and individuals are situated within a context broader than the marriage relationship and that contextual factors are likely to influence marital and personal well-being through adaptive or maladaptive behavioral responses. Further, both models highlight the importance of vulnerabilities that might place couples or individuals at particular risk for adverse experiences or outcomes. Lastly, the two models, although introduced more than a decade apart, encourage the use of sophisticated methods of data collection and analysis through their emphasis on behavioral data and indicators. The integration of these two models,

however, leaves open the question of which component of the hypothesized model is best conceptualized as the dependent variable.

The marital discord model of depression. Combining the models by Karney and Bradbury (1995) and Billings and Moos (1982) necessitates a decision about which variable (i.e., marital satisfaction or personal well-being) should be the dependent variable and which should be the conduit for the contextual influences. To inform this decision, I draw upon the theoretical and empirical work on the association between marital relations and depression/depressive symptoms (Beach et al., 1990) and hypothesize that marital satisfaction influences personal well-being longitudinally, thus treating personal well-being as the dependent variable.

The hypothesis that marital satisfaction influences personal well-being is informed primarily by the marital discord model of depression (Beach et al., 1990). This model was developed partially in response to Weissman's (1987) call for greater attention to marital relationships as a possible treatment target for patients with depressive symptomatology. Further, Beach and colleagues' own work (Beach, Jouriles, & O'Leary, 1985) suggested that over half of the couples in their study who were dissatisfied in their marriage also were characterized by mild to moderate levels of depressive symptomatology. Drawn from this clinical work on depressed individuals in unhappy marriages, the theoretical model states that marital dissatisfaction likely leads to increased risk of depressive symptomatology by limiting or removing available resources (e.g., spousal support), increasing spouses' stress, and increasing the levels of overt hostility experienced in the marriage.

Although the emergence of this model initially was meant to help guide therapists working with depressed couples or individuals to intervene therapeutically at the level of the marital dyad, the model applies equally well to explaining the pathways that connect marital dissatisfaction in the non-clinical population to depressive symptomatology and personal well-being. The marital discord model of depression allows one to hypothesize that those individuals or couples experiencing marital dissatisfaction have a head-start on experiencing depressive symptomatology (Beach et al., 1990). The feelings associated with marital dissatisfaction include feeling discouraged about the future of the marriage, feeling isolated or lonely, feeling misunderstood, and in general experiencing dissatisfaction both with one's spouse and the marital relationship. In couples who experience marital dissatisfaction without experiencing depressive symptomatology, these feelings remain relationship-specific (Beach et al.) and have not begun to generalize to other inter- or intrapersonal domains. However, if these feelings begin to generalize beyond the relationship, maritally dissatisfied individuals will begin to show signs of depressive symptoms or decreases in general life satisfaction. It is in this way that marital dissatisfaction is said to predict depressive symptoms over time.

Current empirical evidence supports and extends the marital discord model of depression and suggests that there is a prospective relationship between marital satisfaction and personal well-being (Beach, Katz, Kim, & Brody, 2003; Fincham et al., 1997). Supportive marriages appear to offer multiple benefits to spouses' personal well-being, including promoting physical health (Wickrama, Lorenz, Conger, & Elder, 1997) and self-esteem (Voss et al., 1999), whereas conflict-ridden marriages and marriages

characterized by low levels of cohesion and satisfaction appear to have a negative impact on aspects of well-being such as self-esteem (Voss et al.). In their meta-analysis of 93 studies published in the last 25 years, Proulx, Helms, and Buehler (under revision; see Appendix) examined the longitudinal research on marital quality and personal well-being and found support for the marital discord model of depression, in that the strength of the association between marital quality and personal well-being was significantly stronger for those longitudinal studies in which personal well-being was the dependent variable than for those in which marital quality was the dependent variable. The results of the meta-analysis, based on a relatively large number of longitudinal effects, offer strong support for the causal direction between marital satisfaction and personal well-being.

Behavioral and crisis theories. The basis of the model proposed by Karney and Bradbury (1995) was drawn from both behavioral and crisis theories. I draw primarily on these theories as used by Karney and Bradbury because, of the three models integrated in the present study, Karney and Bradbury's offers the strongest theoretical foundation and argument. This may be because both Billings and Moos (1982) and Beach and colleagues (1990) developed their models as interpretive tools to assist clinicians in formulating potential treatments for patients or couples experiencing depression or depressive symptoms. Although integration of previously published research also was a goal of Karney and Bradbury's proposed model, they drew heavily from the family studies and family psychology literatures and proposed their model primarily for the purposes of theory building and model testing.

As used in the field of family studies, behavioral theory focuses on the interpersonal exchange of specific behaviors between partners, and much of the research using this theoretical framework focuses on behaviors exchanged during problem solving interactions (Karney & Bradbury, 1995). Grounded in Thibaut and Kelley's (1959) social exchange theory, which emphasizes the role of perceived costs and rewards in shaping social behavior (Sabatelli & Shehan, 1993), a basic premise of the behavioral theory framework is that positive marital behaviors enhance spouses' global feelings toward the marriage whereas negative behaviors diminish positive feelings and cause harm to perceptions of the relationship (Markman, 1981). Building on that premise, Gottman and colleagues (1994) observed couples and proposed a balance theory of marriage, in which relational balance occurs in spouses' behavioral exchanges. With this theory, Gottman hypothesized that although certain negative behaviors can be constructive in a marriage over time, others have the potential to be destructive to the well-being of a marriage.

Although this behavioral theoretical orientation is appealing in that it emphasizes the importance of interaction to the health of a marriage, behavioral theories of marital functioning have been criticized for having too narrow a focus on behavior and for not paying adequate attention to the contextual variables which might influence the behaviors exchanged between spouses (Karney & Bradbury, 1995). It is quite plausible that these variables have a direct influence on the behaviors spouses exchange within the marriage. Although behavioral theory has been criticized for neglecting this component of married life, other family theories that are compatible with behavioral perspectives on marriage

hypothesize that family vulnerabilities and life stressors influence behavioral aspects of married life. One such theoretical framework is crisis theory.

Crisis theory is based on Hill's (1949) ABCX model, a model that attempts to explain family's reactions to stressful events. According to crisis theory, families must adapt to stressful events (A). That adaptation is influenced by the varying amounts of concrete resources available to families (B) as well as the ways in which families define the stressful event (C). The extent to which available resources are sufficient to meet the requirements implied by a family's definition of an event determines the nature of the crisis (X) and whether that family will recover successfully. Successful recovery should result in continued family unity and enhancement of the family system through member growth and development (McCubbin & Patterson, 1982).

The double ABCX model of family adaptation builds on Hill's (1949) previous work by extending the model to help explain postcrisis adaptation (Lavee, McCubbin, & Patterson, 1985). The final outcome of this revised model is hypothesized to range from maladaptation to bonadaptation. Maladaptation, or the negative end of the continuum, is defined as a continued imbalance between the pile-up of demands and the family's capabilities for meeting those demands (Lavee et al.). One of the ways maladaptation can be characterized is by deterioration in family members' sense of well-being and of their physical and/or psychological health. Bonadaptation is the positive end of the continuum and can be characterized by a maintenance or improvement in family members' well-being (Lavee et al.).

Whereas behavioral theory has been criticized for its neglect of the contextual variables that might influence spousal interaction (Karney & Bradbury, 1995), crisis theory emphasizes couples' and families' continuous interaction with their environment. Thus, the integration of these two theoretical foundations influenced the model for the present study, which considers the potential correlates of marital behavior by including potential life stressors and the vulnerabilities experienced by families. Drawing upon crisis theory (Hill, 1949; McCubbin & Patterson, 1982) and adapting the vulnerability-stress-adaptation model of marriage, it is recognized that behaviors exchanged between spouses are likely to be associated with existing family vulnerabilities and life stressors. Drawing from behavioral theory, it is hypothesized that the positive and negative marital behaviors spouses exchange influence their perceptions of their marital satisfaction. Finally, drawing from the marital discord model of depression, it is further hypothesized that spouses' marital satisfaction will influence their personal well-being.

Review of the Literature: Supporting the Model Pathways

Much of the psychological research on marriage has been guided by behavioral theories of marriage and the view that marital satisfaction is a consequence of the behaviors that spouses exchange (Bradbury & Fincham, 1991; Jacobson & Margolin, 1979). The theorizing in this area has stimulated methodologically advanced observational research that demonstrates specific ways that spouses' positive and negative behaviors during marital problem solving are related to marital satisfaction (see Bradbury & Karney, 1993; Weiss & Heyman, 1990). However, much of this work is limited because it overlooks the contextual variables which might be associated with

spouses' marital behaviors. Thus, one of the primary goals of the present study is to examine how contextual factors and life stressors are related to expressions of warmth and hostility in marriage and how, in turn, these behaviors are related to marital satisfaction. Further, by integrating several theoretical models, the influence of marital satisfaction on personal well-being is examined. Review of the literature supporting each of the model pathways (see Figure 1) is presented below.

Path a: Family vulnerabilities to marital behavior. Although Karney and Bradbury (1995) conceptualized vulnerabilities as enduring individual traits, vulnerabilities in the proposed model are defined at the level of the family and encompass the enduring contextual variables that place families at risk and are likely to be associated with both life stressors and marital interaction. Previous research primarily drawing from the family stress model (Conger & Elder, 1994) suggests that enduring vulnerabilities in families influence the nature of spouses' marital interaction. Three specific indicators of vulnerabilities are of interest in the present study: perceptions of financial adequacy, neighborhood quality, and spouses' parents' levels of marital happiness. Evidence suggests that variables such as economic pressure are related to marital hostility (Conger & Elder; Vinokur et al., 1996) and that the inability to meet the financial demands of the family influence spouses' levels of warmth and hostility during marital interaction, leading spouses to display more hostility than warmth during marital interactions (Conger & Elder). Spouses experiencing economic distress also are more likely to rate their marital communication as poor (Johnson & Booth, 1990).

Another contextual component that likely is related to spouses' marital behaviors but has thus far been understudied is the quality of the neighborhoods in which couples and their families reside. Ratings of neighborhood aesthetic quality, income levels, and safety are associated with the quality of other intimate ties such as the mother-child bond (Klebanov, Brooks-Gunn, & Duncan, 1994), and recent research suggests that neighborhood-level economic disadvantage is related negatively to marital warmth, but not hostility in personal relationships (Cutrona et al., 2003). Recent research suggests that marriages might deteriorate when situated in neighborhood environments that are unsupportive of or assaulting to personal relationships (Cutrona et al.), such as those with few marital role models (Wilson, 1987), those whose environments might increase partners' stress through lack of perceived safety, or those who might decrease a sense of community by a lack of aesthetic appeal. This increased stress might weaken couples' ability to handle stress in other areas of their lives, as well weaken their ability to draw upon adequate coping responses within their marriage.

Research also suggests that spouses' experiences of marital conflict and negative marital interaction in their family of origin are associated with their reports about their own marital experiences (Overall, Henry, & Woodward, 1974) and with general attitudes toward marriage (Franklin, Janoff-Bulman, & Roberts, 1990). Children of distressed or dissolved marriages are hypothesized to develop poorer social skills as adults (Franz, McClelland, & Weinberger, 1991), potentially putting them at risk for poor marital interaction skills. Conflicted or unhappy parental relationships have been linked with offspring relationship difficulties and development of poor interpersonal communication

skills (Booth & Edwards, 1989; Caspi & Elder, 1988). Caspi and Elder argue that the relationship between marital interaction in the family of origin and later marital experiences exists because adult offspring model the behavior they witnessed in their families of origin, producing interpersonal behavior patterns marked by an inability to adequately solve conflict as well as increased levels of interpersonal hostility.

Path b: Life stressors to marital behavior. The models presented by both Karney and Bradbury (1995) and Billings and Moos (1982) suggest that stressors and strains are associated with individuals' behavior. In the vulnerability-stress-adaptation model of marriage (Karney & Bradbury), as well as in Billings and Moos' model, stressful events are defined as developmental transitions, situations, incidents, and acute circumstances that individuals and couples encounter. A similar definition is used in the proposed model, in which life stressors are those situations or circumstances that spouses might perceive as a strain in daily life and are associated with spouses' displays of warmth and hostility toward one another. Stressful circumstances are associated with more negative communication between spouses, and recent research and theorizing suggest that the behaviors spouses exchange with one another might play an important role in connecting life events with spouses' marital and personal adjustment (Cohan & Bradbury, 1997).

Work-related stress is one such life stressor variable that is related to marital interaction, in that high levels of job stress are associated with lower levels of positive affect between spouses and higher levels of negative affect for the husbands experiencing the stress (Roberts & Levenson, 2001). In a study of daily work stress, Bolger, DeLongis, Kessler, and Wethington (1989) found that when husbands reported arguments at work

during the day, they were more likely to report arguments with their spouses at home during the same evening. Similarly, there is considerable evidence that husbands' and wives' job stress or spillover can disrupt marital relationships by increasing hostile or withdrawn behavior in either spouse (Barling & Rosenbaum, 1986; Crouter, Perry-Jenkins, Huston, & Crawford, 1989; Repetti, 1989).

Normative transitions within the family also can be conceived as life stressors, particularly for spouses with children living at home. In her groundbreaking work on family career paths, Aldous (1978) suggested that parents experience heightened stress at specific life stages, including their child's transition to adolescence. Aldous argued that this time period is a specific stressor that influences spouses' relationships, making them "less pleasant" (p. 275), presumably through poorer marital communication. Further, crisis theory (Hill, 1949) suggests that periods of transitions such as the transition into adolescence are a time of realignment for family relationships. Recent research also suggests that the personal qualities of young adolescents have an influence on marital conflict (Whiteman, McHale, & Crouter, 2005) with parents reporting increased marital conflict as their child transitions into adolescence. Given that all the families in the present study are at a similar point in the life course, that is, parenting young adolescent children, and the finding that the personal qualities of young adolescents might be one way in which the transition to adolescence is related to parents' marriages, teacher reports of youth's internalizing and externalizing behaviors are included as two of the indicators of spouses' life stressors.

The last variable to be considered as a life stressor for families is the occurrence of negative life events. Both normative (i.e., events in the family life course that can be anticipated to some degree) and nonnormative (i.e., events that cannot be anticipated and typically are experienced as stressful) life events appear to be associated with marital behavior exchanges between spouses. Traumatic life events have been linked to lower levels of marital harmony and warmth (Broman, Riba, & Trahan, 1996) and more frequent marital aggression (Cano & Vivian, 2001). When experiencing several life stressors simultaneously, spouses' emotional resources might be spent regulating their own emotional response, limiting the availability of supportive behaviors displayed toward one's spouse (Wood, Satzberg, & Golsamt, 1990). Alternatively, empirical support for the personal growth model suggests that exposure to some stressful life events might have positive effects on spouses' relationships, providing a "proving ground" upon which couples can learn about their relationship and improve marital communication and coping skills (Schaefer & Moos, 1992).

Path c: Family vulnerabilities to life stress. Although some life stressors such as natural disasters occur randomly (path D in Karney & Bradbury's model; 1995), others are tied to the social and economic contexts of couples' lives. The link between family vulnerabilities and life stressors is specified in this model because previous research and theorizing suggest that if life stressors are studied apart from the broader contexts in which they occur or are related, researchers might mistakenly attribute influences on marital functioning to these specific life events rather than the broader contexts in which they occur (Pearlin, 1989; Story & Bradbury, 2004). Further, the vulnerabilities families

experience might place them at greater risk for also experiencing life stressors. For example, youths residing in poor quality neighborhoods might exhibit greater levels of externalizing or internalizing problem behaviors, a factor that in this model is considered as a life stressor for couples.

Path d: Marital behavior to marital satisfaction. Behavioral theory drives the hypothesis that behaviors exchanged during a marital observation problem solving task will influence spouses' perceptions of marital satisfaction. The guiding premise behind behavioral theory in this regard is that supportive or rewarding behaviors will enhance global evaluations of the marriage whereas negative behaviors will harm perceptions of the marriage (Karney & Bradbury, 1995; Markman, 1981). It also is likely that marital interaction observed at one point in time is indicative of an ongoing pattern of marital communication or problem solving. Researchers have suggested that over time these ongoing patterns of behavior shape spouses' evaluations of the marriage (Karney & Bradbury). Gottman and colleagues have found that positive affect, in particular, discriminates between happily and unhappily married spouses in the early years of marriage (Gottman, Coan, Carrerre, & Swanson, 1998). Additional research suggests that what might matter more than positive behavior exchanges is a lack of negative exchanges (e.g., "not being nasty matters more than being nice"; Ewart, Taylor, Kraemer, & Agras, 1991). Further, Cohan and Bradbury (1997) found that spouses' problem-solving behavior was related to reports of marital satisfaction and suggest that neglecting to assess marital communication might misrepresent the relationship between life events and marital satisfaction.

Path e: Marital satisfaction to personal well-being. The association between marital satisfaction and personal well-being is well established in the research literature. In a recent meta-analysis of the association between marital quality and personal well-being, Proulx et al. (under revision) addressed limitations of previous meta-analytic work (Whisman, 2001) by expanding the definition of the dependent variable to include various indicators of personal well-being beyond depressive symptoms, including those that tap more positive dimensions of well-being (e.g., self-esteem, life satisfaction). Their results for 111 effect sizes drawn from 70 cross-sectional studies suggested an association between marital quality and personal well-being ($r = .31$ for men and women combined), an average effect size slightly smaller in magnitude than the one found in Whisman's study.

Although the cross-sectional research on the link between marital satisfaction and personal well-being suggests that these two variables are associated with one another, it tells us little about the potential direction of effects. Current evidence suggests that there is a prospective relationship between marital satisfaction and depressive symptoms (Beach et al., 2003; Fincham et al., 1997). In their meta-analysis, Proulx and colleagues (under revision) included longitudinal research and found support for Beach et al.'s (1990) marital discord model of depression, in that the strength of the association between marital quality and personal well-being was significantly stronger for those longitudinal studies in which personal well-being was the dependent variable than for those in which marital quality was treated as the dependent variable. Reports of marital dissatisfaction at one point in time appear to predict increased levels of depressive

symptoms one year later, even when controlling for initial symptoms and intervening life events (Beach et al., 1986; Beach & O'Leary, 1993b). Further evidence for the influence of marital events on well-being comes from research examining the impact of a positive marital event in improving or alleviating depressive symptoms. Brown and colleagues (Brown, Adler, & Bifulco, 1988; Brown, Lemyre, & Bifulco, 1992) found that a "fresh start" event or significant improvement in a marital problem might prompt recovery from a depressive episode that has become chronic, suggesting that marital changes precede, and might produce, changes in depressive affect.

The Role of Gender

Billings and Moos (1982) suggest that although higher rates of depression are reported for women than for men in the general population, the determinants of this gender difference have yet to be specified. Some suggest that women might be more vulnerable to the psychological effects of life stressors (Radloff & Rae, 1979). It also has been suggested that, when compared to husbands, wives' psychological health is more closely tied to their levels of marital satisfaction (e.g., Levenson, Carstensen, & Gottman, 1993). Those who hypothesize gender differences in the strength of the association between marital quality and personal well-being point to socialization differences regarding the emphasis on interpersonal relationships, as well as structural differences in the allocation of power in marriage (Allen & Walker, 2000). It is suggested that women are socialized to maintain the social climate of their relationships whereas men are more focused on accomplishment and autonomy (Blatt & Zuroff, 1992), and that women's well-being is tied more closely to the emotional climate of their marriages (Thompson &

Walker, 1989). Further, wives typically have less power and status in their relationships and might invest in them more than their husbands because of husbands' desires to maintain the status quo (Allen & Walker). Thus, wives might be more vulnerable to marital dissatisfaction (Beach et al., 2003; Whisman, 2001) and perceive marital hostility as a more significant stressor than husbands (Dehle & Weiss, 1998). Some researchers and theorists have suggested that women might accept more blame or responsibility if marital relationships become distressed, with increased levels of marital distress being perceived as a personal, rather than a relational inadequacy or problem (Moberg & Lazarus, 1990). These feelings of blame or responsibility might lead women to experience increased depressive symptoms (Davila, Karney, Hall, & Bradbury, 2003) and decreased levels of self-esteem, life satisfaction, and physical health.

Despite this theorizing, the empirical evidence is mixed (e.g., Barnett, Brennan, Raudenbush, & Marshall, 1994; Coyne & Benazon, 2001; Davila et al., 2003; Kurdek, 2005; Voss et al., 1999). In his meta-analytic review of 26 studies, Whisman found that the association between marital dissatisfaction and depressive symptoms was significantly stronger for women than it was for men. However, in their meta-analytic review, based on more studies and with an expanded definition of the dependent variable, Proulx et al. (under revision) found no difference in the strength of the association between marital quality and personal well-being for men and women. Rather, they speculated that the *processes* through which marital quality is associated with personal well-being might differ for men and women. Feminist researchers have long argued that men and women experience marriage differently (Bernard, 1972) and that within

marriage gender is created and sustained through everyday interaction (Thompson & Walker, 1989). It is premature to assume that because the strength of the association between marital quality and personal well-being is equivalent for men and women that the combined indirect effect of family vulnerabilities, life stressors, and marital behaviors on marital satisfaction and personal well-being are similar for wives and husbands. Thus, potential gender differences in the associations between variables specified in this study were examined.

The Present Study

Although models specifying the ways in which contextual variables and life stressors influence marital functioning and satisfaction as well as personal well-being exist in the literature on family studies, to date no model has been proposed that jointly considers these variables longitudinally. Including a focus on potential gender differences between spouses, this dissertation builds on and extends previous theorizing and research by integrating three models: (1) Karney and Bradbury's (1995) vulnerability-stress-adaptation model of marriage, (2) Billings and Moos' (1982) framework for the analysis of adaptive processes, depression and personal functioning, and (3) Beach and colleagues' (1990) marital discord model of depression. In addition, the proposed model addresses previous limitations in the literature on the interrelations between these variables by (a) using multiple reporters for the latent constructs under study, (b) using family-level data rather than unrelated samples of husbands and wives, and (c) expanding the conceptualization of personal well-being to include self-reports of depression and life satisfaction as well as observational reports of sadness.

Hypotheses

The study reported here applied this integrated model to a sample of working- and middle-class families with young adolescents, using reports from husbands, wives, youths, teachers, and trained observers. Applying this model to families with young adolescent children can contribute to our knowledge on the association among family vulnerabilities, life stressors, marital behavior, marital satisfaction, and personal well-being in several ways. First, the analysis could provide empirical support for the direction of effects hypothesized in the conceptual model (see Figure 1). Second, it can help us understand how families with young adolescent children might respond and adapt to life stressors and family vulnerabilities, and how spouses' personal well-being might be influenced by their marital satisfaction. The application of this model can be summarized as the simultaneous examination of the following hypotheses:

1. Family level vulnerabilities are related concurrently at time 1 to husbands' and wives' marital behavior as measured by observed expressions of marital hostility and marital warmth (path a).
2. Life stressors are related concurrently at time 1 to husbands' and wives' marital behavior as measured by observed expressions of marital hostility and marital warmth (path b).
3. Family level vulnerabilities are related concurrently at time 1 to couples' experiences of life stressors (path c).
- 4a. Marital behavior at time 1 is prospectively related to marital satisfaction at time 2 (path d: time-ordered model).

- 4b. Marital behavior at time 1 is prospectively related to marital satisfaction at time 2 after controlling for marital satisfaction at time 1 (path d: autoregressive model).
- 5a. Husbands' and wives' reports of marital satisfaction are related prospectively to their own personal well-being at time 3, such that higher levels of satisfaction are related to more optimal levels of personal well-being (path e: time-ordered model).
- 5b. Husbands' and wives' reports of marital satisfaction are related prospectively to their own personal well-being at time 3 after controlling for marital satisfaction and personal well-being at time 1 (path e: autoregressive model).
6. When considering all variables jointly as a single framework, the indirect effects of family vulnerabilities and life stressors on personal well-being are hypothesized to occur through their association with marital behavior and marital satisfaction, and to provide better model fit than direct effects models.

CHAPTER III

METHODS

Sample

Data are drawn from the Family Life Project (Cheryl Buehler, Principal Investigator), a longitudinal project begun in May of 2001 designed to examine the association between interparental conflict and adolescent maladjustment. The data used in the present study are drawn from the original sample of 416 families with young adolescents attending sixth grade in any of 13 middle schools in one county of a Southern State. This county is a blend of rural, suburban, and urban areas. The families are participating in an annual four-wave assessment study that also includes videotaped family observations and teacher reports of students' internalizing and externalizing behavior. To be included in this sample at time 1, couples had to be married or cohabiting long-term and not have step-children living in or out of the home. Sample size at time 2 was 366 families; sample size at time 3 was 338 families (19% attrition). At time 1, youths were an average of 11.83 years old ($SD = .67$), and 49% of the youths were female. Table 1 contains additional sample demographic characteristics at time 1.

Procedures

Families participated in the first three waves of a four-wave design (wave four is ongoing). Each assessment included mailed questionnaires, home interviews, and videotaped family interaction activities. Questionnaire packets were mailed to the

family a few weeks prior to their annual assessment. Each packet contained questionnaires and corresponding envelopes for the mother, father, and participating youth. Family members were asked to complete the questionnaires in private and to seal their completed questionnaire in their respective envelopes. Mothers' and fathers' questionnaires were identical. The questionnaires took participants an average of 1-2 hours to complete and could be completed in more than one sitting if desired. Completed questionnaires were collected during the home visit. Family members also completed a brief questionnaire packet during the home visits. These home questionnaires contained the most sensitive measures (e.g., a marital instability scale), and were completed during the home interviews so that the researcher present in the family's home could ensure participants' privacy. Home visits were arranged at the family's convenience and families were compensated \$105 for their time at time 1, \$120 at time 2, and \$135 at time 3.

During the home assessment, the family participated in four videotaped interaction tasks. For each task, the interviewer turned on and tested the video equipment, explained the task to the family, helped them complete a sample question, and introduced the family members on tape by their first names. The interviewer then set the timer for the allotted amount of time and retired either to a part of the house where he or she could not hear the family or outside until the task was over. Each task consisted of family members sitting around a table or on a couch and taking turns reading questions from preprinted, laminated cards. The family members would then answer and discuss the questions together. Tasks 3 and 4 were the only tasks used for the current study. Task 3 was a problem-solving task and involved both parents and the target youth, and lasted 20

minutes. For the purposes of this study, only the behaviors exchanged between spouses were used in the analyses. Task 4 was a marital interaction task involving only the parents. Husband and wife were asked to talk about their relationship, enjoyable times they had together, areas of conflict, and how they dealt with conflict. This task also lasted 20 minutes. The videotaped tasks were evaluated by trained video coders. Coders received several months of training and were required to pass several written and viewing tests before being allowed to code. Coders assessed individual (i.e., sadness) and dyadic (i.e., warmth and hostility) characteristics. Separate, independent coders were used for each task within a family. A second coder was randomly assigned to recode independently approximately 20% of the tasks so that interrater reliability could be assessed.

Measures

The latent variable of parents' well-being was comprised of self-reports of depression, life satisfaction, and an observational measure of sadness. This latent variable is labeled well-being because it assesses several dimensions that are both positive and negative, rather than strictly depressive symptoms. The latent variable of marital satisfaction is comprised of spouses' self-reports of marital satisfaction at the item level (Kansas Marital Satisfaction Scale; Schumm et al., 1986). The construct of marital behavior is comprised of summed ratings from the observational scales of marital warmth and hostility. Because parents' self-cognitions might influence their reports of life stressors (e.g., Ryff, Lee, Essex, & Schmutte, 1994), multiple reporters were used to assess the indicators of this latent construct. Spouses reported on their own work stress

whereas teacher reports were used to assess child internalizing and externalizing behavior (Teacher's Report Form of Achenbach's CBCL; Achenbach, 1991). Youths' reports were used to assess family life events. Several indicators of family vulnerabilities were used, including an indicator of financial adequacy, neighborhood problems, and spouses' perceptions of their own parents' marital happiness.

Personal Well-Being

Depressive symptoms. At the first and third phase of data collection, spouses completed the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977). The CES-D is a 20-item measure designed to assess depressive symptoms in a community sample (Radloff, 1977). Respondents were asked to think about the past week and use a 4-item scale ranging from 0 = *rarely or none of the time* to 3 = *most or all of the time* when answering the items. These 20 items assess cognitive, affective, behavioral, and somatic symptoms associated with depression (e.g., "I thought my life had been a failure" and "I felt that everything I did was an effort"). Scores for the measure were created by summing across the 20 items and ranged from 0 to 60; higher scores indicated higher levels of depressive affect. Cronbach alphas at time 1 were .85 and .89 for husbands and wives, respectively; at time 3 they were .90 for both wives and husbands.

Life satisfaction. At the first and third phase of data collection, spouses were asked to think about their life and respond to 7 items (e.g., "In general, I would say I am very happy," "I frequently wish I could start my life over again") from the Job Diagnostic Survey (Hackman & Oldham, 1975) using a rating scale of 1 = *never* to 5 = *always*. Items negative in valence were reversed scored. Scores were created by averaging across the

seven items, and higher scores indicated higher levels of life satisfaction. Cronbach alphas for this scale at time 1 were .83 and .87 and at time 3 were .86 and .87 for wives and husbands, respectively.

Observed measure of sadness. The observational coding system for all the observational measures was the Iowa Family Interaction Ratings Scales (IFIRS; Melby & Conger, 2001). All of the observational scales are rated from 1 (*the behavior is not at all characteristic of the focal spouse*) to 9 (*the behavior is highly characteristic of the focal spouse*). Sadness was assessed at time 1 and 3 and coded as an individual characteristic characterized by such behaviors as sighing, crying, expressing regret or self-denigration, despondency, and unhappiness. Spouses' scores for sadness were computed by summing their scores from tasks 3 and 4; the higher the sadness score, the more sadness was characteristic of the focal spouse. The intraclass correlations for assessing interrater reliability for wives' sadness for tasks 3 and 4 were .31 and .47, respectively. For husbands, the intraclass correlations were .56 and .48 for tasks 3 and 4, respectively. Percent agreement among trained coders ranged from 71% - 82% and from 79% - 95% for wives and husbands, respectively.

Marital Satisfaction

Marital satisfaction. The Kansas Marital Satisfaction scale (KMS; Schumm et al., 1986) was used as a perceptual measure of marital satisfaction at time 1 and 2. The 3-item instrument asks spouses to rate their satisfaction with their marriage, their spouse, and their relationship with their spouse on a 7-point scale (1 = *extremely dissatisfied*, 7 = *extremely satisfied*), yielding scores from 3 to 21. Individual scale items were used as

indicators of marital satisfaction; the higher each item, the more satisfied was the spouse. Cronbach alphas for the scale as a whole for wives and husbands were .93 and .97, respectively, at times 1 and 2.

Marital Behavior

Observational measures of hostile and warm behavior. The observational hostility and warmth scales were assessed at time 1 in tasks 3 (family problem solving) and 4 (marital interaction). Six observational scales were combined from tasks 3 and 4 to form an overall observed hostility toward spouse scale (i.e., the hostility, angry coercion, physical attack, antisocial, verbal attack, and contempt scales) and 6 other scales were combined to form an overall warmth toward spouse scale (i.e., the warmth, endearment, affection, prosocial, communication, and listener responsiveness scales). Each scale was coded on a 1 = *not at all characteristic of the focal spouse*, 3 = *mainly uncharacteristic*, 5 = *somewhat uncharacteristic*, 7 = *moderately characteristic* and 9 = *very characteristic of the focal spouse* scale. The intraclass correlations for assessing interrater reliability for husband to wife ranged from .42 to .49 for the hostility scales and from .34 to .52 for the warmth scales. Percent agreement among coders ranged from 57% to 87%. Interrater reliability for wife to husband ranged from .49 to .50 for the hostility scales and .44 to .55 for the warmth scale. Percent agreement ranged from 49% to 88%. Cronbach alphas for the composite hostility toward spouse scale were .77 for husbands' total hostility toward their wives and .80 for wives' total hostility toward their husbands. Cronbach alphas for the composite warmth toward spouse scale were .69 for wives and .70 for husbands.

Family Vulnerabilities

Lack of economic strain. Husbands and wives were asked at time 1 to rate on a scale from 1 = *strongly disagree* to 5 = *strongly agree* the extent to which they agreed that their family had enough money to afford those things that they needed and wanted (e.g., house, car, medical care, leisure pursuits; Conger, Rueter, & Elder, 1999). Total scale scores were first averaged within spouse, then averaged across spouses to create an average couple score. Higher scores indicated lower levels of perceived economic strain. Cronbach alphas at time 1 were .91 and .90 for wives and husbands, respectively.

Spouses' parents' marital happiness. Husbands and wives were asked at time 1 to rate on a scale of 1 (*Very unhappy*) to 4 (*Very happy*) how happy they perceived their mother was in her marriage to their father. They answered an identical question about their father's level of happiness in his marriage to their mother. Higher scores indicated higher levels of perceived parental marital happiness. Wives' and husbands' item scores were summed within spouse to create one score for each spouse reflecting their perception of their parents' marital happiness.

Neighborhood problems. Spouses were asked to rate on a 3 point scale (1 = *Never* to 3 = *Often*) the extent to which the following problems existed in their neighborhood: litter or trash on sidewalk and streets, graffiti on buildings or walls, public drinking, or vacant or abandoned buildings. Scores were created by averaging within spouse; higher scores indicated these items were more characteristic of the neighborhood. Cronbach alphas at time 1 were .63 and .49 for wives and husbands, respectively.

Life Stress

Child problem behaviors. Adolescents' teachers completed the Teacher Report Form of the Child Behavior Checklist (TRF; Achenbach, 1991) at time 1. The TRF measures internalizing problems (i.e., withdrawn, somatic complaints, and anxious/depressed scales) and externalizing problems (i.e., aggressive behavior and delinquent behavior scales). Teachers are asked to record which of the behaviors in the checklist described the adolescent within the last 6 months on a scale from 0 (*Not true as far as you know*) to 2 (*Very true or often true*). The total scale for each subscale was created by summing across all items; higher scores indicate higher levels of internalizing and externalizing problem behaviors. The Cronbach alpha at time 1 for teachers' reports of externalizing behaviors was .93 and for reports of internalizing behaviors was .87.

Spouses' work-family conflict. Spouses' work-family conflict was measured using an 8-item scale assessing the extent to which husbands and wives perceived the demands of their job interfered with family life and their ability to enact family roles. Sample items include: "My work schedule often conflicts with my family life" and "My work takes up time I'd like to spend with my family." Scale anchors for each item ranged from 1 = *strongly agree* to 5 = *strongly disagree*. Scale scores were created by averaging across the 8 items and then averaging across spouses to create an average couple score; higher scores indicated lower levels of work-family strain. Cronbach alpha reliabilities at time 1 were .90 and .88 for employed wives and husbands, respectively.

Life events. The life events scale is the youth's report of 24 potentially stressful events (e.g., parent getting a new job, having trouble with a teacher, moving to a new

home or school) that were rated as 1 = *never happened* to 3 = *happened in the last 6 months* (Sarason, Johnson, & Siegel, 1978). Scale scores were created by summing across the 24 items, and total scores could range from 24 to 72. Cronbach alpha reliability at time 1 was .69.

Analytic Method

The AMOS 4.0 structural modeling program (Arbuckle & Wothke, 1999) was used for all model analyses. Amos uses full maximum likelihood estimation (FIML) with missing data, which results in unbiased parameter estimates and appropriate standard errors when data are missing at random (MAR). FIML estimates are generally superior to those obtained with listwise deletion or other ad hoc methods, even when the MAR assumption is not fully met (Acock, 2005). SEM offers several advantages to the study of relationships among multiple variables. One of these is the ability to assess model fit for any given model using a set of standard goodness of fit indices. Several goodness of fit indices were used in the present analyses. The first of these is the inferential goodness of fit index, the chi-square value. The chi-square value is used when testing the null hypothesis that the model fits the analyzed covariance matrix perfectly (Raykov & Marcoulides, 2000). Thus, one can consider the rejection of a model if its p value is smaller than the preset significance value (typically .05) and retain the model if the p value exceeds the preset limit. The chi-square statistic, however, is subject to false model rejection for large sample sizes given the tendency for large sample sizes to produce large values for the statistic, which often are associated with small p values (Raykov & Marcoulides). Thus, other fit indices were examined. The non-normed fit index (NNFI)

was evaluated. The non-normed fit index is a variant of the normed fit index (NFI) and takes into account the number of degrees of freedom in the proposed model. The NNFI compares the value of the chi-square statistic of the proposed model to that of the null model, thus offering an estimate of how much better the proposed model fits the data than the null model does, in which no relationships exist among latent variables (Bentler, 1993; Raycov & Marcoulides).

Two indices that draw upon the noncentrality parameter also were used. These indices assist in evaluating the extent to which the model *fails* to fit the data. The root mean square error of approximation (RMSEA) is particularly useful because it is one of few indices to not be sample-dependent. RMSEA values of less than .05 have been suggested as indicative of a good model approximation to the data, and values of .08 or lower are considered acceptable (Browne & Cudeck, 1993). Lastly, the comparative-fit index (CFI) was examined. The CFI is defined as the ratio of improvement in noncentrality to the noncentrality of the null model (Bentler, 1990). Values close to 1 are considered to be indicative of a reasonably well-fitting model.

CHAPTER IV

RESULTS

Results are presented in several parts to correspond with the study research goals. Preliminary results are reported first, describing the correlations between indicators in the proposed model as well as the mean differences between husbands and wives on all indicators of the endogenous variables. Next, results for the hypothesized time-ordered and autoregressive models are presented. Results for the respecification analyses are presented next, followed by results for the tests of structural invariance between spouses. Lastly, results from the testing of alternative direct effects models are presented.

Preliminary Analyses

The intercorrelations among indicator variables in the model as well as their means, standard deviations, skewness, and kurtosis are shown in Table 2. Couples' perceived economic strain was negatively correlated with both husbands' and wives' reports of neighborhood problems ($r = -.21$ and $-.22$, respectively). Husbands' and wives' perceptions of their own parents' marital happiness were correlated ($r = .24$), but neither variable was correlated with any other indicators of family vulnerabilities, with one exception: husbands' perceptions of their own parents' marital happiness were positively related to couples' perceptions of economic strain ($r = .14$). With only two exceptions, the indicators of life stressors were *not* correlated with one another. The life

events scale was positively correlated with teachers' reports of youth's internalizing ($r = .20$) and externalizing ($r = .13$) behaviors. Ratings of husbands' and wives' expressions of warmth toward one another were positively correlated ($r = .50$) as were the ratings of their hostility ($r = .54$). The only other significant correlation to emerge between the indicators of marital behavior was a negative correlation between ratings of wives' warmth and husbands' hostility ($r = -.18$). All of the indicators of marital satisfaction were positively correlated with one another, both within (r s range from .82 to .90) and between (r s range from .16 to .25) spouses. This same pattern also was true for the indicators of personal well-being, with one exception: wives' and husbands' reports of depressive symptoms were not significantly correlated ($r = .10, ns$). The majority of the family vulnerability indicators were not correlated with the indicators of marital behavior. The only two exceptions were significant, though weak, correlations between wives' reports of their parents' marital happiness and observer ratings of wives' warmth ($r = -.11$) and hostility ($r = -.12$) towards their husbands. The only significant correlation obtained between indicators of life stressors and marital behaviors was for couples' work strain and wives' hostility towards their husbands ($r = -.17$). Most of the marital behavior indicator variables were correlated with the indicators of both husbands' and wives' marital satisfaction, and in the expected direction. The one notable exception was that ratings of husbands' hostility towards their wives were not significantly correlated with either husbands' or wives' indicators of marital satisfaction. Nearly all the marital satisfaction indicator variables were correlated in the expected direction with the indicators of personal well-being within spouses.

Mean differences between husbands and wives for all indicators of endogenous variables were examined. Wives were rated by the observational coders as higher in sadness: $t(308) = 5.71$, warmth: $t(321) = 3.17$, and hostility: $t(320) = 3.58$. There were no significant differences between husbands' and wives on any of the indicators of marital satisfaction (i.e., the 3 items from the KMS; $t(328) = .16, -.28, \text{ and } -.24$ for items 1, 2, and 3, respectively) or for two of the three indicators of personal well-being (i.e., depression: $t(331) = .70$, and life satisfaction: $t(331) = -.75$).

Hypothesized Time-Ordered and Autoregressive Models

To test the first set of research questions, structural equation models were estimated to examine the associations among family vulnerabilities, life stressors, marital behaviors, marital satisfaction, and personal well-being. Factor loadings for the hypothesized time-ordered measurement model and the standardized path coefficients from the analytic model are presented in Figure 2. In testing the structural models, the path to the indicator with the largest factor loading (based on the measurement model) for each latent construct was fixed at 1.00 in order to scale the latent factors. As can be seen by the factor loadings in Figure 2, one of the latent constructs proved problematic in the hypothesized time-ordered model: life stressors. Thus, although fit indices were adequate ($\chi^2 = 391.76, df = 146, p < .0001, CFI = .986, NNFI = .982, RMSEA = .071$ for husbands and $\chi^2 = 373.73, df = 146, p < .0001, CFI = .987, NNFI = .983, RMSEA = .068$ for wives) the inadequate measurement of life stressors was addressed. Work-family strain, youth internalizing problems, and youth externalizing problems were dropped from the model (and from subsequent analyses, as these indicator variables continued to exhibit

nonsignificant factor loadings), and life events was retained as a manifest indicator with a direct path to marital behaviors. When this respecified model was analyzed, spouses' perceptions of their own parents' marital happiness were no longer significant indicators of family vulnerabilities (data not shown). Thus, those two variables were dropped from further analyses. This newly respecified model (i.e., one in which family vulnerabilities was measured by spouses' perceptions of financial adequacy and husbands' and wives' perceptions of neighborhood problems, and life events was retained as a manifest indicator) resulted in an improvement in fit over the originally hypothesized model ($\Delta\chi^2 = 255.08$, $df_{diff} = 98$, $p < .001$ for wives and $\Delta\chi^2 = 274.84$, $df_{diff} = 98$, $p < .001$ for husbands). The respecified time-ordered model also resulted in adequate fit indices ($\chi^2 = 116.92$, $df = 48$, $p < .0001$, CFI = .995, NNFI = .992, RMSEA = .065 for husbands and $\chi^2 = 118.65$, $df = 48$, $p < .0001$, CFI = .995, NNFI = .992, RMSEA = .066 for wives).

Although this respecified time-ordered model appeared to be an adequate representation of the data, the respecification resulted in a poor fit in the autoregressive models ($\chi^2 = 620.452$, $df = 165$, $p < .0001$, CFI = .979, NNFI = .974, RMSEA = .091 for husbands and $\chi^2 = 651.108$, $df = 165$, $p < .0001$, CFI = .978, NNFI = .972, RMSEA = .093 for wives). Attempts at respecification were made to find a representative model that used similar constructs across both time-ordered and autoregressive models.

Respecified Time-Ordered and Autoregressive Models

Examination of the autoregressive model specified above indicated that the latent construct of marital behaviors might be misspecified, as spouses' own observed marital behaviors were not loading significantly on the marital behaviors construct. For example,

in the model predicting change in wives' personal well-being, wives' hostility and warmth towards their husbands were not significant indicators of the marital behavior construct. A model using only one's spouse's observed warmth and hostility created an unidentified latent construct. Thus, the measures of observed warmth and hostility were broken down into their respective items. Because the use of all items that comprised the measures of warmth and hostility would have resulted in a latent construct with 24 indicators (6 items for each measure from both husbands and wives), the first respecification used those items with the greatest variance: husbands' and wives' observed prosocial and antisocial behaviors. This respecified model followed a pattern similar to the model discussed above: spouses' own observed behaviors displayed nonsignificant factor loadings on the latent construct, and models using only husbands' and wives' spouses' observed prosocial and antisocial behaviors resulted in an unidentified latent construct. Respecification again occurred with a focus on identifying a model using only one's spouse's marital behaviors. Attempts at combining both positive and negative behaviors were unsuccessful. The most representative model that converged for both husbands' and wives' time-ordered and autoregressive models that made sense substantively and theoretically was a model in which negative marital behaviors were measured by one's spouse's levels of observed antisocial behavior, hostile behavior, and contempt.

Time-ordered models. As shown in Figure 3, one of the four hypothesized paths in this respecified time-ordered model was significant ($p < .0001$) and in the expected direction. For both husbands and wives, marital satisfaction was positively associated

with personal well-being ($\beta = .38$ for both husbands and wives). Note that higher values of the latent construct personal well-being represented more positive personal well-being. As can be seen in the model, for wives the paths from family vulnerabilities and life events to husbands' negative marital behaviors were not significant, nor was the path from husbands' marital behaviors to wives' marital satisfaction. For the husbands' model, however, the paths from family vulnerabilities and life events to wives' negative marital behaviors were significant at the trend level ($p = .08$ and $.06$ for family vulnerabilities and life events, respectively). The fit indices for the hypothesized model were adequate ($\chi^2 = 153.69$, $df = 62$, $p < .0001$, CFI = .993, NNFI = .990, RMSEA = .066 for husbands and $\chi^2 = 108.67$, $df = 62$, $p < .0001$, CFI = .996, NNFI = .995, RMSEA = .047 for wives) and the hypothesized model explained 15% of the variance in both husbands' and wives' personal well-being.

Autoregressive models. Results for the respecified autoregressive model are shown in Figure 4. All standardized effects shown account for the controls for time 1 marital satisfaction and time 1 personal well-being, with stability coefficients shown in the model. Similar to the time-ordered models, only one of the four hypothesized paths in the autoregressive model was significant ($p < .0001$) and in the expected direction. For both husbands and wives, change in marital satisfaction was positively associated with change in personal well-being ($\beta = .14$ and $.16$ for husbands and wives, respectively). For the wives' model, the paths from family vulnerabilities and life events to husbands' negative marital behaviors were not significant. For both spouses, the path from spouses' marital behaviors to change in marital satisfaction was not significant. For the husbands'

model, however, the path from life events to wives' negative marital behaviors was significant at the trend level ($p = .07$). The fit indices for the hypothesized model were adequate ($\chi^2 = 443.718$, $df = 147$, $p < .0001$, CFI = .985, NNFI = .981, RMSEA = .077 for husbands and $\chi^2 = 425.581$, $df = 147$, $p < .0001$, CFI = .986, NNFI = .982, RMSEA = .075 for wives) and the hypothesized model explained 65% of the variance in husbands' personal well-being and 52% of the variance in wives' personal well-being.

Structural Invariance between Spouses: Time-Ordered and Autoregressive Models

In order to test the hypothesis that gender differences might exist in the associations between variables specified in this study, spouse gender was treated as a moderator using a multiple group model comparing husbands and wives. Both the respecified time-ordered and autoregressive models were estimated twice: once with each casual pathway free to vary between the two groups and again with each path constrained one at a time to be the same between the two groups. The value of the χ^2 statistic from the fully constrained model (Bollen, 1989) was compared to the initial multigroup model in which no equality constraints were imposed. If the difference in χ^2 values across these analyses is not statistically significant, the causal structure of the proposed model is equivalent across both husbands and wives. Both the time-ordered and autoregressive models were invariant for spouses' gender ($\Delta\chi^2 = 4.187$, $df_{diff} = 4$, $p = ns$ and $\Delta\chi^2 = 5.71$, $df_{diff} = 6$, $p = ns$, for time-ordered and autoregressive models, respectively). That is, the model fit the data equally well, and the path coefficients were statistically invariant, for wives and husbands.

Alternative Time-Ordered and Autoregressive Models

To address the final research question, (i.e., whether the nested indirect effects model was a better representation of the data than the direct effects models), the chi-square difference between the respecified model, the direct effects to marital satisfaction model, and the direct effects to personal well-being model was examined following procedures described by Bollen (1989) for both the time-ordered and autoregressive models. Unless the direct effects model yields a significantly better chi-square, the more parsimonious indirect effects model is retained.

Time-ordered direct effects models. For husbands, the model with direct paths from family vulnerabilities and life stressors to marital satisfaction did fit significantly better than the model that did not include these direct paths ($\Delta\chi^2 = 7.56$, $df_{diff} = 2$, $p < .05$). For wives, however, the model with a direct path from family vulnerabilities and life stressors to marital satisfaction did not result in an improved fit ($\Delta\chi^2 = .88$, $df_{diff} = 1$, $p = ns$). For both husbands and wives, the model with direct paths from family vulnerabilities and life events to personal well-being resulted in a better fit ($\Delta\chi^2 = 23.69$, $df_{diff} = 2$, $p < .001$ and $\Delta\chi^2 = 9.77$, $df_{diff} = 1$, $p < .01$ for husbands and wives, respectively). As shown in Figure 5, the path from family vulnerabilities and life events to personal well-being was significant for both husbands' and wives' models. This direct effects model explained 19% of the variance of wives' well-being and 21% of husbands' well-being.

Autoregressive direct effects models. For both husbands and wives, the autoregressive model with direct paths from family vulnerabilities and life stressors to marital satisfaction did not fit significantly better than the model that did not include

these direct paths ($\Delta\chi^2 = 2.559$, $df_{diff} = 2$, $p = ns$ and $\Delta\chi^2 = 3.09$, $df_{diff} = 2$, $p = ns$, for husbands and wives, respectively). For both husbands and wives, the model with direct paths from family vulnerabilities and life events to personal well-being resulted in a better fit than the model that did not include these paths ($\Delta\chi^2 = 12.18$, $df_{diff} = 2$, $p < .01$ and $\Delta\chi^2 = 16.523$, $df_{diff} = 2$, $p < .01$ for husbands and wives, respectively). As shown in Figure 6, the path from family vulnerabilities to personal well-being was significant for both husbands' and wives' models, as was the path from life events to personal well-being. This direct effects model explained 56% of the variance of wives' well-being and 70% of husbands' well-being.

Structural invariance of direct effects models. Spouse gender was tested as a moderator using a multiple group model comparing husbands and wives. Both the time-ordered and autoregressive direct effects models were estimated twice: once with each casual pathway free to vary between the two groups and again with each path constrained one at a time to be the same between the two groups. The value of the χ^2 statistic from the fully constrained model (Bollen, 1989) was compared to the initial multigroup model in which no equality constraints were imposed. Both the time-ordered and autoregressive direct effects models were invariant for spouses' gender ($\Delta\chi^2 = 1.03$, $df_{diff} = 6$, $p = ns$ and $\Delta\chi^2 = 2.27$, $df_{diff} = 8$, $p = ns$, for time-ordered and autoregressive direct effects models, respectively). That is, the model fit the data equally well, and the path coefficients were statistically invariant, for wives and husbands.

CHAPTER V

DISCUSSION

The association between marital satisfaction and spouses' personal well-being is well established in the family studies and family psychology literatures. Although models specifying the ways in which contextual variables and life stressors influence both marital satisfaction and personal well-being exist in the literature on family studies, no model had been proposed that jointly considered these variables longitudinally. The present study built on and extended previous theorizing and research to build a testable model by integrating three theoretical models: (a) Karney and Bradbury's (1995) vulnerability-stress-adaptation model of marriage, (b) Billings and Moos' (1982) framework for the analysis of adaptive processes, depression and personal functioning, and (c) Beach and colleagues' (1990) marital discord model of depression. In addition, the present study addressed previous limitations in the literature on the interrelations among contextual, behavioral, and perceptual variables by (a) using multiple reporters for the latent constructs under study, (b) using family-level data rather than unrelated samples of husbands and wives, and (c) expanding the conceptualization of personal well-being to include self-reports of depression and life satisfaction as well as observational reports of sadness.

Three central research goals were addressed in the present study. First, a conceptual model was proposed and the associated causal model pathways were examined simultaneously in both time-ordered and autoregressive longitudinal models. Next, the moderating role of gender was addressed by examining the structural invariance of the respecified model for both husbands and wives. Lastly, the proposed indirect effects model was compared to a direct effects model to determine which model best represented the associations among the contextual, behavioral, and perceptual variables. The discussion is organized around these central research goals. In addition, future research directions and study limitations are considered.

The Hypothesized Model

The hypothesized model postulated that at time 1, family vulnerabilities are associated positively with life stressors, and the family vulnerabilities and life stressors that couples experience are associated with spouses' marital behaviors. Marital behaviors at time 1 were hypothesized to predict marital satisfaction at time 2, which then was hypothesized to predict personal well-being at time 3, such that higher levels of marital satisfaction are related to higher levels of personal well-being. However, support was not found for the hypothesized measurement model. Specifically, the latent constructs of family vulnerabilities, life stressors, and marital behaviors each had indicators with poor factor loadings. Each of these latent constructs and their respecification is discussed below.

Family vulnerabilities. In the hypothesized model, the construct of family vulnerabilities was measured by five indicators: couples' perceptions of financial

adequacy, husbands' and wives' perceptions of neighborhood problems, and husbands' and wives' perceptions of their own parents' marital happiness. Two of these indicators had poor factor loadings in the measurement model. Specifically, both husbands' and wives' perceptions of their own parents' marital happiness were nonsignificant indicators of family vulnerabilities. One possible explanation for this finding is that these indicators were paired with indicators of couples' perceptions of financial adequacy and both spouses' perceptions of neighborhood problems. It is likely that these five indicators together were a poor conceptual fit for measurement of family vulnerabilities, and although individually they might be factors that place spouses at risk for experiencing life stressors and exchanging negative marital behaviors with one another, as a whole they did not represent a cohesive construct of family vulnerabilities.

Although previous research suggests that spouses' experiences in their families of origin influence behavioral exchanges in their own marriages (Booth & Edwards, 1989; Caspi & Elder, 1988), spouses' perceptions of their parents' marital happiness likely represent a cognitive evaluation, whereas perceptions of financial adequacy and neighborhood problems are evaluative of resources and physical environments. Thus these two groups of constructs might exert their influences on marital behaviors in different ways. Perceptions of one's own parents' marital happiness might place couples at risk because of learned behavior patterns and appraisals about marriage in general (Booth & Edwards; Caspi & Elder), whereas perceptions of neighborhood problems and financial adequacy might deplete spouses' abilities to manage life stressors and communicate effectively (Cutrona et al., 2003). When the indicators of spouses'

perceptions of their parents' marital happiness were removed from the model, the remaining paths between the latent and observed variables (i.e., financial adequacy and neighborhood problems) were significant.

Life stressors. In the hypothesized model, the latent construct of life stressors was measured by four indicators: youth's report of the family's recent life events, couples' perceptions of work-family strain, and teachers' report of youths' internalizing and externalizing behavior. Three of these indicators had nonsignificant factor loadings: couples' work-family strain and teachers' reports of youths' internalizing and externalizing behaviors. Further, when these indicators remained in the measurement model, the indicator of life events had a standardized factor loading greater than 1.00. Thus, the indicator of life events was retained as a manifest indicator in the respecified model, whereas the other three indicators were removed from the model.

These results for the measurement of life stressors were somewhat surprising. One possible explanation for the lack of support for the indicators of youth's problem behaviors is that they were derived from teacher, not parent, reports. If it is parents' *perceptions* of youths' personal characteristics or problem behaviors that influence marital exchanges and are related to perceptions of other life stressors, then teacher reports derived from their observation of youths in a school setting might not be strongly related to behaviors exchanged during marital interaction. Another possible related explanation for the lack of support for the measurement of the life stressors latent construct was that the original indicators drew from three different reporters: spouses, youths, and teachers. Much of the current published research using structural equation

modeling and specifying latent constructs draws on measures from the same reporter (e.g., parents' reports of work-family strain and life events), or on similar measures completed by different reporters (e.g., both parent and teacher reports of youth problem behavior). Thus, it might be particularly difficult to specify a latent construct using three different reporters as well as three different aspects of the latent construct (i.e., work-family strain, life events, and youth problem behavior, all reported on by different reporters).

Marital behaviors. The latent construct of marital behaviors originally was hypothesized as a dyadic construct, encompassing both spouses' behavioral exchanges toward one another. In other words, husbands' displays of warm and hostile behaviors toward their wives as well as wives' displays of warm and hostile behaviors toward their husbands were hypothesized to predict both marital satisfaction one year later as well as change in marital satisfaction. However, final respecification of the proposed model suggested that only one's spouse's marital behaviors were significant indicators of marital behaviors. Further, only negative behaviors such as ratings of hostility, antisocial behavior, and contemptuous behavior were included in the final models. Indeed, a spouse's own displays of either positive or negative marital behaviors did not load significantly onto the latent construct of marital behaviors when examining their own personal well-being. Thus, in the models predicting wives' personal well-being, only husbands' negative behaviors toward their wives were included as indicators of the latent construct of marital behavior, and vice versa. This finding also was somewhat unexpected, as previous research using similar behavioral rating scales (i.e., the Iowa

Family Interaction Rating Scales) has been successful in specifying models with marital behavior exchanges as a dyadic concept (e.g., Mathews, Wickrama, & Conger, 1994). However, much of this previous research attempted to predict marital instability at the dyadic level, rather than marital satisfaction and personal well-being at the level of the individual spouse. Thus, the fact that the models examined in the present study were spouse specific, and did not include dyadic outcomes, might be related to the finding that a dyadic construct of marital behaviors would not fit the data well. Previous research partially supports this idea, in that a study on newlyweds suggested that for husbands, only wives' negative marital interaction behaviors were related to the rate at which husbands' marital satisfaction changed over time (Karney & Bradbury, 1997).

It also is possible that the direction of effects hypothesized in this model helps to explain this measurement finding. For example, it is quite plausible that rather than husbands' own behavior toward their wives predicting their own levels of marital satisfaction over time, that husbands' levels of marital satisfaction would be predictive of their behavior towards their wives a year later.

The Respecified Model

After measurement model respecification, time-ordered and autoregressive models were tested to examine the proposed causal pathways. Although all four models (i.e., husbands' and wives' time-ordered models and autoregressive models) were adequate representations of the associations among the variables examined, only partial support was found for the hypothesized causal pathways among the model constructs. Because the findings for the causal pathways were nearly identical for both husbands'

and wives' time-ordered and autoregressive models, I discuss all four models simultaneously.

The only hypothesized model pathway that was significant was that from spouses' own marital satisfaction to spouses' personal well-being. Thus, in the time-ordered models, the higher one's reports of marital satisfaction at time 2, the higher one's level of personal well-being one year later. In the autoregressive models, change in marital satisfaction from time 1 to time 2 predicted change in personal well-being from time 1 to time 3, such that increases in marital satisfaction over time were related positively to increases in personal well-being. These findings support previous theorizing and research on the longitudinal association between marital satisfaction and personal well-being (Beach et al., 1990) and add to a growing literature suggesting that the most likely direction of effects between these two constructs is from marital satisfaction to personal well-being (e.g., Beach et al.; Proulx et al., under revision). Linear change in marital satisfaction did predict linear change in personal well-being in the present study, but future research should explore if these two constructs change in similar ways over time (e.g., is the pattern of change best described as linear, quadratic, or cubic for both constructs) and whether these potentially different patterns exert similar influences on one another. Recent research suggests that the association between marital satisfaction and personal well-being is 'doubly developmental' (Kurdek, 1998) in that marital satisfaction and spouses' personal well-being tend to change together. What remains unknown, particularly in the study of established marriages (Beach et al., 2003), is if changes in marital satisfaction over time precipitate rates of change in personal well-

being. Because research suggests that spouses' reports of marital satisfaction show monotonic rates of linear decline over time (Vaillant & Vaillant, 1993), but reports of personal well-being tend to fluctuate around a relatively stable mean (Kurdek), it appears particularly important to study the link between changes in marital satisfaction and personal well-being over extended periods of time in established marriages.

For the models predicting both spouses' personal well-being, no support was found for the paths from both family vulnerabilities and recent life events to spouses' negative marital behaviors. This suggests that family vulnerabilities such as economic and neighborhood factors, as well as stressful life events, do not have a significant association with spouses' concurrent expressions of negative marital behaviors. This finding supports previous work suggesting that spouses' reports of recent life events are not related concurrently to observed marital behavior exchanges between spouses (Cohan & Bradbury, 1997). It is important to note that although the findings of the present study appear to point to a potential gender difference in the causal pathways (as the paths from family vulnerabilities and life events to wives' negative marital behaviors) are approaching significance in the model predicting husbands' personal well-being), these two paths were structurally invariant between spouses—an important point I return to in the next section.

For both husbands and wives, spouses' expressions of negative marital behavior did not predict their spouses' marital satisfaction one year later, nor were they predictive of spouses' change in marital satisfaction from time 1 to time 2. These findings refute behavioral theories on marriage, which suggest that the exchange of negative behaviors

during a marital interaction task harm spouses' perceptions of the marriage (Karney & Bradbury, 1995; Markman, 1981) and that marital interaction, over time, will shape spouses' evaluations of the marriage (Karney & Bradbury). Several explanations of this null finding are possible. One, it is possible that a one year time span is too large a span of time to capture the influence of marital behaviors on marital satisfaction. This potential explanation has received recent attention in the literature on marital relationships, in that some researchers have suggested that the most appropriate time span between measurement of marital constructs is closer to 6 months, rather than one year (Fincham et al., 1997).

Another possible explanation stems from the fact that the indicators of the latent construct of marital behaviors were drawn only from trained coders' ratings of behavioral exchanges. First, it is possible that a behavior interpreted as hostile, antisocial, or contemptuous by an observational coder is not interpreted similarly by a spouse. Further, even if such a behavior is interpreted similarly by both a trained observational coder and a spouse, it is possible that spouses draw upon internal working models that help to explain their partners' behavior, or at least place potentially negative behaviors in a nonmarital context. One such concept is sentiment override, in which spouses' subjective evaluations of their partners' behaviors differ from that of an outsider's evaluations because spouses draw upon previous experience or alternate subjective explanations unknown to the outsider to help interpret their spouses' behavioral exchanges (Weiss, 1980). This can partially explain the potential difference between an outsiders' evaluation of a behavior and a spouse's evaluation of that exact same behavior. Another possible

way spouses might interpret or even ‘write off’ their partners’ negative behavior is by making attributions for their spouses’ behaviors. The bulk of the spousal attributions literature examines the link between spouses’ marital satisfaction and the attributions spouses make for marital events (e.g., Fincham & Bradbury, 1993; Karney, Bradbury, Fincham, & Sullivan, 1994). This research finds that spouses who are dissatisfied with their marriages are more likely to attribute their spouses’ behavior to stable and global personality characteristics of the spouse. However, the research on attributions has not focused on more temporal events, such as daily hassles or stressors, and the potential attributions spouses might make when considering behaviors within these contexts. Although when using the Iowa Family Interaction Rating Scales trained observers do rely partially on context to assist them in rating a particular behavior, only spouses would be cognizant of specific contexts (such as ones not captured in the present model) that might help spouses explain or justify a particular behavior. For example, if a husband is rated as high in expression of hostile, antisocial, and contemptuous behavior toward his wife by an outside observer, but his wife is aware that due to family or life circumstances not explained by this model (e.g., a fight with his boss, car trouble, a sick parent, etc.) he has been especially irritable, she might be more likely to attribute his behavior to circumstances external to their marriage, and thus, his behaviors might have no long term influence on her perception of marital satisfaction. This potential explanation points to the need for several areas of future research: the associations between marital behaviors and (a) life events as reported by spouses (not by youths as in the present study) and (b) spouses’ perceptions of daily hassles over time. In addition, the inclusion of spouses’

attributions for their spouses' behaviors would be useful in ascertaining that spousal attributes do play a moderating role in this association.

Gender as a Moderator

Those who hypothesize gender differences in the strength of the association between marital quality and personal well-being point to socialization differences regarding the emphasis on interpersonal relationships, as well as structural differences in the allocation of power in marriage (Allen & Walker, 2000). It is suggested that women are socialized to maintain the social climate of their relationships (Blatt & Zuroff, 1992), and that women's well-being is tied more closely to the emotional climate of their marriages (Thompson & Walker, 1989). Despite this theorizing, the empirical evidence is mixed (e.g., Barnett et al., 1994; Coyne & Benazon, 2001; Davila et al., 2003; Kurdek, 2005; Voss et al., 1999). Whereas some previous meta-analytic work on the association between marital quality and depression suggests that the strength of this association is stronger for women than it is for men (Whisman, 2001), more recent work exploring the association between marital quality and personal well-being both cross-sectionally and longitudinally suggests that no such gender difference exists (Proulx et al., under revision). The present study sought to determine whether gender moderated not only the associations between marital satisfaction and personal well-being, but also the associations among variables hypothesized to influence this relationship. For all models examined, gender did not emerge as a significant moderator and each path in the model was structurally invariant between spouses.

One possible methodological explanation for this finding is that the comparisons made in this study were from husbands and wives in the same marriage. Recent research suggests that when comparing husbands and wives from the same marriage smaller differences between the sexes may emerge than when comparing husbands and wives who are not from the same marriages, as spouses within the same marriage might be quite similar to each other in their assessments of marital satisfaction (Kurdek, 2005; Watson, Hubbard, & Wiese, 2000).

This lack of gender differences in the causal model pathways also raises an important point when examining potential gender differences among variables. I remind the reader of the seemingly divergent findings in the structural paths from both family vulnerabilities and life stressors to spouses' marital behaviors. As described above and illustrated in Figures 3 and 4, those paths reached a trend level significance when associated with wives' marital behavior but not with husbands'. However, as the tests for invariance suggested, the magnitude of those model pathways did not differ statistically between husbands and wives. This finding illustrates the importance of conducting tests on the magnitude of effects, rather than merely determining that an effect appears significant for one sex but not the other (Karney & Bradbury, 1995; Kurdek, 2005).

Indirect versus Direct Effects Models

The last goal of the present study was to compare the hypothesized indirect effects model with direct effects models to determine which was a better explanation of the proposed processes. Support was not found for the hypothesized indirect effects model as a superior model, as the direct effects models (i.e., time-ordered and

autoregressive) proved to be a better fit. Specifically, the models in which family vulnerabilities and life events had direct effects over time on personal well-being proved to be the best explanation for the data. Both family vulnerabilities and life events were related to spouses' personal well-being two years later, as well as changes in spouses' personal well-being over a two year time span. No support was found for the hypothesis that enduring family vulnerabilities, life events, and adaptive processes such as marital behavior exchanges exert their influence on spouses' personal well-being through their marital satisfaction. Rather, it appears that there is a direct, significant relationship between these contextual variables and personal well-being, as well as between marital satisfaction and personal well-being.

This direct relationship raises several issues for future research. It is possible that marital satisfaction plays a buffering role and moderates (rather than mediates) the association between these contextual variables and spouses' personal well-being, such that at higher levels of marital satisfaction, the association between contextual variables and personal well-being is attenuated. It also is possible that the associations among context, marital satisfaction, and personal well-being reflect a cyclical pattern of stress generation (Davila, Bradbury, Cohan, & Tochluk, 1997), in that recent life events and enduring family vulnerabilities have a direct influence on personal well-being, which in turn has a direct negative influence on marital satisfaction, which in turn negatively influences spouses' personal well-being. Although there is limited support in the literature to date for this stress generation model (Davila et al.), this pattern of associations has not been studied in the context of couples' life events or vulnerabilities,

and future research considering these constructs simultaneously over time might help to clarify the associations among them.

Conclusions

Although this study had numerous strengths, including the use of a large sample of couples at similar points in the life course, general study limitations must be considered. The sample used in the present study is predominately White and middle-class, and it is unknown if the findings of this study would translate to more ethnically or economically diverse samples. This issue is particularly salient for studies using observational ratings, as virtually no research has explored potential ethical considerations of observational research when studying ethnic groups other than European Americans. For example, privacy concerns that might be more salient in some cultures could prohibit spouses' participation or significantly alter their behavior when observed on camera. Further, given the emphasis on contextual variables in the present models, it is quite likely that studies of more ethnically or economically diverse samples would be influenced by additional or alternative variables. Thus, future research should explore this model and similar models to help explain the association among contextual variables, behavioral variables, marital satisfaction, and personal well-being.

Another limitation is that the present study examines only linear change in the variables of interest. Although the stability coefficients for personal well-being over the 3 waves of data collection were quite high, the stability coefficients for marital satisfaction over one year were only moderate in strength. This suggests that change does occur over time for spouses' levels of marital satisfaction, and that the patterns of change of these

two constructs might differ. Thus, future research should address the question of whether changes in marital satisfaction between multiple assessments affect personal well-being at each assessment while controlling for the overall trajectory of personal well-being across time. Do changes in marital satisfaction between assessments predict deviations from an individual spouse's overall trajectory of personal well-being? Answering this question would provide a more nuanced approach to the study of the association between these two variables.

It is clear from the research to date that there is a causal association between spouses' marital satisfaction and their personal well-being, and future research should continue to explore the possible mechanisms underlying this link. The results of this study do not entirely explain why or how spouses' evaluations of their marriages predict their personal well-being over time, and this question remains largely unanswered by the available research literature. The findings of this study offer only limited support for the proposed contextual process model of the associations among family vulnerabilities, recent life events, marital behavior, marital satisfaction, and personal well-being. Although the indirect effects of family vulnerabilities and recent life events on marital satisfaction and personal well-being through marital behaviors were not supported, support was found for a direct effects model in which family vulnerabilities, life events, and marital satisfaction had direct influence on personal well-being over time. Further, no support was found for gender differences in the hypothesized causal model pathways. This result, combined with the results of recent studies exploring gender differences within marriage (e.g., Kurdek, 2005), suggests that previous findings of gender

differences might have been partially a methodological artifact of comparing wives and husbands who were not partners in the same marriages. However, although the strength of the association among contextual, behavioral, and perceptual variables when examining marital satisfaction and personal well-being might not differ between husbands and wives within the same marriages, future research should continue to explore husbands' and wives' joint and individual lived experiences of their marriages and the contexts in which those marriages take place.

Although only limited support was found for the hypothesized model, the results of this study add to the literature examining married couples within the contexts of their daily lives by suggesting that family level vulnerabilities and stressful life events have a lasting impact on spouses' personal well-being. Further, marital satisfaction is related to spouses' personal well-being over time, in that higher levels of marital satisfaction are associated with higher levels of personal well-being. Future efforts towards increasing the depth of our knowledge in this area will result in a body of research that better unveils the complexities of marital relationships, the contexts in which they are situated, and the ways in which both factors are associated with spouses' well-being.

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APPENDIX A. TABLES AND FIGURES

Table 1

Sample Demographic Characteristics (N = 338) at Time 1 in Frequency and (Percent)

Characteristic	Wives	Husbands
Race		
White	320 (95)	321 (95)
African American	9 (3)	10 (3)
Other	9 (3)	8 (2)
Education		
No high school degree	6 (2)	5 (2)
High School degree or GED	64 (19)	53 (16)
Some college	56 (17)	59 (17)
Associate's degree	37 (11)	21 (6)
Bachelor's degree	124 (37)	118 (35)
Master's degree	42 (12)	49 (14)
Professional or doctorate degree	9 (3)	32 (9)
Employed		
Yes-Full time	159 (47)	304 (90)
Yes-Part time	87 (26)	6 (2)
No	74 (22)	10 (3)
Other	18 (5)	17 (5)
Family income		
\$0- 29,999		16 (5)
\$30,000- 49,999		49 (14)
\$50,000- 69,999		85 (25)
\$70,000- 99,999		103 (30)
\$100,000 or more		68 (21)

Note. Percentages may not add to 100 due to rounding error or missing data.

Table 2. *Descriptive Statistics and Intercorrelations among Indicator Variables*

Variables	1	2	3	4	5	6	7	8	9
Family Vulnerabilities: Time 1									
1. Financial adequacy: couples	-								
2. Neighborhood problems: wives	-.22	-							
3. Neighborhood problems: husbands	-.21	.49	-						
4. Wives' parents' happiness	.06	-.08	-.05	-					
5. Husbands' parents' happiness	.14	-.10	-.06	.24	-				
Life Stressors: Time 1									
6. Work strain: couples	.06	-.05	.01	.02	.05	-			
7. Youths' internalizing behavior	-.04	.00	.00	.05	.03	.05	-		
8. Youths' externalizing behavior	-.02	.00	.04	-.01	-.05	.03	.05	-	
9. Life events	-.13	.13	.17	-.17	-.06	-.02	.20	.13	-

Table 2, *Continued*

Variables	1	2	3	4	5	6	7	8	9
Marital Behavior: Time 1									
10. Wives' warmth	.06	.05	.05	-.11	-.08	-.02	.03	.01	-.04
11. Husbands' warmth	.06	.03	.07	-.03	.05	.05	.00	-.04	-.05
12. Wives' hostility	-.08	.02	-.07	-.12	-.06	-.17	-.05	-.01	.09
13. Husbands' hostility	-.04	-.04	.01	-.09	-.10	-.02	.02	.01	.02
Marital Satisfaction: Time 2									
14. Marriage: wife	.18	-.05	.04	.06	.02	.11	-.01	.04	-.12
15. Spouse: wives' report	.17	-.07	.02	.06	.01	.11	-.04	.01	-.09
16. Relationship with spouse: wives'	.19	-.06	.03	.04	.03	.11	.01	.01	-.12
17. Marriage: husbands	.11	-.05	-.10	-.05	.05	.02	.02	-.05	-.14
18. Spouse: husbands' report	.10	-.01	-.07	-.08	.06	.02	.01	-.01	-.12

Table 2, *Continued*

Variables	1	2	3	4	5	6	7	8	9
19. Relationship with spouse: husb	.18	.00	-.04	-.07	.06	.06	.04	-.04	-.16
Personal well-being: time 3									
20. Sadness: wives	-.23	.13	.10	-.11	-.08	-.02	-.03	.02	-.09
21. Sadness: husbands	-.17	.12	.06	-.07	-.10	.06	-.01	.02	-.01
22. Depressive symptoms: wives	-.14	.10	.08	-.07	-.09	-.17	-.05	.03	.19
23. Depressive symptoms: husbands	-.30	.16	.16	.11	-.11	-.10	.01	.17	.19
24. Life satisfaction: wives	.30	-.17	-.05	.17	.13	.26	.07	-.04	-.23
25. Life satisfaction: husbands	.34	-.13	-.11	.02	.11	.25	.02	-.08	-.26
<i>M</i>	32.28	4.49	4.43	2.93	3.09	3.44	.39	.38	31.71
<i>SD</i>	4.87	.95	.74	.95	.93	.65	1.13	1.29	4.18
<i>Skewness</i>	-.81	3.48	1.94	-.57	-.86	-.17	3.87	5.11	.52
<i>Kurtosis</i>	.81	17.81	3.87	-.67	-.16	.22	16.18	31.69	.24

Note. *N*s range from 308 to 338 due to missing data. Coefficients ranging from .11. to .14 are significant at $p < .05$. Coefficients greater than .14 are significant at $p < .01$.

Table 2, *Continued*

Variables	10	11	12	13	14	15	16	17	18
Marital Behavior: Time 1									
10. Wives' warmth	-								
11. Husbands' warmth	.50	-							
12. Wives' hostility	-.05	-.04	-						
13. Husbands' hostility	-.05	-.18	.54	-					
Marital Satisfaction: Time 2									
14. Marriage: wife	.15	.09	-.11	.00	-				
15. Spouse: wives' report	.17	.09	-.12	.00	.90	-			
16. Relationship with spouse: wives'	.20	.13	-.13	-.02	.90	.89	-		
17. Marriage: husbands	.13	.15	-.10	-.02	.22	.21	.25	-	
18. Spouse: husbands' report	.11	.16	-.08	-.03	.16	.16	.20	.88	-

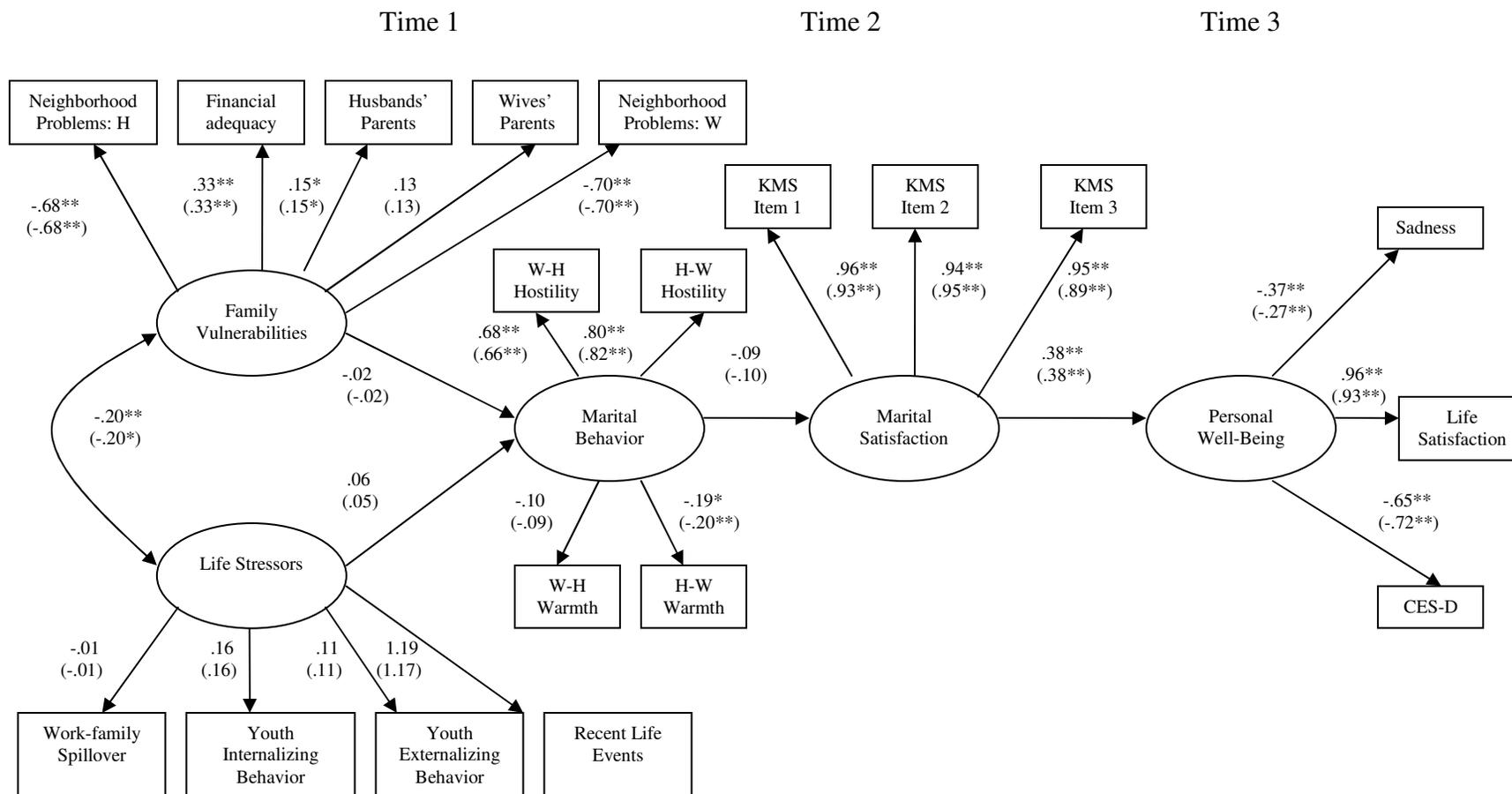
Table 2, *Continued*

Variables	10	11	12	13	14	15	16	17	18
19. Relationship with spouse: husb	.12	.16	-.12	-.06	.22	.21	.25	.82	.84
Personal well-being: time 3									
20. Sadness: wives	.16	.18	.19	.05	-.13	-.10	-.12	-.04	.01
21. Sadness: husbands	.06	.08	.17	.12	-.15	-.13	-.14	-.15	-.10
22. Depressive symptoms: wives	-.06	.00	.15	.09	-.15	-.17	-.19	-.09	-.08
23. Depressive symptoms: husbands	.03	-.03	.16	.08	-.12	-.08	-.11	-.26	-.23
24. Life satisfaction: wives	.12	.10	-.21	-.13	.34	.35	.39	.18	.16
25. Life satisfaction: husbands	.04	.10	-.19	-.11	.27	.24	.27	.35	.31
<i>M</i>	22.28	21.38	20.71	19.10	5.88	5.90	5.79	5.84	5.89
<i>SD</i>	4.91	4.82	7.96	7.15	1.37	1.41	1.35	1.42	1.40
<i>Skewness</i>	.59	.73	1.61	1.90	-1.82	-1.81	-1.57	-1.83	-1.90
<i>Kurtosis</i>	.35	1.07	3.61	4.73	3.17	2.99	2.30	3.00	3.31

Table 2, *Continued*

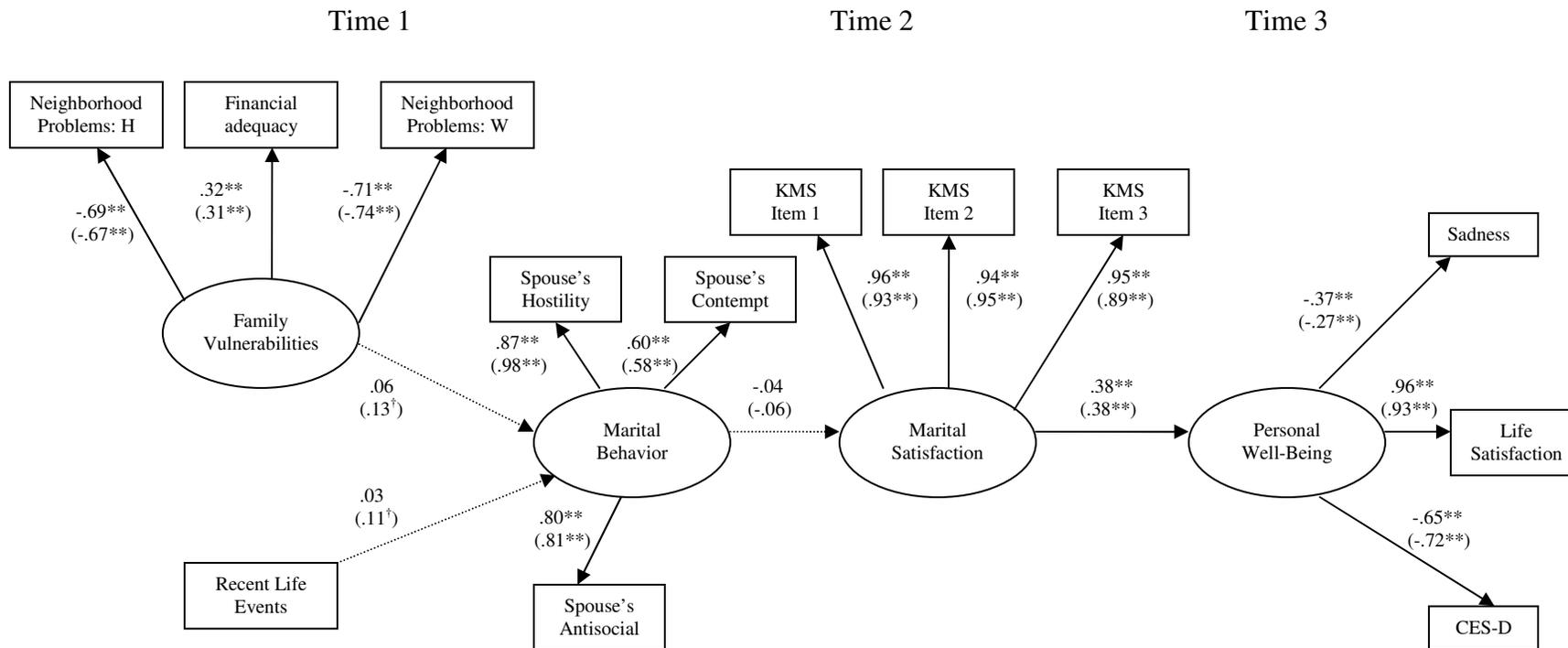
Variables	19	20	21	22	23	24	25
19. Relationship with spouse: husb	-						
Personal well-being: time 3							
20. Sadness: wives	-.02	-					
21. Sadness: husbands	-.10	.33	-				
22. Depressive symptoms: wives	-.08	.33	.11	-			
23. Depressive symptoms: husbands	-.21	.11	.21	.10	-		
24. Life satisfaction: wives	.21	-.36	-.28	-.63	-.26	-	
25. Life satisfaction: husbands	.35	-.15	-.24	-.22	-.67	.48	-
<i>M</i>	5.78	4.47	3.79	8.58	8.26	4.08	4.10
<i>SD</i>	1.31	1.93	1.62	8.05	7.62	.60	.61
<i>Skewness</i>	-1.78	.73	1.14	1.64	1.55	-.98	-1.00
<i>Kurtosis</i>	3.35	.15	1.71	3.79	3.22	1.26	1.34

Figure 2. Analytic model for the associations between family vulnerabilities, life stressors, marital behavior, spouses' own marital satisfaction, and spouses' own personal well-being.



Note. Path coefficients in parentheses are husbands' data; remaining coefficients are wives'.
 $*p < .05$. $**p < .01$.

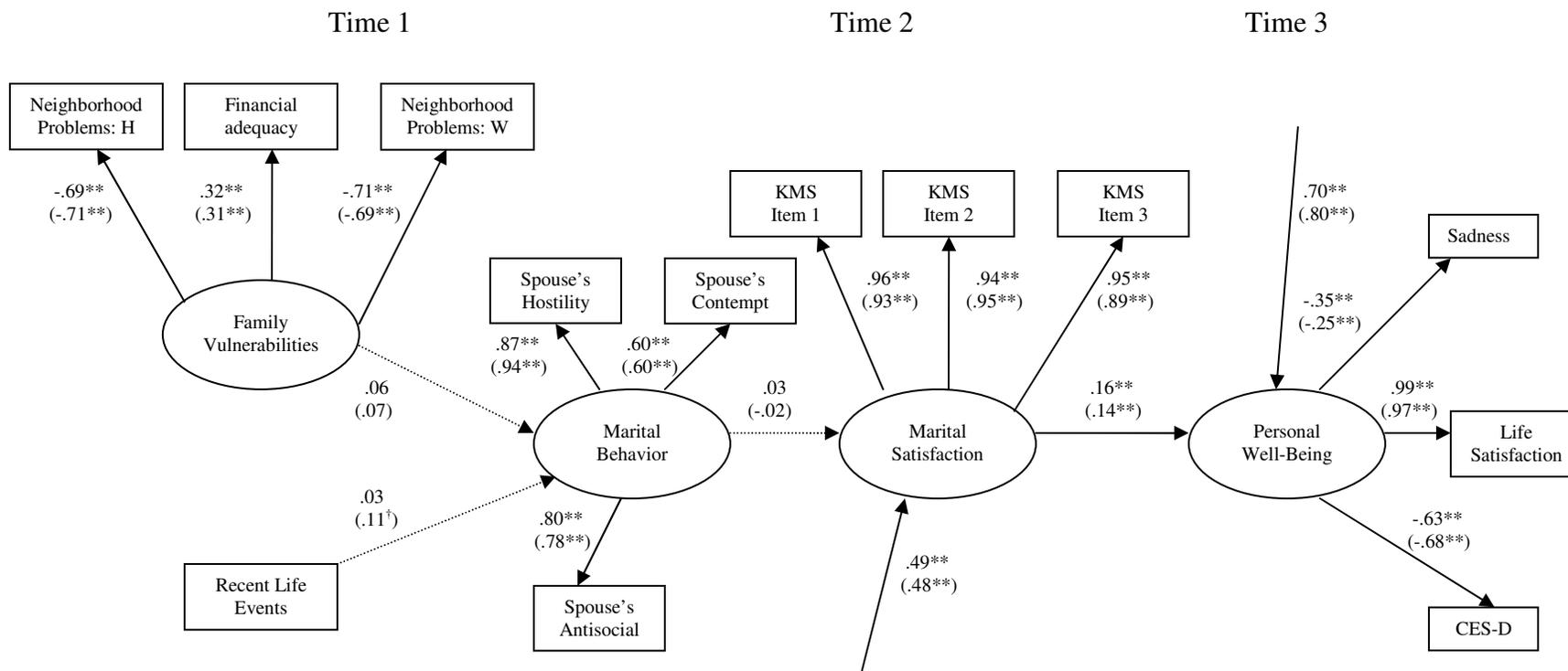
Figure 3. Analytic model for the time-ordered associations between family vulnerabilities, life stressors, spouses' marital behavior, spouses' own marital satisfaction, and spouses' own personal well-being.



Note. Path coefficients in parentheses are husbands' data; remaining coefficients are wives'.

$^{\dagger}p < .10$, $*p < .05$. $**p < .01$.

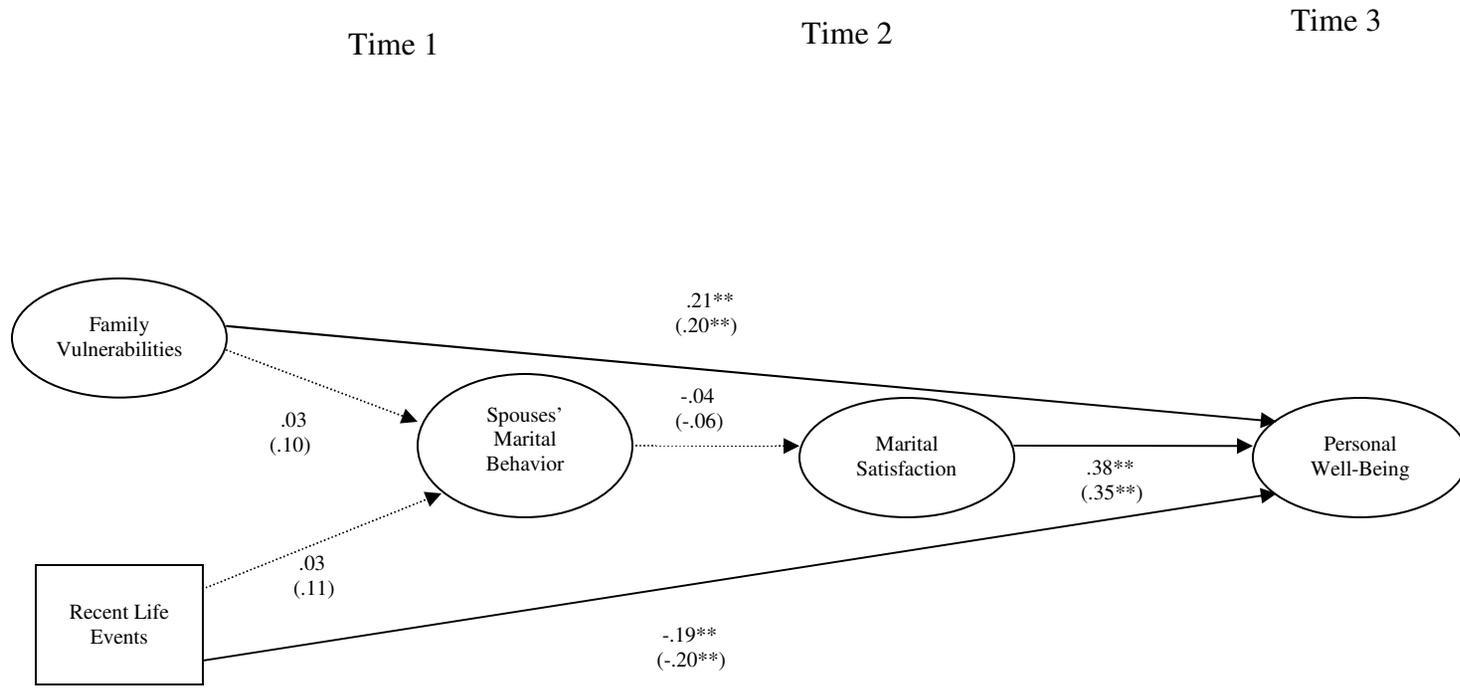
Figure 4. Analytic model for the autoregressive associations between family vulnerabilities, life stressors, spouses' marital behavior, spouses' own marital satisfaction, and spouses' own personal well-being.



Note. Path coefficients in parentheses are husbands' data; remaining coefficients are wives'.

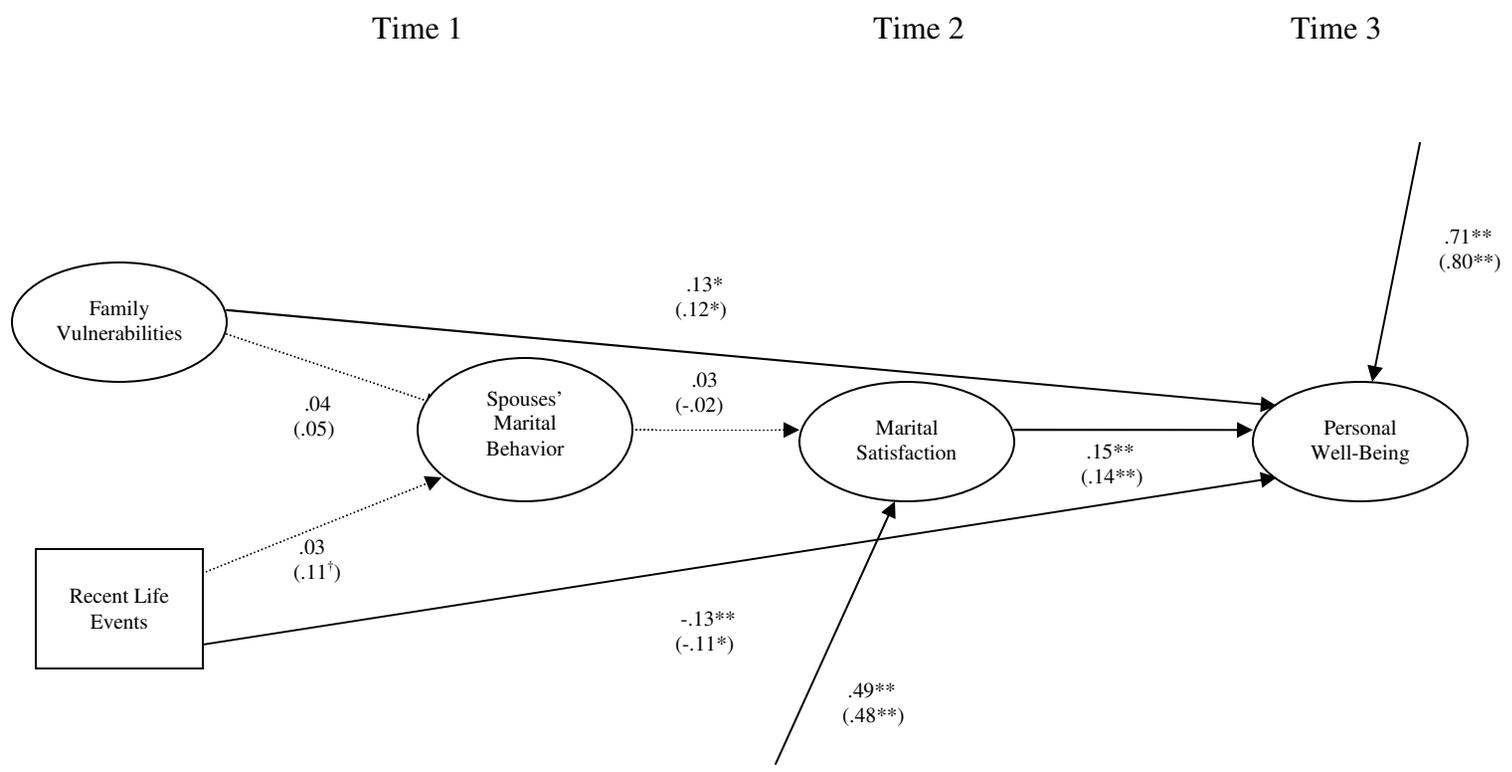
[†] $p < .10$, * $p < .05$. ** $p < .01$.

Figure 5. Standardized estimates from alternative time-ordered model testing the direct and indirect associations among family vulnerabilities, life events, spouses' marital behavior, spouses' own marital satisfaction, and spouses' own personal well-being.



Note. Path coefficients in parentheses are husbands' data; remaining coefficients are wives'.
 * $p < .05$. ** $p < .01$.

Figure 6. Standardized estimates from alternative autoregressive model testing the direct and indirect associations between family vulnerabilities, life events, spouses' marital behavior, spouses' own marital satisfaction, and spouses' own personal well-being.



Note. Path coefficients in parentheses are husbands' data; remaining coefficients are wives'.
[†] $p < .10$, * $p < .05$. ** $p < .01$.

APPENDIX B. MARITAL QUALITY AND PERSONAL WELL-BEING:

A META-ANALYSIS

The association between marital quality and personal well-being is well demonstrated in the literature on marital relationships (Whisman, 2001). For example, individuals experiencing marital dissatisfaction tend to report higher levels of depressive symptomatology than those who are maritally satisfied (Beach, Arias, & O'Leary, 1986; Culp & Beach, 1998), and marital happiness or satisfaction is positively associated with wives' life satisfaction (Freudiger, 1983) as well as with wives' and husbands' reports of global happiness (Glenn & Weaver, 1981) and self-esteem (Voss, Markiewicz, & Doyle, 1999). A longitudinal association also is established, such that marital dissatisfaction predicts increases in depressive symptoms over time (Beach & O'Leary, 1993a, 1993b; Fincham, Beach, Harold, & Osborne, 1997), co-varies with changes in depressive symptoms (Karney, 2001; Kurdek, 1998), and increases risk for a major depressive episode in the year following clinical assessment (Whisman & Bruce, 1999).

In a recent meta-analytic review of the literature on marital quality and depression, Whisman (2001) found that marital quality was negatively associated with depressive symptoms for both men and women (weighted mean effect size $r = -.37$ and $r = -.42$, respectively) across 26 cross-sectional studies drawing from community samples. Whisman also assessed an additional 10 studies that drew from clinical populations of patients with diagnosed depression and found a strong association between marital satisfaction and depression (weighted mean effect size $r = -.66$ for men and women combined). Although it appears that there is a significant, negative link between marital

satisfaction and both depression/depressive symptoms, this meta-analysis has several limitations. Longitudinal studies were excluded from the analysis, and only studies using standardized measures of marital quality and depression/depressive symptoms were included. Excluding longitudinal studies limits the conclusions that can be drawn about potential causality, and also omits some of the most methodologically advanced studies from being included in the meta-analysis. Further, limiting the analysis to studies only using standardized measurement excludes a variety of potentially important studies, particularly large-scale, nationally representative surveys using single-item indicators. Finally, moderators of the association between marital quality and personal well-being were not explored, limiting conclusions that can be drawn about the conditions under which marital quality and personal well-being are associated.

The purpose of the present study was to provide a systematic review of the literature on marital quality and personal well-being that addresses these limitations, providing a stronger conceptual and empirical foundation for future research. Further, by including studies using a longitudinal design, we add to the literature supporting or refuting theoretical models that suggest initial levels of marital quality lead to later levels of personal well-being. We used meta-analytic techniques to summarize and organize data from 93 previously published studies assessing the link between marital quality and spouses' personal well-being. We address limitations of previous meta-analytic work and build on this review in several ways: (a) expand the definition of the independent and dependent variables; (b) include studies using longitudinal designs; and (c) test for moderators of the association between marital quality and personal well-being.

Conceptualization and Literature Review

Marital predictors of well-being have been variously labeled marital quality, success, happiness, satisfaction, discord, adjustment, and well-being (Fincham & Bradbury, 1987; Lewis & Spanier, 1982). Empirical support exists linking these variables to spouses' personal well-being. For example, both cross-sectional and longitudinal studies have found an association between spouses' personal well-being and marital happiness (Rogers & DeBoer, 2001), marital disagreements (Schafer, Wickrama, & Keith, 1998), marital love and conflict (Cox, Paley, Burchinal, & Payne, 1999), marital intimacy (Culp & Beach, 1998), marital satisfaction (Beach et al., 1986), and marital discord (Christian, O'Leary, & Vivian, 1994). In the present study, the term marital quality is used to reflect the central dimension that the majority of these terms have in common.

Previous meta-analytic work on marital satisfaction and personal well-being has conceptualized well-being as depressive affect or clinically-diagnosed depression (Whisman, 2001). Understanding the link between marital quality and depressive symptomatology in both clinical and nonclinical samples is important because both clinical and subclinical levels of depression pose a significant and costly threat to both individuals and society (Beach, Sandeen, & O'Leary, 1990; Broadhead, Blazer, George, & Kit Tse, 1990). Individuals with nonclinical but moderate levels of depressive symptoms are likely to perform more poorly at both work and home compared to individuals suffering from other chronic ailments (Wells et al., 1989) and to their less depressed counterparts (Beach, Martin, Blum, & Roman, 1993). Although both

depression and depressive affect are included as dependent variables in this analysis and comprise the majority of the research on the links between marital quality and personal well-being, the conceptualization of personal well-being is expanded in this meta-analysis to include other indicators of well-being, such as self-esteem, physical health, and life satisfaction. Although the bulk of the research exploring links between marriage and outcomes more positive in valence has examined marital *status* and how it relates to these variables, an increasing number of researchers recognize that the *quality* of one's marriage also is related to positive personal well-being and might be a better predictor of personal well-being than marital status alone (Ross, 1995). By expanding the definition of personal well-being we also recognize marital intervention as a potential starting point for bolstering positive dimensions of personal well-being and physical health rather than simply alleviating depressive symptoms.

Theoretical Perspectives

The hypothesis that marital quality leads to personal well-being is informed primarily by the marital discord model of depression (Beach et al., 1990). This model was developed partially in response to Weissman's (1987) call for greater attention to marital relationships as a possible treatment target for patients with depressive symptomatology. Studies focusing on clinically diagnosed patients suggest that they perceive, at least retrospectively, that their marital dissatisfaction preceded their depressive symptoms more often than the reverse (Birtchnell & Kennard, 1983; O'Leary, Riso, & Beach, 1990). Further, Beach and colleagues' own work (Beach, Jouriles, & O'Leary, 1985) suggested that over half of the couples in their study who were

dissatisfied in their marriages also were characterized by mild to moderate levels of depressive symptomatology. Drawn from this clinical work on depressed individuals dissatisfied in their marriages, the theoretical model states that marital discord or dissatisfaction likely leads to increased risk of depression by limiting or removing available resources (e.g., spousal support), increasing spouses' stress, and increasing the levels of overt hostility experienced in the marriage. Specifically, Beach and colleagues suggest that marital dissatisfaction decreases positive marital elements such as couple cohesion, acceptance of emotional expression, spousal dependability, and intimacy. Further, marital dissatisfaction is hypothesized to increase negative marital elements such as verbal and physical aggression and severe spousal denigration, criticism, and blame.

Although the emergence of this model initially was meant to help guide therapists working with depressed couples or individuals to intervene therapeutically at the level of the marital dyad, the model applies equally well to explaining the pathways in the non-clinical population that connect marital discord or dissatisfaction to personal well-being. Support for the model can be found in the contemporary literature on marital quality and personal well-being. Current evidence from longitudinal studies suggests that there is a prospective relationship between marital quality and depressive symptoms (Beach, Katz, Kim, & Brody, 2003; Fincham et al., 1997). Marital discord at one point in time appears to predict increased levels of depressive symptoms one year later, even when controlling for initial symptoms and intervening life events (Beach et al., 1988; Beach & O'Leary, 1993a). Further evidence for the influence of marriage on personal well-being comes from research examining the impact of a positive marital event in improving or

alleviating depressive symptoms. Brown and colleagues (Brown, Adler, & Bifulco, 1988; Brown, Lemyre, & Bifulco, 1992) found that a “fresh start” event or significant improvement in a marital problem might prompt recovery from a depressive episode that has become chronic, suggesting that marital changes precede, and might produce, changes in depressive symptoms.

Many of the marital processes that are hypothesized to influence depression in the marital discord model also are hypothesized to influence other personal well-being variables. Recent research has moved beyond examining the links between marital status and personal well-being by examining marital quality, suggesting, as does the marital discord model of depression, that it is the processes within marital relationships rather than the mere existence of another adult in the household that contribute to feelings of positive and negative well-being. Supportive marriages appear to offer multiple benefits to spouses’ personal well-being, including promoting physical health (Wickrama, Lorenz, Conger, & Elder, 1997) and self-esteem (Voss et al., 1999), whereas conflict-ridden marriages and marriages characterized by low levels of cohesion appear to have a negative impact on aspects of well-being such as self-esteem (Voss et al.).

The Present Study

The purpose of the present study was to provide a more comprehensive review of how marital quality is linked with personal well-being both concurrently and over time using meta-analytic techniques. Based on theoretical considerations as well as previous research, we hypothesized that marital quality would be positively related to personal well-being, such that higher levels of marital quality would be related to higher levels of

personal well-being (e.g., greater self-esteem or lesser depressive symptoms). In addition, researchers studying the relationship between marital quality and personal well-being have called for more research exploring the potential moderating variables of this relationship (Davila, Karney, Hall, & Bradbury, 2003; Whisman, 2001) but meta-analytic work to date has failed to do so. Thus, a primary goal of this study was to examine several potential moderator variables. Specifically, we examined the moderating influence of sample, measurement, and design characteristics. In addition, an index of methodological quality was constructed to determine if methodological quality was related to the strength of the association between marital quality and personal well-being. Although some of the moderator analyses were exploratory in nature, we drew from the theoretical and empirical literature and formulated hypotheses for several of the potential moderator variables.

Moderating Role of Sample Characteristics

Gender. Those who hypothesize gender differences in the strength of the association between marital quality and personal well-being point to socialization differences regarding the emphasis on interpersonal relationships, as well as structural differences in the allocation of power in marriage (Allen & Walker, 2000). It is suggested that women are socialized to maintain the social climate of their relationships whereas men are more focused on accomplishment and autonomy (Blatt & Zuroff, 1992), and that women's well-being is tied more closely to the emotional climate of their marriages (Thompson & Walker, 1989). Further, wives typically have less power and status in their relationships and might invest in them more than their husbands because of husbands'

desires to maintain the status quo (Allen & Walker). Thus, wives might be more vulnerable to marital dissatisfaction (Beach et al., 2003; Whisman, 2001) and perceive marital discord as a more significant stressor than husbands (Dehle & Weiss, 1998). Some researchers and theorists have suggested that women might accept more blame or responsibility if marital relationships become distressed, with increased levels of marital distress being perceived as a personal, rather than a relational inadequacy or problem (Moberg & Lazarus, 1990). These feelings of blame or responsibility might lead women to experience increased depressive symptoms (Davila et al., 2003) and decreased levels of self-esteem, life satisfaction, and physical health. Although the empirical evidence is mixed (e.g., Barnett, Brennan, Raudenbush, & Marshall, 1994; Coyne & Benazon, 2001; Davila et al., 2003; Voss et al., 1999), in his meta-analytic review of 26 studies, Whisman found that the association between depressive symptoms and marital dissatisfaction was significantly stronger for women than it was for men. Thus, we hypothesized that the association between marital quality and personal well-being is stronger for women than for men.

Marital duration. Length of marriage is another potential moderator of the relationship between marital quality and personal well-being. Marital quality is thought to decline after the first few years of marriage, experiencing the sharpest declines after the honeymoon period wears off (Glenn, 1998; Vaillant & Vaillant, 1993). In addition, current evidence suggests that half of all divorces occur within the first 7 years of marriage (Amato & Cheadle, 2005). However, even if couples in relatively young marriages are experiencing some of the problematic processes that are hypothesized to

erode perceptions of marital quality and lead to decreased levels of personal well-being, it might take some time for these effects to begin manifesting themselves. Thus, we hypothesized that the association between marital quality and personal well-being is weaker for those studies sampling couples who have been married for 3 years or less than for those sampling couples who have been married 4 years or more and for those samples in which length of couples' marriages is varied.

Parental status. Research suggests that the presence of children in the home can be an added stressor on marital well-being, with parents reporting lower levels of marital quality than nonparents (Goldstein & Ross, 1989). In addition, previous research suggests that the presence of children in the home might have negative consequences for parents' personal well-being given the added time demands and stressors parents are likely to experience (Ge, Conger, Lorenz, Shanahan, & Elder, 1995; McLanahan & Adams, 1987; Umberson & Gove, 1989). Thus, with the added strain on both marital quality and personal well-being, we hypothesized that the association between marital quality and well-being is stronger for those individuals with children than for those without children.

Clinical and nonclinical samples. Based on previous meta-analytic work (Whisman, 2001), we hypothesized that there is a stronger association between marital quality and personal well-being when a clinical sample is used. Clinical samples are unique in that the spouses involved have already taken steps toward treating their symptoms (either by seeking marital therapy or treatment for depression). It is possible that these couples are more likely to be experiencing both marital difficulties and symptoms of depression because, as the marital discord model of depression suggests,

they have insufficient marital support to cope with their problems and this leads to increased levels of depressive symptoms (Beach et al., 1990). Thus, it is possible that the association between marital quality and personal well-being is an artifact of treatment seeking, inflating the association (Whisman).

Additional moderators. In addition to testing the hypotheses stated above, we conducted exploratory analyses to determine if race, socio-economic status, and number of marriages moderated the relationship between marital quality and personal well-being.

Moderating Role of Measurement Characteristics

Number of scale items. Because the use of large, nationally representative studies that often include single-item indicators to measure marital satisfaction, general life satisfaction, and physical health is increasing, we tested whether the item level of the scale used (i.e., single-item versus multi-item) moderated the association between marital quality and personal well-being. We hypothesized that the association between these two variables is stronger for studies using multi-item indicators of either marital quality or personal well-being than it is for those using single-item indicators, for two possible reasons. First, multi-item measures might be more likely to assess some of the processes through which marital quality influences spouses' well-being, as well as some of the specific dimensions of personal well-being that might be most affected. Second, this association might be stronger because, as previous researchers have suggested, the use of standardized, multi-item scales might produce inflated associations between marital quality and other self-report measures (Bradbury, Fincham, & Beach, 2000).

Additional moderators. In addition to testing the hypothesis stated above, we conducted exploratory analyses to determine if measurement domain (i.e., global or specific), measurement method, measurement source, and marital quality measurement component (i.e., affective, cognitive, behavioral, or some combination of the three) moderated the relationship between marital quality and personal well-being.

Moderating Role of Study Design Characteristics

Study year. Another potential moderator of the relationship between marital quality and personal well-being is the year in which the study was conducted. Given the increasing social awareness and acceptance of depressive symptoms as well as physical symptoms indicative of poor health, we might expect individuals to be more likely to endorse such symptoms in surveys than in previous years. Further, given an increased emphasis on intimacy, love, and disclosure as the primary rewards of marriage (Cherlin, 2004; Giddens, 1992), spouses in contemporary marriages may have higher expectations for their relationship and their personal well-being might be influenced by unmet expectations. Thus, we hypothesized that the association between marital quality and personal well-being is stronger in studies conducted since 1990 than in studies conducted from 1980-1989.

Study design and treatment of the dependent variable. We hypothesized that the association between marital quality and personal well-being is stronger for cross-sectional studies than for longitudinal studies, because most longitudinal studies control for initial measurement of the dependent variable. Although we hypothesized that the causal direction leads from marital quality to personal well-being and only longitudinal

studies can test this causal relationship, cross-sectional studies typically conceptualize either spouses' well-being or marital quality as the dependent variable. For both cross-sectional and longitudinal studies, we anticipated, based on previous research and theorizing (e.g., Beach et al., 1990) that the association is stronger when marital quality is the independent variable than when personal well-being is the independent variable.

Use of control variables. Lastly, we explore the moderating role of partialized statistics, and hypothesized that the association between marital quality and personal well-being is weaker for those studies in which control variables were used than in those in which they were not.

Methodological quality. We hypothesized that our indicator of methodological quality moderates the relationship between marital quality and personal well-being, such that studies with higher methodological quality would produce smaller estimates of the association between marital quality and personal well-being.

Method

Study Selection

Several techniques were used to locate research studies. First, we used two computerized databases- PsychInfo and EbscoHost - entered with the following descriptors: marital satisfaction, marital quality, marital adjustment, marital discord, marital outcomes, depression, well-being, psychological well-being, self-esteem, life satisfaction, and marriage (or derivatives). Second, a manual search was conducted by searching the abstracts (or text of the article if the abstract did not indicate whether a measure of well-being was used) from 1980 (or first issue date if later than 1980) through

the second issue of 2005 of the following journals: *Journal of Marriage and Family*, *Family Relations*, *Journal of Family Issues*, *Journal of Social and Personal Relationships*, *Personal Relationships*, *Journal of Family Psychology*, and *Journal of Personality and Social Psychology*. Lastly, we supplemented the computerized and manual searches with literature reviews from the selected articles, as well as the reference lists of key review articles in the fields of family studies and family psychology.

Inclusion criteria for studies were (a) the work was published in English, (b) the association between marital quality and some aspect of individual well-being was examined, (c) the assessment of marital quality and personal well-being was consistent with the conceptual definitions stated earlier, (d) at least one useable statistical measure of association was calculated, (e) the study was published since 1980, and (g) the sample, or subsample, in the study was comprised only of married individuals.

Most studies contributed a single independent sample or several independent subsamples. Some longitudinal studies included results treating both marital quality and personal well-being as dependent variables. In these cases, we included only those effects for which personal well-being was the dependent variable. Occasionally, two studies used the same data set. We included both studies in the analysis if they used different independent or dependent variables, or different subsamples. For those cases in which two or more studies used the same sample or the same independent or dependent variables, we retained only the study with the largest sample size. These selection procedures resulted in the review of 93 studies (229 effects).

Calculation of Effects

The primary effect used in this study is the product-moment correlation (r) for studies that did not use control variables, and the partial correlation for studies that used control variables. The product-moment correlation was calculated based on formulas described by Rosenthal (1991). A few studies reported only that an association was nonsignificant. In these cases we assumed an r of zero, a conservative estimate of the actual effect. The “failsafe N ” also was calculated, providing an estimate of the number of additional nonsignificant effect sizes needed to reduce the obtained effect size to a nonsignificant value (Rosenthal). Marital quality measures were coded so that a higher score indicated greater marital quality. Similarly, the higher the well-being score, the more optimal personal well-being was (e.g., lower levels of depression or higher levels of self-esteem).

Study Characteristics Coded for Each Effect

Each relevant effect and its associated characteristics were coded. Moderators were selected based on the following: (a) suggestions from the literature and key review articles; (b) conceptual, operational, and methodological considerations; and (c) key variables presented in the literature as factors that might confound the relationship between marital quality and personal well-being. The following sample characteristics were coded: (a) race, (b) gender, (c) socioeconomic status, (d) parental status, (e) marital duration, (f) number of marriages, and (g) whether or not the study was based on a clinical sample. Measurement characteristics coded were (a) source of marital quality and personal well-being measures [e.g., the Beck Depression Inventory (BDI; Beck &

Beamesderfer, 1974)]; (b) method of measurement; (c) whether the measure of marital quality assessed an affective, cognitive, or behavioral component, or a combination of these components; (d) whether marital quality and personal well-being were positive (e.g., self-esteem, satisfaction) or negative (e.g., depression, levels of conflict) dimensions; (e) whether single item or multi-item measures were used; and (f) whether the study assessed global or domain-specific components of marital quality and personal well-being. In addition, we also coded the following study design characteristics: (a) year data were collected; (b) whether the effect was cross-sectional, longitudinal predicting personal well-being, or longitudinal predicting marital quality; (c) for cross-sectional studies, which variable was treated conceptually as the dependent variable; and (d) whether statistical controls were used in the analysis. Table 1 lists all codes and the number of effects coded in their respective categories.

Because we were interested in determining if results varied with the study's methodological quality, we coded the quality associated with each effect estimate. Methodological quality scores ranged from 0 – 3 and were based on (a) sample quality (.5 for random sampling, and/or .5 for an effect coefficient based on 100 or more participants), (b) longitudinal research design (1 point), and (c) measurement quality (.5 for using latent variables with multiple indicators and/or .5 for using partialized statistical estimates).

All effects and their associated characteristics were coded by the first author. To assess the reliability of our coding, the second and third authors coded the effects and characteristics of a random 20% of the articles ($n = 19$). Inter-rater reliability was .96

averaged across all moderators. Disagreements in coding were resolved through discussion, and any resulting changes in coding were applied across all effect coefficients.

Calculation of Mean Effects

Prior to analysis, effects were transformed to z scores using Fischer's r to z transformation (Rosenthal, 1991; Shadish & Haddock, 1994). After significance testing, mean effect sizes were transformed back from z to r . The homogeneity coefficient H also was calculated. A significant H allows us to reject the null hypothesis that all studies share a common population effect size and search for moderating variables that might account for the variability in effects across studies (Hedges & Olkin, 1985).

Studies contributing more than one effect raised the issue of nonindependence among sampling units. Although several meta-analysts suggest using a single pooled effect size from each study (e.g., Rosenthal, 1991), others suggest that within categories of selected moderators effects should be aggregated (e.g., Glass, McGaw, & Smith, 1984). For example, we examined the moderating role of gender and therefore effects from men and women in the same sample were examined separately rather than aggregated. However, if the study included several measures of our dependent or independent variables, the individual r 's associated with each variable were averaged. For example, marital quality was assessed by three measures in the study by Johnson and Booth (1990)—marital happiness, thoughts about divorce, and quality of marital communication—and each was linked with individual well-being. Thus, the individual

r 's for the association between these three aspects of marital quality and personal well-being were calculated and averaged to obtain one aggregate effect.

Results

The Overall Effect between Marital Quality and Personal Well-being

Although most meta-analyses only present mean effect sizes for aggregated results, two effect sizes are presented here for comparison: one calculated after effects from nonindependent samples were aggregated and one before they were aggregated. After aggregation there were 159 effects, ranging in strength from $-.01$ to $.98$. Of these combined effects, 78% ($N = 124$) were statistically significant. The overall aggregated mean effect size was $r = .27$ ($SD = .18$). The weighted mean effect size was $r = .24$, suggesting that studies with larger sample sizes produced slightly smaller estimates of the association between marital quality and personal well-being. Prior to aggregation, there were 229 effects from 93 studies. Of these individual effects, 76% ($N = 173$) were statistically significant. Effects ranged from $-.05$ to $.98$. The overall mean effect size between marital quality and personal well-being prior to aggregation was $r = .27$ ($SD = .20$). Thus, as hypothesized, marital quality was associated positively with personal well-being. Using Cohen's (1977) criteria to assess the magnitude of this relationship, both mean effect sizes are approaching moderate in strength. A significant H also was obtained [$H(158) = 1815.75, p < .0001$]. This significant variability warrants tests for moderator variables to help identify potential sources of variation across effects.

Undoubtedly this meta-analysis missed some published studies, and dissertations and unpublished reports were excluded intentionally. To assess the number of studies

reporting null results needed to reduce the overall mean effect size to nonsignificance, the fail-safe N was calculated (Rosenthal, 1984). The fail-safe N for the total sample of aggregated effects sizes was 210. It is unlikely that this many studies reporting null results exist, and thus the finding that marital quality and personal well-being are related positively appears robust.

Moderating Effects of Sample Characteristics

Analysis of variance was used to determine which variables moderated the association between marital quality and personal well-being. Follow-up analyses were conducted with Tukey post-hoc tests. To avoid drawing inaccurate conclusions, we only interpret contrasts that are based on at least 10 effects in each compared category (see Table 1). In terms of sample characteristics, the association between marital quality and personal well-being was moderated only by length of marriage. The following sample characteristics were not significant moderators: gender, ethnicity, socioeconomic status, parental status, number of marriages, and whether the sample was drawn from a clinical or nonclinical population.

Length of marriage. As hypothesized, the association between marital quality and personal well-being was weaker for marriages of 3 years or less ($r = .16$) than for those 4-18 years in duration ($r = .36$) or for the heterogeneous group [$r = .26$; $F(3,135) = 5.28$, $p < .001$]. The association between marital quality and personal well-being for marriages of more than 18 years did not differ significantly from the other groups.

Moderating Effects of Measurement Characteristics

The association between marital quality and personal well-being was moderated by whether the well-being measure assessed a positive or negative component, whether it was a single-item or multi-item measure, and the source of the well-being measure. The following measurement characteristics were not significant moderators: whether the domain assessed for either variable was global or domain-specific, whether the marital quality measure assessed a positive or negative component, the source of the marital quality measure, whether the marital quality measure was a single-item or multi-item measure, and whether the marital quality measure assessed affective, cognitive, behavioral, or some combination of these components.

Valence of well-being component. The association between marital quality and personal well-being was stronger when the valence of the well-being component was negative (e.g., depression; $r = .29$) than when it was positive [e.g., self-esteem; $r = .17$; $F(1,152) = 5.93, p < .05$].

Measurement item level. As hypothesized, the association between marital quality and personal well-being was stronger when the well-being measure was a multi-item measure ($r = .28$) than when it was a single-item measure [$r = .13$; $F(1,157) = 6.67, p < .01$].

Well-being source. When personal well-being was assessed by what we labeled as “other” measures (e.g., latent variables in SEM, measures designed for a particular study) the association between marital quality and personal well-being was stronger ($r = .34$) than when measured by a single-item indicator [$r = .14$; $F(6,139) = 2.80, p < .05$].

However, there were no significant differences in effect sizes when the well-being source was a specific standardized measure (i.e., the BDI, CES-D full and short forms, SCL-90-R, Trait Anxiety Scale, HSCL, and Rosenberg Self-Esteem Scale).

Multivariate analyses. In addition to the univariate results reported above, multivariate analyses were conducted by performing a regression analysis. All measurement characteristics that were significant moderators of the relationship between marital quality and personal well-being were included. Moderators were recoded into dummy variables with the categories showing the strongest effects coded as 1, and all others coded as 0. More specifically, categorical predictors were coded as follows: (a) valence of well-being component was coded 1 = negative and 0 = positive, (b) item level was coded 1 = multi-item measure and 0 = single-item measure, and (c) well-being source was coded 1 = ‘other source’ and 0 = all other measures. As can be seen in Table 2, in terms of unique moderation, the effect size was stronger when the source of the personal well-being measure was ‘other’ (e.g., latent variables, measures designed for the study) than when measured in any other way.

Moderating Effects of Study Design Characteristics

The association between marital quality and personal well-being was moderated by the year the data were collected, whether the study was cross-sectional or longitudinal, and whether control variables were used. The association between marital quality and personal well-being also was moderated by whether the dependent variable was personal well-being or marital quality, but only for longitudinal studies. Further, the methodological quality of the study was inversely related to the average effect size.

Year of data collection. As hypothesized, the association between marital quality and personal well-being was stronger for studies in which the data were collected from 1990-2005 ($r = .30$) than for studies in which data were collected from 1980-1989 [$r = .24$; $F(1,157) = 4.03$, $p < .05$].

Study design. As hypothesized, the association between marital quality and personal well-being was stronger for effects based on cross-sectional studies ($r = .31$) than for those based on longitudinal studies predicting either personal well-being ($r = .21$) or marital quality [$r = .12$; $F(2,156) = 8.44$, $p < .001$].

Use of controls. As hypothesized, the association between marital quality and personal well-being was stronger for those effects calculated from analyses that did not include control variables ($r = .37$) compared with those that did [$r = .23$; $F(1,157) = 16.23$, $p < .0001$].

Dependent variable. As hypothesized, the association between marital quality and personal well-being was stronger for effects based on longitudinal studies treating well-being as the dependent variable ($r = .21$) than for longitudinal studies treating marital quality as the dependent variable [$r = .12$; $F(1,47) = 5.67$, $p < .05$]. However, there were no significant differences when examining which variable was conceptualized as the dependent variable in cross-sectional studies [$r = .32$ and $.30$ for personal well-being and marital quality, respectively; $F(1,109) = 0.89$, $p = .35$] and thus this variable was not included in the multivariate analyses.

Methodological quality. As hypothesized, our index of methodological quality was related inversely to the average effect size ($r = -.38$, $p < .01$). Studies with large or

random samples, controls for extraneous variance, and a longitudinal design were likely to yield smaller effects than less methodologically rigorous studies.

Multivariate analyses. Categorical predictors were coded as follows: (a) year of data collection was coded as 1 = 1990-2005, 0 = 1980-1989; (b) study design was coded as 1 = cross-sectional, 0 = longitudinal; and (c) use of control variables was coded as 1 = no and 0 = yes. As can be seen in Table 3, the association between marital quality and personal well-being was stronger for cross-sectional designs and for studies using control variables.

Discussion

The association between marital quality and personal well-being has long been of interest to scholars in the fields of family studies and family psychology. Although previous meta-analytic reviews suggest that the association between marital quality and depression/depressive symptoms is moderate in strength, the purpose of this meta-analysis was to expand and build on previous work and provide a comprehensive examination of the link between marital quality and personal well-being, including the potential moderators of this association and positive dimensions of personal well-being. The results, drawn from 93 studies and comprising 159 effect sizes after aggregation, confirm that marital quality is related positively to personal well-being, both concurrently and over time, such that higher levels of marital quality are associated with more optimal levels of personal well-being (i.e., greater self-esteem or lesser levels of depressive symptoms). The composite weighted mean effect size was $r = .24$, an effect that is smaller than that found for the association between marital quality and depressive

symptoms by Whisman (2001; $r = -.37$ and $-.42$ for husbands and wives, respectively), based on considerably more studies, and inclusive of both cross-sectional and longitudinal studies. Several moderating effects for sample, study, and design characteristics also were significant, including participants' length of marriage; the valence and source of, as well as the number of items in, the measure of personal well-being; the use of control variables; the year of data collection; the study design; and, in longitudinal studies, the conceptualization of the dependent variable. Unlike previous meta-analytic research, however, we found no significant difference in the strength of the association between marital quality and personal well-being for husbands and wives.

Theoretical Considerations

Previous meta-analytic work was limited to cross-sectional studies and thus unable to provide evidence in support of causal theoretical models of the association between marital quality and spouses' personal well-being (Whisman, 2001). The results of this study, however, included longitudinal research and supported the marital discord model of depression: the strength of the association between marital quality and personal well-being was significantly stronger for those longitudinal studies in which personal well-being was the dependent variable than for those in which marital quality was treated as the dependent variable. Further, this meta-analytic review extended the theoretical model by suggesting that marital quality also is related to positive components of personal well-being, such as self-esteem and life satisfaction.

Although the results of this meta-analysis support and extend the marital discord model of depression, we are unable to draw conclusions about the specific processes in

marriage that are related to personal well-being. Further, many of the longitudinal studies included in this meta-analysis consisted of only two waves of data, and it is possible that with longitudinal designs spanning more than two waves, the nuances in how marital quality is linked with personal well-being could be revealed. It is possible that two-wave longitudinal designs are capturing only a snapshot of a much longer chain of events and multiple-wave designs might reveal a cyclical pattern in the relationship between marital quality and personal well-being. Researchers using the stress generation model of depression suggest such a process, in that increases in depressive symptoms predict declines in the quality of intimate relationships such as marriage, which might then lead to further increases in depressive symptoms (Davila, Bradbury, Cohan, & Tochluk, 1997). By taking advantage of recent methodological advances in the study of change within marriage (e.g., Bryk & Raudenbush, 1992) future research can refine the literature supporting or refuting theoretical models of the relationship between marital quality and personal well-being. The results of present meta-analysis, based on a relatively large number of longitudinal effects, offer strong support for the causal link between marital quality and well-being.

Moderators of the Association between Marital Quality and Personal Well-being

Of the sample characteristics examined, only the length of participants' marriage emerged as a significant moderator of the association between marital quality and personal well-being. As hypothesized, the association between marital quality and personal well-being was weaker in those studies sampling participants who had been married 3 years or less than it was for those studies sampling couples married 4-18 years

or for those in which participants' length of marriage varied. This finding suggests that the strength of the association between marital quality and personal well-being differs at various points in the course of marriage. One possible explanation for this finding is that marriages 4-18 years in duration might be experiencing greater levels of the negative processes by which marital quality is thought to influence personal well-being. Samples of newlyweds might not be displaying or experiencing these eroding mechanisms yet, and samples including participants in longer marriages might be influenced by a self-selection bias in that longer term marriages have made it past the most common peaks for divorce.

Although we found evidence to support our hypothesis for marital duration, we were unable to support our hypotheses that parental status, the clinical status of the sample, and gender would moderate the association between marital quality and personal well-being. Further, none of the sample characteristics included in our exploratory analyses (i.e., race, SES, and number of marriages) served as a significant moderator. Thus, the link between marital quality and personal well-being appears to persist across variation in race, SES, number of marriages, parental status, and the clinical status of the sample. Our finding that gender did not emerge as a significant moderator is contrary to previous meta-analytic findings (i.e., Whisman, 2001). Results of the research literature, however, are mixed (Beach et al., 2003) and combined with the results of this meta-analysis suggest that the strength of the association between marital quality and personal well-being does not differ consistently for husbands and wives. We cannot, however, rule out the likelihood that the *processes* through which marital quality is associated with

personal well-being differ for men and women. Feminist researchers have long argued that men and women experience marriage differently (Bernard, 1972) and that within marriage gender is created and sustained through everyday interaction (Thompson & Walker, 1989). It is premature to assume that because the strength of the association between marital quality and personal well-being is equivalent for men and women that the relational processes underlying this link also are similar for wives and husbands. Thus, the literature in this field would benefit from research further exploring the mechanisms that link marital quality to personal well-being and how they might be different or similar between husbands and wives.

We found partial support for our hypotheses regarding the moderating role of measurement characteristics. Specifically, we found that the source of personal well-being measurement is a unique moderator of the association between marital quality and personal well-being in that the association was stronger for studies in which the source of the well-being measure was coded as ‘other’ (e.g., latent variables, measures designed specifically for the study) versus being a single-item measure. This finding suggests that unstandardized or latent measures of personal well-being might be more likely than single-item measures to assess some of the specific dimensions of personal well-being that are most affected by marital quality. It also is possible that the use of unstandardized or latent measures inflates the association between marital and personal well-being. It is important to note that the association between marital quality and personal well-being did not differ in strength between standardized, widely used measures of personal well-being (i.e., the BDI, CESD, SCL-90-R) and single-item or ‘other’ measures. This finding

suggests that when studying the association between marital quality and personal well-being, these standardized measures serve as equally adequate indicators of spouses' personal well-being.

None of the characteristics related to the measurement of marital quality emerged as a significant moderator. This lack of findings might stem from the relatively limited variance in some of the measurement characteristics coded. Few studies included in this meta-analysis utilized single-item measures, observational reports, or measurement of negative components of marital quality. Despite evidence suggesting that spouses' emotional and cognitive evaluations of the marriage might differ (see Huston, 2000 and Johnson, White, Edwards, & Booth, 1986 for comments on the use of multidimensional constructs), we found no evidence that the strength of the association between marital quality and personal well-being differed based on whether the marital quality component was affective, cognitive, or some combination of affective, cognitive, and behavioral components. Thus, the association between marital quality and personal well-being appears robust to the particular scale used to measure marital quality and the component it is evaluating.

Several characteristics of study design influenced the strength of the association between marital quality and personal well-being. Although previous meta-analytic work has examined only cross-sectional studies (Whisman, 2001), our multivariate analyses suggested that the association between marital quality and personal well-being was moderated by whether the study was cross-sectional or longitudinal. The finding that the association between marital quality and personal well-being was weaker for longitudinal

studies suggests that longitudinal studies provide more conservative estimates and emphasizes the need to exercise caution when interpreting the findings of cross-sectional studies. These weaker estimates likely influenced the overall weighted mean effect size in the present meta-analysis and might be why the strength of the association in the present study was weaker than that found in previous meta-analytic work.

Multivariate analyses in the present study also suggest that the use of control variables serves as a unique moderator of the association between marital quality and personal well-being. Given that the use of partialized statistics produced weaker associations between marital quality and personal well-being, we suggest that future research pay increasing attention to the environmental and contextual variables that might influence the association between marital quality and personal well-being (Huston, 2000; Bradbury & Karney, 2004). In addition, our measure of methodological quality was inversely related to the strength of the association between marital quality and personal well-being, such that those studies with large or random samples, controls for extraneous variance, and a longitudinal design were likely to yield smaller effects than less methodologically rigorous studies. This finding suggests that future research address recurring methodological limitations, including the recruitment of small or nonrandom samples, the failure to control for potentially confounding variables in relationships as complex as marriage and family, and the use of cross-sectional rather than longitudinal designs.

Directions for Future Research

The meta-analysis described here found that spouses' own marital quality is associated with their own personal well-being and the longitudinal link between marital quality and personal well-being is stronger when personal well-being is treated as the dependent variable. This meta-analysis also highlights the need for additional longitudinal research on the association between marital quality and personal well-being, for both theoretical and empirical reasons. For example, it remains unknown how changes in marital quality might be linked with changes in personal well-being or whether the two variables change in the same manner, although the few studies exploring this association suggest that marital quality might follow a more linear decline whereas personal well-being waxes and wanes around an individual's level of emotionality such as a given level of negative affectivity (Davila et al., 2003; Kurdek, 1998). In addition, recent research suggests that spouses might experience cross-over effects whereby their spouse's marital quality influences their own personal well-being (Beach et al., 2003). The number of studies assessing spousal cross-over effects was not large enough to warrant a separate meta-analysis, but as this literature develops, meta-analytic work has the potential to reveal more about the dyadic nature of this link (Beach et al.). Thus, it is important for future studies to sample both members of the marital dyad. Further, as the results from this meta-analysis suggest, sampling couples homogenous in marital duration is necessary as it appears that marital duration moderates the association between marital quality and personal well-being.

Although the present study offers an emerging portrait of the association between marital quality and personal well-being both cross-sectionally and over time, it also highlights what remains unknown about the relationship between these two variables. The evidence accumulated in this meta-analysis suggests that the higher one's level of marital quality, the better one's personal well-being. We need a more thorough understanding, however, of how marital quality contributes to spouses' personal well-being and how the association between these two variables might change over the course of a marriage. We believe that the literature on the association between marital quality and personal well-being will be strengthened by increased attention to the longitudinal course of the association as well as potential methodological limitations in study design, sampling, and analysis. Efforts towards increasing the depth of our knowledge in this area will result in a body of research that better unveils the complexities of marital relationships and the ways in which they are associated with spouses' well-being.

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Table 1

Coded Characteristics of Effect Coefficients (N = 159).

Study Characteristics	<i>n</i>	%		<i>n</i>	%
Study design			Marital quality domain		
Cross sectional	111	70	Global assessment	138	93
Longitudinal predicting well-being	30	19	Domain-specific assessment	10	7
Longitudinal predicting marital quality	18	11	Marital quality source		
Gender			DAS	24	17
Men only	56	35	MAT	22	15
Women only	80	50	MCLI	2	1
Both men and women	23	14	Kansas marital satisfaction scale	5	4
SES			QMI	8	6
Lower/middle class	117	74	One item indicator	12	8
Middle class only	10	6	Other	70	50
Upper middle/professional	2	1	Marital quality method		
Nationally representative	30	19	Self report	151	99
Ethnicity			Behavioral report – other	1	1
All or predominantly White	92	58	Well-being		
All or predominantly Black	2	1	Positive component (e.g., self-esteem)	25	16
Even mix of White and Black	2	1	Negative component (e.g., depression)	129	84
Nationally representative	33	21	Well-being measurement level		
Unknown	30	19	One-item indicator	16	10
Parental status			Multi-item indicator	143	90
All parents	40	25	Well-being domain		
No parents	7	4	Global assessment	157	99
Parents and nonparents	80	50	Domain-specific assessment	2	1
Unknown	32	20	Well-being source		

Marital duration			BDI	34	22
3 years or less	32	20	CES-D (full form)	16	11
4 – 18 years	19	12	SCL-90-R	19	12
More than 18 years	17	11	CES-D short form	7	5
Heterogeneous group	71	45	Trait Anxiety Scale	2	1
Unknown	20	13	HSCL	5	3
Number of marriages			Rosenberg self-esteem scale	9	6
Couples in first marriage	18	11	One item indicator	13	9
Group is mixed	61	38	Other	48	31
Unknown	80	50	Well-being method		
Clinical sample			Self-report	152	96
No	136	86	Behavioral report- other	2	1
Yes	16	10	Other (i.e., latent variables)	4	3
Clinical and community	7	4	Dependent variable: cross sectional studies		
Marital quality			Well-being	58	52
Positive component (e.g., happiness)	112	87	Marital quality	53	48
Negative component (e.g., conflict)	17	13	Partialized statistic		
Marital quality measurement level			Yes	111	70
One-item indicator	12	8	No	48	30
Multi-item indicator	137	92	Study Year		
Marital quality component			1980-1989	78	49
Affective component	14	11	1990-2005	81	51
Cognitive component	37	28			
Behavioral component	4	3			
Aspects of some or all three	76	58			

Note. Percentages might not add to 100 due to rounding error.

Table 2

Summary of Multiple Regression Analysis for Measurement Characteristics

Variable	B	SE B	β
Well-being dimension	.07	.07	.09
Well-being item level	.09	.09	.10
Well-being source	.12	.05	.22*

Note. $N = 155$.

* $p < .05$.

Table 3

Summary of Multiple Regression Analysis for Design Characteristics

Variable	B	SE B	β
Study year	.06	.04	.12
Study design	.14	.04	.25**
Use of control variables	.15	.04	.26**

Note. $N = 159$.

* $p < .05$, ** $p < .01$.