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Pepperdine University
Graduate School of Education and Psychology

SOCIAL SUPPORT COMMUNICATION BEHAVIOR,
ANXIETY SYMPTOMATOLOGY, AND MARITAL SATISFACTION AMONG
DISTRESSED COUPLES

A clinical dissertation submitted in partial satisfaction
of the requirement for the degree of
Doctor of Psychology

by

Xiao Shirley Chen

July, 2017

Kathleen Eldridge, Ph.D. – Dissertation Chairperson

This clinical dissertation, written by

Xiao Shirley Chen

under the guidance of a Faculty Committee and approved by its members, has been submitted to and accepted by the Graduate Faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF PSYCHOLOGY

Doctoral Committee:

Kathleen Eldridge, Ph.D., Chairperson

Dennis Lowe, Ph. D.

Katherine J. W. Baucom, Ph.D.

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To my friend and colleague, Kaddy Revolorio, thank you for years of laughter, motivation, and, at times, some much needed distraction. I feel so lucky to have been able to complete this journey with you and to work on this project together. I hope that we have many more years of fun and collaboration in both our professional and personal lives.

To my parents, Cici Yang and Genmeng Chen, and my future in-laws, Ariella and Randy Rutschman, thank you for always believing in me and for teaching me the value of hard work.

Finally, to my fiancé, Avi Rutschman, thank you for providing me with the love and encouragement that first sparked my interest in couple therapy and highlighted the importance of support in intimate relationships. This dissertation is for you.

VITA

XIAORUI SHIRLEY CHEN, M.A.**EDUCATION**

Pepperdine University, Los Angeles, CA **August 2017 (anticipated)**
 Graduate School of Education and Psychology
 Clinical Psychology
 Dissertation: *Social Support Communication Behavior, Anxiety Symptomatology, and Marital Satisfaction Among Distressed Couples*
 Degree: Psy.D.

Pepperdine University, Malibu, CA **April 2013**
 Graduate School of Education and Psychology
 Clinical Psychology with an emphasis in Marriage and Family Therapy
 Degree: M.A.

University of California, Los Angeles, CA **December 2009**
 Major: Psychology
 Minor: Classical Civilization
 Degree: B.A.
 Dean's List: 2008-2009

CLINICAL EXPERIENCE

Loma Linda VA Medical Center, Loma Linda, California
September 2016 – Present

Predoctoral Psychology Intern

- Dual Diagnosis/Substance Treatment and Recovery (STAR)
- Supervisor: Scott Wenger, Psy.D.
 - Participate as member of multidisciplinary treatment team in the outpatient Integrated Dual Diagnosis Treatment Program (IDDTP) and intensive outpatient STAR Program for veterans with substance use disorders and severe persisting co-morbid mental disorders, including court-mandated patients
 - Facilitate assessment and evaluation group to assess veterans' readiness for treatment utilizing motivational interviewing (MI) and psychoeducation from Dialectical Behavior Therapy (DBT)
 - Facilitate process-oriented groups based on stages of change model
 - Participate in additional groups in the program, including skills-based groups utilizing material from Cognitive Behavioral Therapy (CBT) for depression and anxiety, Relapse Prevention, and Seeking Safety, spirituality group, inpatient process group, intake group, process-oriented groups across phases of treatment, and codependency and family therapy groups for significant others of veterans participating in the program
 - Provide individual Motivational Enhancement Therapy (MET) to treat substance abuse

- PTSD Clinical Team (PCT)
- Supervisor: Nathaniel Hawkins, Ph.D.
 - Participate in outpatient trauma treatment program for veterans with symptoms and impairment related to traumatic life experiences and other co-morbid conditions
 - Facilitate PCT intake group to orient male and female veterans in outpatient and women's clinics, provide psychoeducation, and plan treatment
 - Complete ongoing collaborative recovery based treatment planning with patients
 - Conduct comprehensive evaluations to determine patients' appropriateness and readiness for trauma-focused evidence-based psychotherapy
 - Provide individual evidence-based trauma focused psychotherapy, including Cognitive Processing Therapy (CPT) and PTSD Coping Skills
 - Facilitate psychoeducational classes and groups, including ACT for PTSD, CPT, PTSD Coping Skills, and Family Education groups

- Behavioral Health Interdisciplinary Program – Evidence-Based Services (BHIP-EBS)
- Supervisors: Anna M. Medina, Ph.D., Scott Grover, Ph.D.
 - Participate as effective member of interdisciplinary treatment team in outpatient mental health clinic, present intakes and cases, and provide feedback to team
 - Conduct BHIP intakes to provide biopsychosocial evaluation of patient, determine diagnoses, evaluate readiness and appropriateness for evidence based therapy, create treatment plan, consult with psychiatrist, and provide referrals to group and individual therapy
 - Complete ongoing care coordination (treatment planning) meetings with patients
 - Co-lead evidence-based psychotherapy groups including CBT for Insomnia (CBT-I), CBT for Anxiety (CBT-A), and DBT Skills for Bipolar Disorder
 - Provide individual evidence-based psychotherapy using multiple evidence based modalities, including CBT, CPT, and ACT
 - Participate on full DBT consultation team, co-lead DBT skills group, and provide individual DBT skills training to Veterans
 - Opportunities to co-lead Relationship Skills Group and to conduct Integrative Behavioral Couples Therapy and other general couple therapy

- General Intern Duties
 - Provide individual therapy to veterans using CPT and ACT in Evidence Based Practice Clinic
 - Provide long term individual therapy using interpersonal orientation in Long Term Therapy Clinic
 - Complete psychological assessments using MMPI-II-RF, PAI, MCMI, and Rorschach
 - Participate and present cases in weekly case conferences and attend seminars and grand rounds
 - Assist practicum students in navigating CPRS and VISTA
 - Participate on Training Committee, discuss training issues, and evaluate APPIC intern applications

VA Long Beach Healthcare System, Long Beach, California August 2015 – August 2016

General Neuropsychology Outpatient Clinic and Traumatic Brain Injury Clinic

Neuropsychology Clerk

Supervisors: Kimberly Baerresen, Ph.D., Duke Han, Ph.D., ABPP-CN, Vanessa Zizak, Ph.D.

- Conducted clinical interviews with veterans referred by providers in outpatient clinics and inpatient Spinal Cord Injury unit to gather information
- Determined appropriate assessment batteries and administered full and brief neuropsychological assessments to adult veterans
- Scored assessments, interpreted results, reviewed patient charts, and wrote integrative reports with relevant recommendations
- Conducted client-centered feedback sessions with veterans and their families
- Provided individual psychotherapy and cognitive rehabilitation to veterans with cognitive impairment, depression, and anxiety using CBT and CogSMART
- Co-led monthly traumatic brain injury psychoeducation class to facilitate veteran understanding of cognitive concerns after TBI and other possible contributing factors
- Wrote Standard Operating Procedure (SOP) and oriented trainees to VISTA and CPRS
- Participated in weekly neuropsychology seminar, journal club, and grand rounds

Pepperdine University, Los Angeles, California

September 2014 – August 2016

West Los Angeles Community Counseling Center

Psychology Trainee

Supervisors: Shelly Harrell, Ph.D., Bruce Rush, Psy.D.

- Provided culturally sensitive CBT to individual adult clients with diverse diagnoses (PTSD, anxiety, depression, v-codes) based on cognitive conceptualization in outpatient community clinic
- Conducted CBCT and IBCT informed therapy with couples
- Performed in depth intakes to gather relevant history and presenting problem information
- Diagnosed clients using DSM-5 criteria while considering diversity and cultural issues
- Created and implemented mutually developed treatment plans with clients
- Negotiated and collected fees based on sliding scale and abatement form

His Sheltering Arms Inc, Los Angeles, California

February 2015 – February 2016

Residential Long Term Substance Abuse Treatment Center

Psychology Trainee

Supervisor: Bruce Rush, Psy.D.

- Provided milieu therapy with low-income, high risk, trauma exposed women in residential trauma and substance abuse treatment program in South Los Angeles
- Established and co-facilitated DBT skills group with focus on substance use treatment
- Developed and implemented Parenting Skills group curriculum for mothers with children
- Completed intake interviews to facilitate treatment planning
- Administered integrative personality and cognitive assessments to clarify diagnostic criteria, inform treatment, and determine client strengths and weaknesses to ease transition out of program
- Scored and interpreted assessment results and wrote reports
- Relayed assessment feedback to clients in easily accessible manner

Harbor-UCLA Medical Center, Torrance, California **September 2014 – August 2015**

Adult CBT Clinic Trauma Triage Track

Psychology Extern

Supervisors: Lisa Benson, Ph.D., Lynn McFarr, Ph.D., Lauren Jackson, Psy.D.

- Provided individual counseling to low-income, culturally diverse adults with variety of diagnoses in outpatient mental health clinic using CPT, PE, CBT, and CBASP
- Co-led Seeking Safety group for men and DBT skills group
- Triageed clients into CBT groups based on clinical interview and psychiatric referral
- Participated in live supervision with triage function for trauma treatment
- Administered and scored measures including PDS, OQ-45, BDI-II and conducted clinical interviews using CAPS for psychodiagnostic clarification and treatment planning
- Participated in weekly mindfulness class to improve mindfulness skills and weekly CBT Advances class to hone CBT treatment and conceptualization
- Participated in Trauma Team case consultation and presentations and consulted with multidisciplinary team of psychiatrists, social workers, and other providers for case management and treatment planning

Pepperdine University, Irvine, California **September 2013 – July 2014**

Irvine Community Counseling Center

Psychology Trainee

Supervisor: Joan Rosenberg, Ph.D.

- Provided counseling to individual adult clients with various disorders (PTSD, depression, dysthymia, anxiety) in outpatient community clinic using CBT-informed treatment
- Consented clients to treatment and oriented to clinic policy
- Performed in depth intake interviews to inform diagnoses and treatment planning
- Diagnosed clients according to DSM-5 criteria and created treatment plans
- Negotiated and collected fees based on current client income and financial situation
- Participated in weekly case conference for treatment consultation

Valley Trauma Center, Northridge, California **January 2012 – July 2013**

Family Preservation Program

In-Home Outreach Counselor

Supervisor: Clovis Emblen, L.M.F.T.

- Provided in-home counseling to low-income, at-risk families with open Department of Children and Family Services (DCFS) cases
- Provided short-term on-site counseling to individual adult, adolescent, and child members of families with various presentations using behavioral, cognitive-behavioral, and trauma-focused CBT informed treatment
- Worked closely with DCFS clinical social workers to coordinate care
- Assessed for child safety and made child abuse reports when necessary
- Facilitated multidisciplinary case planning committee meetings with families and treatment team
- Advocated for clients during Team Decision Making meetings with DCFS
- Performed intake interviews to collect histories and inform treatment

RESEARCH EXPERIENCE

VA Long Beach Healthcare System, Long Beach, California August 2015 – August 2016

VALB Neuropsychology Research Lab

Psychology Extern

Supervisors: Kimberly Baerresen, Ph.D., Duke Han, Ph.D., ABPP-CN, Vanessa Zizak, Ph.D.

- Scored previously administered veteran assessment batteries
- Entered and organized data in clinic data base and conduct data analyses
- Conducted extensive literature reviews
- Collaborated on research projects and formatted posters for presentations

His Sheltering Arms Inc, Los Angeles, California February 2015 – February 2016

Residential Long Term Treatment Center

Psychology Trainee

Supervisor: Bruce Rush, Psy.D.

- Established and co-managed research project and database for program evaluation and treatment outcomes assessment
- Administered assessment measures including ASEBA, BDI-II, BAI, OQ-45, PSI-4, DERS, and IIP

Harbor-UCLA Medical Center, Torrance, California September 2014 – August 2015

Adult CBT Clinic Trauma Triage Track

Psychology Extern

Supervisors: Lisa Benson, Ph.D., Lynn McFarr, Ph.D., Lauren Jackson, Psy.D.

- Completed research projects with emphasis on BPD and comorbid PTSD
- Wrote requests for addendums to approved IRB protocols
- Analyzed data using SPSS statistical software
- Administered pre and post assessment packets to patients for program evaluation and treatment outcomes
- Scored tapes of DMH CBT roll-out trainers in CBT adherence

Harbor-UCLA Medical Center, Torrance, California May 2010 – November 2012

Women's Behavioral Health/Psychiatry - UCLA Couple CARE for Parents Project

Project Manager

Supervisors: Katherine J.W. Baucom, Ph.D., Andrew Christensen, Ph.D., Astrid Reina, Ph.D.

- Co-wrote study manual, supervised research assistants, trained therapists and research assistants on study protocol and treatment
- Co-led research meetings with principle investigators and research assistants
- Recruited participants in low-income community obstetrics clinic, screened potential participants, consented participants and oriented them to study procedures
- Performed in-home assessments of relationship satisfaction (CSI-32, DAS-32) individual distress (DASS-21, PDQ-R), and current problems (PAQ, PDT)
- Created and maintained participant database to organize data for easy analyses
- Coordinated Spanish translation and back-translation of questionnaires to adapt measure to diverse participant population

Harbor-UCLA Medical Center, Torrance, California **January 2010 – September 2011**

Effectiveness of DBT in an Adult Outpatient Clinic

Research Assistant

Supervisors: Katherine J.W. Baucom, Ph.D., Lynn McFarr, Ph.D.

- Contacted individuals with Borderline Personality Disorder for interview scheduling and reminders, interviewed participants on history of self-injurious and suicidal behavior, interpersonal relationships, employment, and satisfaction with life
- Developed interview based on Mini-International Neuropsychiatric Interview (MINI)
- Performed assessment of depression (BDI-II), anxiety (BAI), relationship adjustment (DAS-7), borderline symptoms (BSL-23), and social support (SSQ6)
- Tracked therapists' weekly reports on client treatment interfering behavior, e-mailed reminders to therapists to complete questionnaires, rewarded therapists for completing questionnaires using principles of operant conditioning, and created monthly graphs of therapy interfering behavior for therapists to track changes

University of California, Los Angeles**June 2009 – December 2009**

UCLA Couples Lab

Research Assistant

Supervisors: Katherine J.W. Baucom, Ph.D., Andrew Christensen, Ph.D.

- Trained research assistants in audio splitting and video labeling of couple interactions in efficacy study of couple therapies (IBCT and TBCT)
- Split audio of husband and wife in couple interactions, matched videos to transcripts and labeled them, counted blinks in couple interactions, and split transcripts of couple therapy sessions and couple interactions

University of California, Los Angeles**January 2009 – July 2009**

Psychology of Social Justice Lab - Center for Policing Equity

Research Assistant

Supervisors: Mathew C. Jackson, Ph.D., Philip A. Goff, Ph.D.

- Entered data from Denver Police Department regarding conclusions to call responses such as uses of force and arrests to further understand racial bias and discrimination in police forces
- Reorganized data in excel spreadsheets and calculated data in spreadsheets
- Helped plan future participant recruitment strategies for studies of social inequality

TEACHING EXPERIENCE**Pepperdine University, Los Angeles, California****January 2015 – June 2015**

PSY714 - Advanced Clinical Psychopathology

PSY715 - Behavioral Foundations in Clinical Psychology: Assessment and Intervention

Teaching Assistant

Supervisor: Stephanie Woo, Ph.D

- Proctored exams with doctoral psychology students
- Graded exams on behavioral principles and vignette diagnosing and treatment planning
- Assisted with student intake interviews for intake assignments

Pepperdine University, Malibu, California**September 2014 – December 2014**

PSY600 - Psychopathology

Teaching Assistant

Supervisor: Stephanie Woo, Ph.D

- Graded exams of masters level psychology students on intake interviewing, DSM-5 diagnostic criteria, and treatment planning using evidence based practices

Pepperdine University, Malibu, California**January 2013 – June 2013**

PSY600 - Psychopathology

PSY639 - Couple and Family Therapy I

Teaching Assistant

Supervisor: Dennis Lowe, Ph.D.

- Assisted with reviewing masters level psychology students' intake interview papers
- Graded exams on current evidence based couple and family therapies
- Met with student groups to clarify assignments and assist in completion
- Updated reading materials to DSM-5 criteria

PUBLICATIONS

Baucom, K.J.W., **Chen, X.S.**, Perry, N.S., Revolorio, K.Y., Reina, A., & Christensen, A. (accepted manuscript). Recruitment and retention of low-SES ethnic minority couples in intervention research at the transition to parenthood. *Family Process*.

Leo, K.B.S., **Chen, X.S.**, Reina, A., Christensen, A., & Baucom, K.J.W. (in review). Individual distress and observed communication in low-income couples transitioning to parenthood. *Couple and Family Psychology: Research and Practice*.

PRESENTATIONS

Baerresen, K.M., Rostami, R., Hemmy-Asamsama, O., Broffman, J.I., **Chen, X.S.**, Pyo, D.S., Souza, M.A., Miller, J.M., Han, S.D., & Zizak, V. (2016, February), *Screening for cognitive decline in a veteran population with the Montreal Cognitive Assessment (MoCA) and the Benson Figure*. Poster session presented at the International Neuropsychological Society 44th Annual Meeting, Boston, Massachusetts.

Revolorio, K.Y., **Chen, X.S.**, Eldridge, K., & Christensen, A. (2015, November), *Social support communication behavior as a moderator between mental health and marital satisfaction in a randomized clinical trial of couple therapy*. Poster session presented at the 49th Association for Behavioral and Cognitive Therapies Convention, Chicago, Illinois.

Chen, X.S., Revolorio, K., Owens, E., McFarr, L. (2015, November), *Differences in interpersonal problems amongst individuals with BPD and comorbid BPD and evidence of PTSD*. Poster session presented at the 20th Annual International Society for the Improvement and Teaching of Dialectical Behavior Therapy (ISITDBT) Conference, Chicago, Illinois.

Owens, E., **Chen, X.S.**, Blanchette, L., Jackson, L., & McFarr, L. (2015, November), *Differences in use of exposure skills in DBT with individuals with BPD and comorbid BPD and evidence of PTSD symptoms*. Poster session presented at the 20th Annual International Society for the Improvement and Teaching of Dialectical Behavior Therapy (ISITDBT) Conference, Chicago, Illinois.

Chen, X.S., Owens, E., Blanchette, L., Jackson, L., & McFarr, L. (2015, March), *Identification of exposure-based DBT skills in individuals with BPD vs. BPD+PTSD*. Poster session presented at the 3rd Harbor-UCLA Scientific Sessions on Mental Health, Los Angeles, California.

Leo, K., **Chen, X.S.**, Reina, A., Christensen, A., & Baucom, K.J.W. (2014, November), *Observed communication, relationship satisfaction and individual distress in low-SES couples transitioning to parenthood*. Poster session presented at the Couples' Research and Therapy Special Interest Group Meeting at the 48th Association for Behavioral and Cognitive Therapies Convention, Philadelphia, Pennsylvania.

Revolorio, K.Y., **Chen, X.S.**, Eldridge, K., & Christensen, A. (2014, November), *Associations between mental health and relationship satisfaction in a clinical trial of couple therapy*. Poster session presented at the 48th Association for Behavioral and Cognitive Therapies Convention, Philadelphia, Pennsylvania.

Chen, X.S., Revolorio, K.Y., Baucom, K.J.W., Reina-Patton, A., & Christensen, A. (2012, August), *Recruitment and retention of low-income couples: Spanish vs. English-speaking participants*. Poster session presented at the 120th American Psychological Association Convention, Orlando, Florida.

Revolorio, K.Y., **Chen, X.S.**, Baucom, K.J.W., Reina-Patton, A., & Christensen, A. (2012, May), *Recruitment and enrollment of low-income couples for a distress prevention study during the transition to parenthood: The importance of timing*. Poster session presented at the 24th Association for Psychological Science Convention, Chicago, Illinois.

PROFESSIONAL ASSOCIATIONS

Association for Behavioral and Cognitive Therapies Trauma and PTSD SIG, member, 2015-2017

Association for Behavioral and Cognitive Therapies Couples SIG, member, 2014-2017

Association for Behavioral and Cognitive Therapies, student affiliate, 2014-2017

American Psychological Association, student affiliate, 2013-2017

Association for Psychological Science, student affiliate, 2012-2014

Research and Practice Team, Pepperdine University, member, 2011-2013

California Association of Marriage and Family Therapists, student affiliate, 2012-2013

ABSTRACT

The purpose of this study is to contribute to the knowledge base on anxiety symptomatology, marital satisfaction, and social support by examining the unique relationships among these 3 variables, as well as the role of social support communication as a moderator of the existing relationship between anxiety symptomatology and marital satisfaction, to inform clinical endeavors with couples who are navigating symptoms of anxiety. Gender differences between husbands and wives in these associations were also examined. Using previously collected pre-treatment data from a sub-sample of 96 chronically and seriously distressed heterosexual couples seeking couple therapy, simultaneous linear regressions were run between partners' anxiety symptomatology, as measured by the anxiety subscale of the COMPASS, their own marital satisfaction, as measured by the DAS, and their own negative and positive social support communication, coded from observed social support interactions using the SSIRS. Partners' social support behavior as a moderator of their anxiety symptomatology and marital satisfaction was examined using HLM. Partners' marital satisfaction was found to be significantly negatively related to their negative social support behavior and significantly positively related to their positive social support behavior. However, contrary to predictions, marital satisfaction and anxiety were not significantly related, anxiety symptomatology and social support communication (either negative or positive) were not significantly related, and there was no support for social support communication (either negative or positive) moderating the effect of anxiety symptomatology on marital satisfaction. No significant gender differences were found. Limitations of the current study and clinical implications are discussed.

Introduction

There is a sizeable body of literature linking couple relationship functioning and individual mental health (e.g. Atkins et al., 2005; Baucom et al., 2007; Baucom, Whisman, & Paprocki, 2012; South, Krueger, & Iacono, 2011; Whisman, 1999, 2007; Whisman & Uebelacker, 2006). In a population-based survey of married individuals in the United States, Whisman (2007) found that marital distress was associated with anxiety, mood, and substance disorders, and individual level of psychological distress has been shown to predict marital satisfaction in both partners (Whisman, Uebelacker, & Weinstock, 2004). In systems theory, the association between mental disorders and family relationships is bidirectional: psychopathology negatively influences an individual's relationships with his or her close relatives, and the relatives' attitude and behaviors toward the individual significantly impacts the levels of his or her symptoms (Pankiewicz et al., 2012).

Anxiety and Relationship Satisfaction

Past research, though sparse, has shown strong associations between an anxiety disorder diagnosis for one partner and ratings of poor relationship adjustment in both partners among heterosexual couples (e.g., Hickey et al., 2005; McLeod, 1994). According to the literature, individuals diagnosed with anxiety disorders have difficulties in their interpersonal relationships and may engage in behaviors that decrease opportunities for support and intimacy from others (Zaider, Heimberg, & Iida, 2010). Some studies have demonstrated that anxious partners are more dissatisfied with their relationship than undiagnosed partners (Hickey et al., 2005; Pankiewicz, Majokowicz, & Krykowski, 2012), while others observed that both anxious and undiagnosed partners rated marriage quality equally (Whisman, Uebelacker, & Weinstock, 2004; Zaider et al., 2010). Romantic relationships can also play a role in an anxious individual's

response to treatment. In a study of cognitive behavioral therapy (CBT) for generalized anxiety disorder (GAD), the presence of marital distress at the beginning of treatment predicted higher dropout rates, more negative response to therapy, and lower decrease of anxiety symptoms (Durham, Allan, & Hackett, 1997).

Gender differences have been noted among couples with anxious partners. Pankiewicz et al. (2012) concluded that couples' relationship quality was more correlated with mental health when females were affected with anxiety disorders than when males were. After controlling for age, education, and comorbid groupings of disorders, Whisman (1999) found that marital dissatisfaction was uniquely related to anxiety disorders for women. In this study, no unique associations for groupings of disorders, including anxiety, were observed for men (Whisman, 1999). However, Dehle and Weiss (2002) found that husbands' anxiety was predictive of their own and their wives' reports of marital adjustments while wives' anxiety was not predictive of either their own or their husbands' reports of marital adjustment. This suggests that the gender of the partner with anxiety symptoms plays a role in relationship functioning, though this role is unclear and would benefit from further investigation.

Social Support and Couple Satisfaction

Social support behavior, the "specific communicative behavior enacted by one party with the intent of benefiting or helping another" (Burlison & MacGeorge, 2002, p. 386), is also associated with marital satisfaction (e.g. Bradbury, Fincham, & Beach, 2000; Pasch & Bradbury, 1998; Sullivan, Pasch, Johnson, & Bradbury, 2010). Partners that report more social support tend to be more satisfied with their marriages than partners that do not report as much support (Katz, Beach, & Anderson, 1996), and strong support skills may increase feelings of intimacy and goodwill in a couple, allowing partners to confront relationship difficulties with fewer displays

of anger and contempt (Sullivan et al., 2010). Social support behavior can also improve stability in relationships by increasing the level of trust and expectation that one's partner will respond to future needs (Cutrona, Russell, & Gardner, 2005).

However, distressed couples have been found to communicate differently from non-distressed couples, displaying decreased levels of positivity, increased levels of negativity, and less effective communication in their problem solving and social support interactions (Gottman, Markman, & Notarius, 1977; Lavner, Karney, & Bradbury, 2016). Couples who are distressed often engage in negative reciprocity during social support seeking interactions, which can further lower relationship satisfaction (Pasch, Bradbury, & Davila, 1997). Lavner and Bradbury (2012) found that newlywed couples who divorced by the 10-year follow up displayed more negative support (e.g., criticize or blame spouse, minimize or maximize their problem) during social support interactions than couples who did not divorce, though the two groups did not differ in their level of positive social support (e.g., statements that reassure, console, or provide encouragement to spouse; convey that they are loved and cared for, specific suggestions or helpful advice). However, only couples who were stably satisfied with their marriages over four years were included, so support behavior may differ for less satisfied couples or couples who have been married longer. In a study of distressed couples seeking therapy, Sevier et al. (2008) noted that over treatment, declines in marital satisfaction were associated with increased withdrawal during personal problem discussions and increased negativity during relationship problem discussions, while increases in marital satisfaction were associated with increases in positivity and problem solving.

The literature on social support behavior highlights a gender difference between husbands and wives in their support provision, describing wives as being more effective support

providers than their husbands (e.g. Cutrona, 1996), though observational studies suggest that there are no differences in the amount or type of support that husbands and wives generally provide to their spouses (Neff & Karney, 2005; Pasch et al., 1997; Verhofstadt, Buysse, & Ickes, 2007). However, there have been gender differences found in the relationship between social support behavior and marital satisfaction, where soliciting support predicted marital satisfaction for wives, and providing social support predicted marital satisfaction for husbands (Lawrence et al., 2008). Negative affectivity, the stable experience and expression of negative emotion, and stress may contribute to the gender difference and support interactions, as Pasch et al. (1997) found that wives were more negative than husbands when seeking support, especially when wives were high in negative affectivity, and husbands displayed less positive forms of support when their wife was high in negative affectivity. Neff and Karney (2005) found that husbands and wives differ in the timing of their support, where wives perceived their husbands displaying both support and negativity when wives' level of stress increased, while husbands perceived their wives providing better support on days that husbands were more stressed.

Similarly, gender differences have been noted in the relationship between marital satisfaction and the type of social support communication, such that wives' marital satisfaction is predicted by the perceived amount of received support whereas husbands' marital satisfaction is predicted by the perceived adequacy of the received support (Lawrence et al., 2008). Barry, Bunde, Brock, and Lawrence (2009) also found that wives' depressive symptoms were lower if they perceived more tangible support, and husband's depressive symptoms were lower to the extent that they perceived more esteem or emotional support. However, according to Neff and Karney (2005), self-report measures of support make it difficult to differentiate whether perceptions of support are based on actual support received or influenced by more stable aspects

of the person or the marriage. In a study that used both self-report and observational data, Verhofstadt et al. (2007) examined the “marital support gap” (p. 267) idea, which proposes that men are more likely to offer instrumental support and women are more likely to provide emotional support. When using the observational data, no gender differences were found in support provision. However, small gender differences were found when using the self-report data, where husbands rated their wives as providing more emotional and instrumental support than wives believed they received from their husbands, and husbands perceived their wives as responding in less negative ways than wives perceived with their husbands when their spouses solicited support (Verhofstadt et al., 2007).

Anxiety and Communication Behaviors

It is important to examine how anxiety symptomatology is associated with marital support communication, as research has shown that communication patterns of mentally distressed individuals differ from communication patterns of individuals without clinical mental health symptomatology. Stress has been found to lead to decreased marital communication by eliciting less positive interaction and more negative interaction and withdrawal (Randall & Bodenmann, 2009). Davila and Beck (2002) found that social anxiety symptoms were associated with interpersonal styles of avoidance of expressing strong emotion, desire to avoid conflict, actual avoidance of conflict, lack of assertion, and overreliance on others, after controlling for depressive symptoms. Similarly, Wenzel, Gaff-Dolezal, Macho, and Brendle (2005) coded socially anxious individuals as having social deficits, and observed that they engaged in more negative behaviors when discussing negative conversation topics, and engaged in less positive behaviors in all conversation topics that were used in this study. In another study of social anxiety, Cuming and Rapee (2010) found differences between men and women in lack of

disclosure, where women revealed less information about themselves than men in romantic relationships and close friendships.

Anxiety and Perceived Social Support

Marital support is especially important to study, as support from a romantic partner can impact how adults cope with stress and the challenges of daily life, and support from other social sources cannot compensate for a poor marital relationship (Coyne & DeLongis, 1986). Though the majority of the literature focuses on social support in the medical community (e.g. Rankin & Monahan, 1991; Stanton, 2007), some literature exists that connects social support to anxiety symptomatology. Hickey et al. (2005) found that couples with one anxious partner reported significantly lower social support than couples without mental health diagnoses. Barry et al. (2009) found that husbands' anxiety symptoms were lower to the extent that they perceived more esteem and emotional support, and husband and wife anxiety was higher when they perceived more tangible and physical support over time. Rapee, Peters, Carpenter, and Gaston (2015) found that perceived social support can protect against or decrease an individual's future social anxiety and may even facilitate the effects of individual anxiety treatment. Perceived intimate partner support is also significantly related to decreased PTSD symptoms in Veterans returning from Iraq (Balderrama-Durbin et al., 2013).

Research suggests that the perceived skillfulness (pertaining to timing, content, process, or reciprocation) of social support can benefit the distressed individual and the dyad, and when support is perceived to be provided unskillfully, it can be detrimental to the receiver's mental health (Rafaeli & Gleason, 2009). Brock and Lawrence (2014) studied risk factors for perceived support underprovision and overprovision and found that higher levels of husbands' stress during the transition into marriage were associated with greater levels of perceived overprovision for

both husbands and wives, and higher levels of wives' stress were associated with greater levels of perceived support underprovision. In a study of undergraduates with social anxiety and their partners, Porter and Chambless (2014) found that higher anxiety was associated with desiring, providing, and receiving less social support on self-report measures for women but not men. Women with social anxiety also reported less satisfaction with their romantic relationships and less self-disclosing to their partners. Intimacy was perceived as riskier, and romantic relationships were seen as less emotionally intimate for both women and men with higher social anxiety (Porter & Chambless, 2014)

Anxiety and Observed Social Support Communication Behavior

The studies summarized above were on perceived social support, which is the support that individuals themselves perceive, as opposed to observed social support communication behavior, which have been shown to be distinct constructs (Sarason et al., 1991). Limitations of studying only perceived social support as the means of understanding the role of social relationships in stress and coping have been found in Coyne and DeLongis' (1986) review of the literature. The authors suggest that an individual's perceptions of support are only one feature of his or her transactions with the environment, and therefore analyzing the context of these perceptions by studying observed support behavior in relation to marital stress may more fully illustrate these processes to inform treatment (Coyne & DeLongis, 1986). To address the limitations of using only perceived social support, a few studies have been conducted utilizing observed social support communication.

In Beck, Davila, Farrow, and Grant's (2006) study on observed support communication among couples with socially anxious female partners, undergraduate couples did not differ in communication of support based on level of social anxiety. However, the sample size in this

study was small ($n = 45$), and the communication topic was a five-minute-long discussion about planning a speech rather than about the relationship (Beck et al., 2006). In a study of stressed and unstressed individuals providing support to their stressed partner, men and women generally provided similar support while unstressed, but men provided lower-quality support when stressed in response to their partner's emotionally toned expressions of stress (e.g., verbalized feelings of stress, upset, or fear; Bodenmann et al., 2015). Women with increased job stress have also been found to increase their solicitations of support and are more likely to have increased offers of support from their husbands, though men's job stress was not associated with solicitations for support or more spouse offers of support (Wang & Repetti, 2014). Husbands with greater PTSD symptoms, but not wives, have additionally been found to provide less support (i.e., expressions of validation, understanding, and caring) to their partners during discussions of negative aspects of their relationship (Hanley, Leifker, Blandon, & Marshall, 2013).

Further research on the connection between marital social support communication behavior and anxiety symptomatology is necessary to fully understand how anxiety may relate to support solicitation and provision. This study aims to address this gap in research.

Moderators and Mediators of Anxiety and Couple Satisfaction

This study also aims to understand how social support communication moderates the relationship between anxiety and marital satisfaction among distressed therapy seeking couples. There is a paucity of research on moderators of anxiety and couple satisfaction, and social support communication as a moderator has yet to be examined. Porter and Chambless (2014) have found that perceived social support mediated the relationship between social anxiety and romantic relationship satisfaction in women but not men, though social support was self-reported rather than observed. Recent research with Australian military couples has found that low

positive observed problem solving communication by women partially mediated the relationship between men's trauma symptoms and women's low satisfaction, but not men's relationship satisfaction. Men's negative communication behaviors were associated with high male relationship satisfaction, and partially mediated the association between trauma symptoms and male satisfaction (Bakhurst, McGuire, & Halford, 2017).

However, Sullivan et al. (2010) found that the ways spouses respond to their partner's everyday disclosures and requests for support were more predictive of relationship quality and stability than problem solving. Sullivan et al. (2010) also found that social support behaviors are more stable than problem solving behaviors over the first year of marriage, and social support mediated the relationship between conflict in problem solving interactions and marital satisfaction. Couples who began marriage with poorer support skills were less happy and more likely to divorce over the first 10 years of marriage due, at least in part, to increases in negative behavior during conflicts over time (Sullivan et al., 2010). Additionally, after reviewing the literature, Bradbury and Karney (2004) found that social support moderates the relationship between problem solving behavior and marital satisfaction. This suggests that social support and problem solving behaviors are distinct constructs, and that social support is very important to a couple's relationship quality. It is also important to analyze if there are gender differences in these interactions because the findings in previous studies are inconsistent.

Need for Further Study

Previous literature has focused on the relationship between anxiety symptomatology and marital satisfaction as well as the relationship between social support communication and marital satisfaction, but there is a paucity of research on the relationship between anxiety symptomatology and marital social support communication. The interaction between these three

variables, as well as how social support communication may moderate the relationship between anxiety symptomatology and marital satisfaction has yet to be studied. Additionally, many previous studies have focused on perceived social support using self-report measures rather than social support behaviors and communication using observational methods. As mentioned above, using observational data can help obtain a better understanding of support interaction processes (Verhofstadt et al., 2007).

Atkins et al. (2005) found an association between the Mental Health Index of the COMPASS (a measure of individual psychopathology) and marital satisfaction in the current sample, but they did not look at specific anxiety disorder symptomatology. Therefore, this study will more closely examine these relationships for anxiety, and also see how social support behaviors may moderate the association between symptomatology and marital satisfaction.

Purpose of the Study

The purpose of this study is to contribute to the knowledge base on anxiety symptomatology, marriage, and social support by examining the unique relationships among all three variables to inform clinical endeavors with couples who are navigating symptoms of anxiety. The study focuses on pre-treatment data among treatment-seeking couples to understand these relationships prior to intervention. Social support communication rather than conflict or problem-solving communication was studied due to the lack of current literature on this topic. Anxiety symptoms were used to measure mental health distress, as previous studies using this data set have found that diagnoses as measured by the Structured Clinical Interview-I for DSM-IV (SCID-I) are not predictive of initial distress or change in marital satisfaction in the present sample (Atkins et al., 2005). The authors suggest that this may be due to the low percentage of participants that qualified for a current diagnosis, and this low number of diagnosable

participants did not allow them to look at the impact of specific disorder diagnoses (Atkins et al., 2005).

The proposed study aimed to examine the following research questions:

- Research Question 1: What is the relationship between marital satisfaction and anxiety symptomatology?
 - Hypothesis 1: Marital satisfaction and anxiety symptomatology will be significantly negatively related for husbands and wives.
- Research Question 2: What is the relationship between anxiety symptomatology and negative and positive social support communication?
 - Hypothesis 2: Anxiety symptomatology will be significantly negatively related to positive social support communication and significantly positively related to negative social support communication.
- Research Question 3: What is the relationship between marital satisfaction and negative and positive social support communication?
 - Hypothesis 3: Marital satisfaction will be significantly positively related to positive social support communication and significantly negatively related to negative social support communication.
- Research Question 4: Does negative and positive social support communication moderate the relationship between anxiety symptomatology and marital satisfaction?
 - Hypothesis 4: Negative and positive social support communication will moderate the relationship between anxiety symptomatology and marital satisfaction.

By testing these hypotheses, the relationships among marital satisfaction, anxiety symptomatology, and social support communication, as well as the role of social support

communication as a moderator of the existing relationship between anxiety symptomatology and marital satisfaction, will be better understood.

Methods

Participants

The study used previously collected pre-treatment data from a 5-year longitudinal study comparing the effectiveness of Integrative Behavioral Couple Therapy (IBCT) and Traditional Behavioral Couple Therapy (TBCT; Christensen et al., 2004). Participants included 134 chronically and seriously distressed heterosexual couples seeking couple therapy in Los Angeles (71 couples) and Seattle (63 couples). To be included in the study, couples had to be legally married and cohabiting, be seeking couple therapy, and meet criteria for serious and stable marital distress based on measures of marital satisfaction administered at three different time points prior to the intervention. Additionally, both partners had to be between the ages of 18 and 65, be fluent in English, and have a high school education or equivalent. Participants were given a diagnostic interview, and couples were excluded if either partner met full criteria for diagnoses at that time that might directly interfere with treatment, including DSM-IV Axis I disorders of substance abuse or dependence, bipolar disorder, or schizophrenia, or DSM-IV Axis II disorders of borderline, schizotypal, or antisocial personality disorder. Couples with abusive men were excluded from the study based on wife reports of violence. Neither partner could be currently in psychotherapy to avoid confounding therapy results with other treatments. Partners could be taking psychotropic medication if they had been on the medication for at least 12 weeks, their dose was stable for at least 6 weeks before the study, and their physician did not expect any change in their medication or dosage.

The current study included a sub-sample of 96 couples who completed all measures of interest. Ages of participants in the current sample ranged from 24 to 72 years old, with a mean age for husbands of 42.90 years ($SD = 8.74$) and a mean age for wives of 41.36 years ($SD = 8.44$). Couples were together a mean of 10.81 years ($SD = 7.75$) and married a mean of 9.63 years ($SD = 7.84$). They had an average of 1.14 children ($SD = 1.03$). The mean level of education for husbands was 17.22 years ($SD = 3.22$) and 17.20 years ($SD = 3.04$) for wives, and they earned a mean annual income of \$57,000 for the husbands and \$43,000 for the wives. The sub-sample was largely Caucasian (husbands: 75.0%, wives: 69.8%). Other ethnicities in this study include African American (husbands: 9.4%, wives: 10.4%), Asian or Pacific Islander (husbands: 6.3%, wives: 4.2%), Latino/Latina (husbands: 5.2%, wives: 7.3%), Native American or Alaskan Native (husbands: 1.0%), and Other (husbands: 3.1%, wives: 8.3%).

Measures

Partners each completed the 32-item Dyadic Adjustment Scale (DAS; Spanier, 1976), a self-report measure of marital satisfaction. Scores range from 0 to 151, with higher scores indicating marital satisfaction. Items reflect levels of satisfaction, affection, cohesion, and the amount of disagreement in the relationship. The DAS has been shown to have good internal consistency, with alphas typically in the low to mid .90's (Spanier, 1989), as well as good test-retest reliability and discriminant validity (Spanier, 1976, 1989). Internal consistencies of .89 and .87 were found in the overall sample for husbands and wives, respectively (Atkins et al., 2005).

Additionally, individuals completed the Compass Treatment Assessment System (COMPASS; Sperry, Brill, Howard, & Grissom, 1996) before beginning treatment. This self-report measure includes three scales that evaluate an individual's functioning: Current Life Functioning, Current Symptoms, and Subjective Well-Being. The Mental Health Index (MHI) is

formed by a combination of these three scales converted into a *T* score. The MHI has a 3-4-week test-retest stability of .82 and an internal consistency of .87 (Sperry et al., 1996). A higher score represents greater mental health, with a mean of 50 and a standard deviation of 10. A score of 60 or below has been shown to be representative of an outpatient population rather than a non-patient population (Sperry et al., 1996). In the current sub-sample, men's *t*-scores ranged from 35.52 to 75.06 (mean = 60.62, *SD* = 8.52), and women's *t*-scores ranged from 26.68 to 73.87 (mean = 61.93, *SD* = 8.20). In the overall sample, the MHI had an internal consistency of .86 for husbands and .88 for wives (Atkins et al, 2005).

This study utilized data from the anxiety subscale of the Compass Treatment Assessment System (COMPASS; Sperry et al., 1996). This subscale is comprised of four Likert-scale items assessing current symptoms (e.g., feeling tense or anxious, feeling irritable or easily angered, feeling intense fear that seems out of place, and experiencing shortness of breath or rapid heartbeat). The anxiety subscale has an internal consistency of .80 and a 3-4 week test-retest stability of .80 (Sperry et al., 1996). *T*-scores were computed using standard scoring protocol for the anxiety subscale. In this sub-sample, the Cronbach's alpha for the anxiety subscale was .61 for men and .73 for women. Men's *t*-scores ranged from 33.36 to 61.40 (mean = 39.72, *SD* = 5.53), and women's *t*-scores ranged from 33.36 to 70.75 (mean = 39.81, *SD* = 5.90). Information regarding clinical cut-offs or norms for general and clinical populations on the anxiety subscale have not been published and are not available.

Social support communication behaviors were coded from couples' pre-treatment social support interactions using the Social Support Interaction Rating System (SSIRS; Jones & Christensen, 1998). Each spouse was instructed to choose an area of personal concern to change

or improve that was not a problem in the relationship. Couples were told to converse on each topic for 10 minutes, as follows:

[W]e would like you to have two... 10-minute discussions... [and] we'd like you to discuss concerns in your life at this time. In each of these discussions, one of you will talk with the other about something you are concerned about or would like to change about yourself. This could be about almost anything, like your work habits, your career, something about your personality or your appearance, some problem you have, friendships, or relationships within your family. The most important thing is that whatever you discuss should be something you are concerned about or want to change about yourself, and that is NOT really a problem in your marriage. In other words, this should be more of a personal thing that concerns you.

A list of common topics chosen by couples was provided if spouses had a difficult time talking about or thinking of a topic. The order of interactions was randomly alternated (wife or husband topic first). Couples were asked to discuss the topic within the given 10 minutes.

Couples were given the following instructions:

We would like [spouse 1] to spend the next 10 minutes talking with [spouse 2] about _____. During this time, [spouse 2], you can respond however you want to, but we do want you to be involved in some way in the discussion. When the 10 minutes are up, we will come back and ask the two of you to switch roles, so that in the second 10 minutes, [spouse 2] will talk with [spouse 1] about _____, with [spouse 1] responding to that.

The interactions were audiotaped and videotaped and then coded using the SSIRS.

Coders were undergraduate students that were trained by graduate students on the SSIRS using master training tapes and ratings, and were blind to all hypotheses and treatment conditions (Sevier et al., 2008). During each interaction, coders were asked to focus on one spouse at a time and judge the extent that the target spouse engaged in behaviors specified by the codes (Baucom, Sevier, Eldridge, Doss, & Christensen, 2011). Rating occurred over four years, and multiple randomly assigned coders watched each interaction independently before ratings were averaged for the final data set (Sevier et al., 2008). Tapes from nondistressed couples were also rated to ensure that coders saw multiple responses, and coding did not begin until some 26-week

assessments were completed so that coders rated both pretreatment and 26-week assessments at the same time (Sevier et al., 2008). Coders were supervised by graduate students, and weekly training meetings were conducted to discuss and practice the rating of difficult items to ensure reliability (Sevier et al., 2008).

The SSIRS is intended to measure emotional features of a conversation as well as concrete ratings of the topic, and consists of 18 questions coded across four categories: affectivity, features of the interaction, topic definition, and dominance/submission (Black et al., 2013). The appropriate rating of each dimension is determined by the frequency of particular verbal and nonverbal behaviors, their intensity, and the context in which they occur. After conducting a factor analysis of the items on the SSIRS, two major factors were studied. The first factor assessed Negative Affect/Behavior during interactions (belligerence/domineering, contempt/disgust, anger/frustration, global negative affect, and defensiveness), and the second factor assessed Positive Affect/Behavior (emotional support offered, global positive affect, affection, instrumental support offered, and satisfaction). High coder reliability ($\alpha > .85$) and inter-item consistency ($\alpha > .80$) were found for both factors (Jones, 2004).

Procedures

To be included in the study, participants first completed a three-stage screening and assessment process, which consisted of a phone interview to determine demographic eligibility and assess marital satisfaction, a mailed packet of measures to assess domestic violence and marital satisfaction, and an in-person assessment to evaluate marital satisfaction, conduct individual psychiatric interviews, complete multiple questionnaires, and complete the videotaped interactions. If couples remained eligible for the study, they were randomly assigned to one of the two treatment conditions and were scheduled with a project therapist for their first session.

Couples completed up to 26 sessions of either TBCT or IBCT and participated in multiple assessments throughout their treatment and during follow-up periods. Couples completed the DAS and COMPASS questionnaires and two videotaped 10-minute personal problem discussions at three time points (pre-treatment, 26-weeks later, and 2-year follow-up after treatment terminated), though the current study only focuses on pre-treatment data.

Data Analysis

The data was analyzed using Statistical Package for the Social Sciences (SPSS) software. The data set was first examined for missing data and outliers. Couples with one or more partners missing DAS, COMPASS anxiety subscale, or SSIRS data at pretreatment were excluded from this study.

The conditions and assumptions of regression were checked to be met by the data, and then an intercorrelation matrix was created. COMPASS Anxiety symptomatology and SSIRS positive and negative social support communication were centered on their means.

The first hypothesis, that an individual's marital satisfaction and their own anxiety will be negatively related, was tested using gender, marital satisfaction, and the interaction between gender and marital satisfaction as predictors of anxiety symptomatology in a simultaneous linear regression. The second hypothesis, that a spouse's individual anxiety and their own social support communication will be related, was tested using simultaneous linear regressions with gender, anxiety symptomatology, and the interaction between gender and anxiety symptomatology regressed on negative and positive social support communication behavior. The third hypothesis, that a spouse's marital satisfaction and their social support communication will be related, was tested using simultaneous regressions with gender, marital satisfaction and the

interaction between gender and marital satisfaction regressed on negative and positive social support communication behavior.

To test social support communication as a moderator of the relationship between a spouse's anxiety and their own marital satisfaction (the fourth hypothesis), a multilevel model was used. Analyses were conducted using Hierarchical Linear Modeling (HLM) 7 software (Raudenbush, Bryk, Cheong, Congdon Jr., & du Toit, 2016). Separate three-way interaction models for negative and positive social support were initially run, with gender, anxiety symptoms, negative/positive social support, the interaction between anxiety and negative/positive social support, and the interaction between gender, anxiety, and negative/positive social support as predictors of satisfaction:

$$\begin{aligned} \text{Level 1: } Y_{ij}(\text{Marital Satisfaction}) = & \beta_0 + \beta_1j(\text{Gender}) + \beta_2j(\text{Anxiety}) + \beta_3j(\text{Social} \\ & \text{Support}) + \beta_4j(\text{Anxiety X Social Support}) + \beta_5j(\text{Gender X Anxiety}) + \\ & \beta_6j(\text{Gender X Social Support}) + \beta_7j(\text{Gender X Anxiety X Social} \\ & \text{Support}) + r_{ij} \end{aligned}$$

$$\text{Level 2: } \beta_0j = \gamma_{00} + u_{0j}$$

$$\beta_1j = \gamma_{10}$$

$$\beta_2j = \gamma_{20}$$

$$\beta_3j = \gamma_{30}$$

$$\beta_4j = \gamma_{40}$$

$$\beta_5j = \gamma_{50}$$

$$\beta_6j = \gamma_{60}$$

$$\beta_7j = \gamma_{70}$$

After the three-way interactions were found to be non-significant, they were removed to test the two-way interactions. The following model was tested separately for both negative and positive social support to capture differences in relationship satisfaction between husbands and wives:

$$\text{Level 1: } Y_{ij}(\text{Marital Satisfaction}) = \beta_0 + \beta_1j(\text{Gender}) + \beta_2j(\text{Anxiety}) + \beta_3j(\text{Social Support}) + \beta_4j(\text{Anxiety X Social Support}) + r_{ij}$$

$$\text{Level 2: } \beta_0j = \gamma_{00} + u_{0j}$$

$$\beta_1j = \gamma_{10}$$

$$\beta_2j = \gamma_{20}$$

$$\beta_3j = \gamma_{30}$$

$$\beta_4j = \gamma_{40}$$

Once the two-way interactions were found to be non-significant, they were removed to test the individual variables. The following model was tested separately for both negative and positive social support to capture differences in relationship satisfaction between husbands and wives:

$$\text{Level 1: } Y_{ij}(\text{Marital Satisfaction}) = \beta_0 + \beta_1j(\text{Gender}) + \beta_2j(\text{Anxiety}) + \beta_3j(\text{Social Support}) + r_{ij}$$

$$\text{Level 2: } \beta_0j = \gamma_{00} + u_{0j}$$

$$\beta_1j = \gamma_{10}$$

$$\beta_2j = \gamma_{20}$$

$$\beta_3j = \gamma_{30}$$

Results

Hypothesis 1. Contrary to predictions, individuals' marital satisfaction was not directly related to their own anxiety symptomatology ($B = -.079, p > .05$), nor was there a significant interaction between gender and marital satisfaction in predicting anxiety symptomatology ($B = .546, p > .05$).

Hypothesis 2. Contrary to the hypothesis, partners' anxiety symptomatology was not significantly related to either their own negative or own positive social support communication behavior ($B = .070$ and $B = -.037$ respectively, $p > .05$), and there were no significant interactions with gender ($B = .052$ and $B = -.028$ respectively, $p > .05$).

Hypothesis 3. As predicted, partners' marital satisfaction was significantly negatively related to their own negative social support ($B = -.259, p < .001$), and significantly positively related to their own positive social support ($B = .314, p < .001$). There were no significant interactions with gender ($B = .221$ and $B = .463$ respectively, $p > .05$).

Hypothesis 4. Contrary to predictions, partners' anxiety symptomatology was not significantly related to their own marital satisfaction after controlling for social support communication ($p > .05$), and there were no differences in the interaction for husbands and wives. Therefore, there was no support for partners' social support communication (either negative or positive) moderating the effect of their own anxiety symptomatology on their own marital satisfaction (Table 1).

Discussion

This study sought to further understand the relationships among marital satisfaction, anxiety symptomatology, and social support communication, as well as the role of social support communication as a moderator of the existing relationship between anxiety symptomatology and

marital satisfaction. A sample of distressed, therapy seeking couples was analyzed using measures of anxiety symptomatology, marital satisfaction, and observationally coded social support interaction behavior. Results failed to replicate the existing literature on relationships between anxiety symptomatology and marital satisfaction, as well as gender differences between these relationships, suggesting that marital satisfaction and individual anxiety symptoms may not be as strongly related among chronically distressed, therapy seeking couples. This is similar to the Christensen et al. (2004) findings that DAS scores did not significantly predict Current Symptom scale scores of the COMPASS at pre-treatment. These results may be due to limitations of the current study, including the limited measure of anxiety symptomatology and the mild to moderate levels of anxiety found in this sample. It may be possible that a partner's anxiety is related to their own marital satisfaction only if symptoms are at a clinically significant level. Additionally, results did not support the hypothesis that an individual's anxiety symptoms and their own social support communication behavior are related for both husbands and wives, similar to Beck et al.'s (2006) study on observed support communication among couples with socially anxious female partners. This suggests that male and female individuals with and without anxiety symptoms may communicate in similar ways during supportive communications with their partners, though this may again be due to the low levels of anxiety symptomatology present in the current sample.

As predicted, partners who were more satisfied in their relationship exhibited more positive social support behavior (emotional support, global positive affect, affection, instrumental support, and satisfaction), and partners who were more distressed exhibited more negative affect and behavior (belligerence/ domineering, contempt/disgust, anger/frustration, global negative affect, and defensiveness) during their social support communications. There

were no differences among husbands and wives in the association between marital satisfaction and support behavior. This lack of gender difference is similar to previous observational studies that suggested no differences in the amount or type of support that husbands and wives generally provide to their spouses (Neff & Karney, 2005; Pasch et al., 1997; Verhofstadt, et al., 2007).

Similarly, the results of the initial moderation models did not support a difference between husbands and wives in their positive or negative social support's moderation of the relationship between their anxiety symptoms and marital satisfaction. The subsequent set of models did not support a difference between husbands and wives in the effect of anxiety on relationship satisfaction, nor the effect of social support on relationship satisfaction. Results failed to support hypotheses that positive or negative social support communication moderated the relationship between anxiety symptomatology and marital satisfaction. This suggests that the level of support one provides in a marital relationship may not influence the association between an individual's anxiety and their relationship satisfaction.

Before discussing the implications of these results, several limitations of this study are important to note. Though couples were recruited from two distinct cities (Los Angeles and Seattle), participants in the current study were disproportionately Caucasian (72%) and college educated (average 17 years of education). Additionally, couples had to be heterosexual, married, and living together to qualify for the study, which reduces the generalizability of the results to a more ethnically and relationally diverse sample. The range of marital satisfaction in this sample was limited to moderate and severely distressed couples due to all couples in this study being recruited for marital concerns, so the generalizability of the results of this study to mildly distressed couples is limited. Additionally, due to this sample being selected for marital distress rather than anxiety symptomatology, the level of anxiety experienced by participants may

generally be in the mild range and have limited variability, which could affect the contributions of anxiety to variance in marital satisfaction and social support communication. The mean of the current sample's anxiety subscale roughly corresponded to a score of 6 out of a maximum of 24, where a score of 4 is comprised of answers of "not at all" to all questions; however, detailed information regarding clinical cut-offs on the anxiety subscale have not been published and are not available. This limits the ability to determine how moderate to severe levels of anxiety are associated with marital quality and marital communication behavior.

Social support communication behaviors were also examined in laboratory settings, and previous observational research with couples has found differences in interactions in laboratory tasks as compared to interactions in natural settings (Gottman & Krokoff, 1989). Similarly, the coding system used in this study was developed to study couple interaction behaviors, and it may not be sensitive to behaviors that relate to symptoms of anxiety (e.g. avoidance of expressing strong emotion, desire to avoid conflict, actual avoidance of conflict, lack of assertion, and overreliance; Davila & Beck, 2002). The topics of these conversations were also not specific to anxiety, which may influence their relationship to anxiety symptomatology.

This study would additionally have benefited from measures of perceived support to supplement measures of observed social support communication, due to previous literature demonstrating that perceived support may be more directly related to marital satisfaction (Rafaeli & Gleason, 2009). Individuals with mental health symptomatology such as anxiety may have more difficulty perceiving social support due to cognitive biases (Cuming & Rapee, 2010). Verhofstadt et al. (2007) suggest that observational research may be useful to assess the accuracy and awareness of perceptions of support. Therefore, the study would have benefited from administration of both measures of provision of support (behavior) and reception of support

(perceived). Also, the study did not have enough statistical power to determine which partner had anxiety symptomatology or to differentiate whether individuals with anxiety or their partners were providing or soliciting support. This may be important due to the literature suggesting that individuals with anxiety symptomatology and their spouses provide and solicit support differently than couples without anxiety (Brock & Lawrence, 2014).

Further limitations of this study include a limited measure of anxiety symptomatology, as the COMPASS anxiety subscale only includes four items, and the Cronbach's alpha for the subscale in this sample for men was low (< 0.7). However, this scale has a small number of items (less than 10), there is good evidence for validity, and there were practical reasons to use this scale in the study (i.e. only measure of anxiety symptomatology administered), suggesting that it may be appropriate to use a lower criterion of 0.6 as a measure of acceptable reliability in this sample (Loewenthal, 2004). Despite this, more widely administered measures of anxiety symptomatology, such as the Beck Anxiety Inventory (BAI), would have been useful in providing more comprehensive assessments of symptomatology. Access to participants' responses to the anxiety items of the Structured Clinical Interview-I for DSM-IV (SCID-I) to further measure anxiety symptomatology beyond diagnostic status would be helpful in advancing the understanding of the impact of anxiety on couple satisfaction and social support interactions, particularly due to the lower levels of anxiety in the subsample indicated by the mean scores on the 4-item anxiety subscale.

Furthermore, the methods of data analysis in this study were only able to test whether a spouse's own support moderated the effect of their own symptoms on their own satisfaction. Utilizing a method of analysis such as the Actor Partner Interdependence Model (APIM; Kenny & Ledermann, 2010) of dyadic relationships that integrates a conceptual view of

interdependence may more fully address the research questions in this study. Using the actor-partner model, the relationship between a spouse's anxiety and the partner's marital satisfaction could be tested, as well as how this relationship may be moderated by both a spouse's and the partner's support communication. This is important due to the previous literature supporting these interdependent relationships (e.g. that people involved in dyadic relationships can influence one another's emotions, cognitions, and behaviors). For example, partners of individuals who display increased anxiety have been found to report higher daily distress and a reduction in positive relationship qualities, as well as decreased perceived support and availability from their anxious partner (Zaider et al., 2010). Therefore, an important future direction would be to run APIMs to test both actor and partner effects on the research questions in a sample with higher levels of anxiety.

Finally, this research utilized cross-sectional data and therefore does not provide directional or causal information about anxiety symptomatology, marital satisfaction, and social support. This may be especially important for the significant finding of the relationship between social support communication behavior and marital satisfaction. Though this relationship has been supported in many studies, including the present one, there is some evidence that this may be a cross-sectional phenomenon, as communication (social support and problem-solving) has been shown to be an inconsistent predictor of spouses' own satisfaction or their partner's satisfaction over time, and communication may not have lasting effects on relationship satisfaction (Lavner, Karney, & Bradbury, 2016).

Given these limitations, and some inconsistent results in existing studies, it is important to consider any interpretations and implications from this study as tentative until further evidence and clarity is forthcoming in the literature. The results from this study suggest that though

clinicians may choose to target increasing positive social support communication and decreasing negative support communication with both husbands and wives to improve marital satisfaction, these interventions may not influence the relationship between one partner's individual anxiety and their satisfaction in the marriage. However, it is important to note that the associations found, or lack thereof, in this study are a snapshot of distressed, therapy seeking couples before they begin treatment. These associations may shift as the couples' distress improves over the course of treatment - new associations may develop where there were none, or previously found associations may reduce over time. Therefore, any implications for treatment based on this study are mainly for the initial course of therapy.

Previous research has shown that couple therapy has been useful in decreasing symptoms of psychopathology, including anxiety disorders, major depression, bipolar disorder, alcohol problems, schizophrenia, and chronic illness (Carr, 2009). Christensen et al. (2004) found that though DAS scores were unrelated to MHI and Current Symptom scores on the COMPASS at pretreatment, changes in DAS scores over time were highly associated with improvements in both the MHI and Current Symptom scores after both TBCT and IBCT (Christensen et al., 2004). Three types of couple-based interventions for anxiety disorders have been identified that range from increased attention in the couple's relationship to treating the individual's anxiety: general couple therapy, disorder-specific interventions, and partner-assisted interventions (Baucom, Stanton, & Epstein, 2003). General couple therapy can be utilized with couples experiencing global relationship distress to reduce stress that may lead to or exacerbate an individual's anxiety symptoms or prevent a couple from working together in treatment (Baucom et al., 2003). Interventions may include cognitive-behavioral couple therapy techniques such as teaching communication skills and increasing positive interactions (Baucom et al., 2003).

Emotion-focused couple therapy (EFT) has also been shown to be effective in reducing relationship distress and anxiety symptomatology in multiple studies with couples where a partner is experiencing traumatic stress by increasing emotional support (Lebow, Chambers, Christensen, & Johnson, 2012).

Second, disorder-specific interventions target an individual's anxiety disorder with focus on couple relationship issues that impact or are impacted by the anxiety disorder, without addressing non-anxiety related relationship issues (Baucom et al., 2003). Models of adapting EFT and IBCT to the treatment of generalized anxiety disorder in distressed couples have been suggested (Benson, 2014; Priest, 2013). Finally, in partner-assisted interventions (PAI), an anxious individual's partner is brought into therapy as a surrogate therapist to coach the individual in completing homework assignments and provide support (Baucom et al., 2003). PAI's have been shown to be effective in treating individual panic disorder, obsessive-compulsive disorder, and generalized anxiety disorder symptoms (Carr, 2009; Lebow et al., 2012). All three approaches can be combined in a couple's treatment plan depending on their presenting complaints and goals for treatment (Baucom et al., 2003). It may be imperative that therapists treating couples with an anxious partner carefully assess the relationship between the partner's anxiety symptoms, the couple's relationship satisfaction, and their social support communication for each couple individually to determine how to best incorporate methods to address anxiety symptoms and social support.

The results of this study suggest that utilizing couple therapy to decrease individual symptoms of anxiety at the beginning of treatment may not be effective when targeting social support communication nor a partner's own satisfaction with their relationship due to the lack of association between anxiety and these variables. However, this may be true only for couples with

high levels of relationship distress, as they may not be ready to work together in targeting one partner's individual anxiety symptoms. Perhaps for these chronically and severely distressed couples, treatment may begin with general couple therapy, including improving social support communication, before moving toward more disorder-specific interventions. Additionally, though improving support communication may be important in treatment to increase couple engagement, it may not be sufficient to effect lasting change in marital satisfaction (Lavner, Karney, & Bradbury, 2016). Additional interventions to help couples understand and process other difficulties may be beneficial.

Important directions for future research include further examination of the relationship between anxiety symptoms and disorders with relationship satisfaction among couples (married and unmarried) at various levels of distress and at various levels of anxiety. Moderators and mediators of this relationship may be examined to enhance understanding of implications for treatment. Additionally, longitudinal studies including measures of both perceived and observed social support communication may more fully capture the nuances of intimate support. Data analyses utilizing APIMS would help clarify both actor and partner effects within the complex interdependence of romantic relationships.

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Table 1

Marital Satisfaction Predicted by Anxiety Symptomatology and Social Support Communication

	<u>Negative SS</u>			<u>Positive SS</u>		
	B	SEB	<i>t</i>	B	SEB	<i>t</i>
Model 1						
Gender	1.34	1.62	0.83	1.21	1.55	0.78
Anxiety	0.00	0.20	0.01	0.09	0.19	0.47
Social support	-0.18	0.47	-0.37	0.52	0.32	1.62
Anxiety x social support	-0.07	0.04	-1.80	0.03	0.04	0.64
Gender x anxiety	0.29	0.36	0.82	0.22	0.38	0.57
Gender x social support	0.39	0.33	1.17	0.57	0.38	1.49
Anxiety x social support x gender	-0.03	0.06	-0.47	0.04	0.09	0.49
Model 2						
Gender	1.23	1.66	0.74	1.18	1.59	0.74
Anxiety	0.00	0.19	0.02	0.09	0.19	0.47
Social support	-0.14	0.47	-0.29	0.60	0.32	1.86*
Anxiety x social support	-0.06	0.04	-1.48	0.03	0.04	0.88
Model 3						
Gender	1.07	1.66	0.64	1.13	1.59	0.71
Anxiety	-0.06	0.18	-0.32	0.06	0.19	0.33
Social support	-0.15	0.50	-0.29	0.59	0.32	1.81

Note. All *p* values were non-significant (> 0.5). One marginal effect of positive social support communication on marital satisfaction was found. * *p* = 0.06

APPENDIX A

Extended Review of the Literature

Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Atkins, Berns, George, Doss, Gattis, & Christensen (2005). Prediction of response to treatment in a randomized clinical trial of marital therapy	<ul style="list-style-type: none"> • Predictors of couple marital therapy treatment response (initial distress and change in satisfaction) • Demographics • Interpersonal factors • Intrapersonal factors • Uses IBCT study data 	Article, Empirical	<ul style="list-style-type: none"> • Purpose to examine pretreatment measures that predict which couples benefit from behaviorally oriented couple therapy • Demographic variables (age, education, income, years married, and children), intrapersonal variables (overall mental health and personality characteristic of neuroticism), and interpersonal variables (self-reported communication, commitment, and intimacy) • Overall finding was that relatively little predicts successful or unsuccessful outcome. 	<ul style="list-style-type: none"> • Quantitative • Self-report • Hierarchical linear modeling 	<ul style="list-style-type: none"> • Dyadic Adjustment Scale (DAS) • Demographic Info • Personality: NEO Five-Factor Inventory (NEO-FFI) • Compass Outpatient Treatment Assessment System (COMPASS) • Structured Clinical Interviews for DSM-IV for Axis I and II (SCID) • Family History of Distress Scale (FAM) from MSI-R • Communication Patterns Questionnaire (CPQ) • Intimacy: Closeness and Independence Inventory (CII) • Affective Communication Scale (AFC) from MSI-R • Sexual Dissatisfaction Scale (SEX) from MSI-R • Commitment/relationship stability: Marital Status Inventory (MSI) 	<ul style="list-style-type: none"> • 134 seriously and stably distressed married heterosexual couples

(continued)

Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Baucom, Eldridge, Jones, Sevier, Clements, Markman, Stanley, Sayers, Sher, & Christensen (2007). Relative Contributions of Relationship Distress and Depression to Communication Patterns in Couples (2007). Relative Contributions of Relationship Distress and Depression to Communication Patterns in Couples	<ul style="list-style-type: none"> • Depression • Marital distress • Problem-solving communication behaviors • Three samples 	Article, Empirical	<ul style="list-style-type: none"> • Purpose to examine depression as a predictor of types of communication (positive, negative, problem-solving, demand/withdraw) after controlling for shared variance between marital distress and depression) • Marital satisfaction only negatively related to depressive symptomology or diagnostic depression two samples • Symptomatic and diagnostic depression not directly related to communication behavior • Marital satisfaction related to some interaction patterns: Sample 1 - positively related to positivity, negatively related to negativity, related to wife demand/husband withdraw, Sample 2 - negatively related to problem-solving, Sample 3 - negatively related to global negative • Depression did not consistently predict interactions after controlling for marital satisfaction: Sample 1 - not related to communication, but interaction between diagnostic depression and sex added to the prediction of wife demand/husband withdraw, Sample 2 - depressive symptomatology related to avoidance but not to communication patterns, Sample 3 - depressive symptomatology and diagnostic depression not related to communication patterns 	<ul style="list-style-type: none"> • Quantitative • Self-report • Coding • Regression analyses 	<ul style="list-style-type: none"> • Dyadic Adjustment Scale (DAS) • Mental Health: Compass Outpatient Treatment Assessment System (COMPASS) • Structured Clinical Interviews for DSM-IV for Axis I (SCID) • Depression Scale of the Minnesota Multiphasic Personality Inventory (MMPI) • Symptom Checklist (SCL-90) • Marital Adjustment Test (MAT) • Social Support Interaction Rating System (SSIRS) • Couple Interaction Rating System (CIRS2) • Marital Interaction Coding System, Version III (MICS III) • Interacts Dimension Coding System (IDCS) 	<ul style="list-style-type: none"> • Sample 1: 132 seriously and stably distressed married heterosexual couples • Sample 2: 59 distressed couples seeking therapy • Sample 3: 93 couples who were planning marriage and were recruited for a relationship development program

(continued)

Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Baucom, Whisman & Paprocki (2012). Couple-based interventions for psychopathology (2012). Couple-based interventions for psychopathology	<ul style="list-style-type: none"> • Couple-based interventions for psychopathology • Relationship 	Article, Conceptual, Review	<ul style="list-style-type: none"> • Relationship distress and psychopathology are cross-sectionally and longitudinally associated. • In many instances individual therapy for psychopathology is less effective when the couple is distressed • Couple-based interventions have the capacity to alleviate individual psychopathology and improve relationship functioning. • Three models of couple-based interventions for treating psychopathology: 1) partner-assisted interventions, 2) disorder-specific interventions and 3) couple therapy interventions • Examples of couple-based interventions for OCD, AN, and MDD 	N/A	N/A	N/A

(continued)

Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Baucom, Sevier, Eldridge, Doss, & Christensen (2011). Observed Communication in Couples Two Years After Integrative and Traditional Behavioral Couple Therapy: Outcome and Link With Five-Year Follow-Up	<ul style="list-style-type: none"> • Observed communication • Outcome and Follow-up • Change in couple communication • Support in Intimate Relationships Rating Scale (SIRRS) • Difference between TBCT and IBCT 	Article, Empirical	<ul style="list-style-type: none"> • Examined changes in observed communication from post-therapy to 2-year follow-up. Problem solving did not change among distressed couples in a randomized clinical trial • Partners' negativity, withdrawal, and positivity continued to decrease. Problem solving did not change • IBCT wives' negativity decreased, TBCT wives did not have a significant decrease. TBCT husbands' positivity decreased, IBCT husbands did not have a significant decrease • Decreases in withdrawal and increases in problem solving associated with greater relationship satisfaction. Reductions in wives' positivity over time associated with lower relationship satisfaction in husbands at 2-year follow up, but associated with higher levels of relationship satisfaction in wives • Increase in wives' positivity from pre-therapy to post-therapy significantly associated with treatment response and relationship stability 5 year later • Association between increased positivity and treatment response remained after controlling for withdrawal 	<ul style="list-style-type: none"> • Quantitative • Self-report • Coding • Hierarchical Linear Modeling 	<ul style="list-style-type: none"> • Dyadic Adjustment Scale (DAS) • Social Support Interaction Rating System (SSIRS) • Couple Interaction Rating System (CIRS) 	<ul style="list-style-type: none"> • 134 seriously and stably distressed married heterosexual couples
Beck, Davila, Farrow & Grant (2006). When the heat is on: Romantic partner responses influence distress in socially anxious women	<ul style="list-style-type: none"> • Couples • Social anxiety • Observed social support behavior 	Article, Empirical	<ul style="list-style-type: none"> • Examines whether socially anxious women and their partners would show more negative social support behavior, especially among those with low relationship satisfaction, and whether this would increase the distress of the socially anxious women • Found no differences between socially and non-socially anxious women and their partners 	<ul style="list-style-type: none"> • Quantitative • Observation 	<ul style="list-style-type: none"> • Social Interaction Anxiety Scale (SIAS) • Social Support Interaction Coding System modified into global coding system (SSICS) • Satisfaction subscale of the Perceived Relationship Quality Components Inventory (PRQC) • Positive and negative affect schedule (PANAS) 	<ul style="list-style-type: none"> • 45 female undergraduates in Introductory Psychology and their romantic partners (44 male, 1 female)

(continued)

Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Black, Katsamanis, Baucom, Lee, Lammert, Christensen, Georgiou, & Narayanan (2013). Toward Automating a Human Behavioral Coding System for Married Couples' Interactions Using Speech Acoustic Features	<ul style="list-style-type: none"> • Behavioral Signal Processing (BSP) • Couple therapy • Dyadic interactions • Observational methods/coding systems 	Article, Conceptual, Empirical	<ul style="list-style-type: none"> • Proposes an engineering methodology toward automating a manual human behavioral coding system for marital problem-solving discussions using acoustic speech features. • Reviews current couple coding systems • Social Support Interaction Rating System (SSIRS) measured the emotional content of couple interactions and topic conversation. It consists of 19 codes across 4 categories: affectivity, dominance/submission, features of the interaction, and topic definition. • Couple Interaction Rating System (CIRS) consisted of 13 codes and was designed for coding problem-solving discussions 	<ul style="list-style-type: none"> • Quantitative • Observation 	<ul style="list-style-type: none"> • Social Support Interaction Rating System • Couples Interaction Rating System (CIRS) 	<ul style="list-style-type: none"> • 134 seriously and stably distressed married heterosexual couples

(continued)

Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Bradbury, Fincham, & Beach (2000). Research on the Nature and Determinants of Marital Satisfaction: A Decade in Review	<ul style="list-style-type: none"> • Literature review • Couple satisfaction • Interpersonal processes within marriage • Micro and macrocontexts within marriage 	Article, Literature Review	<ul style="list-style-type: none"> • Studies interpersonal processes in marriage (cognition, affect, physiology, behavior patterns, social support, violence) • Studies milieus in which marriages operate (microcontexts - presence of children, life stressors, transitions; macrocontexts - economic factors, perceived mate availability) • Examines conceptualization and measurement of marital satisfaction • Evidence that maladaptive attributions covary with increased rates of negative behaviors during problem solving discussions • Increased demands lead to increased avoidance, which leads to increased demands for engagement, which leads to decrease in marital satisfaction (Demand/withdraw pattern) • Support processes reliably linked with marital functioning and important family health outcomes • Link between physical aggression and marital quality assumed • Various microcontexts (e.g., children, spouses' characteristics and background, life stressors, transitions) and macrocontexts (e.g., socioeconomic factors) linked to marital satisfaction 	N/A	N/A	N/A

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Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Bradbury & Karney (2004). Understanding and Altering the Longitudinal Course of Marriage	<ul style="list-style-type: none"> • Literature review • Couple interactional process • Marital outcomes • Prevention 	Article, Literature Review	<ul style="list-style-type: none"> • Considers how social support and positive affect moderate the effects of problem-solving skills on changes in marital quality • Examines partners' individual strengths and vulnerabilities as antecedents of marital aggression and hostile interaction • Recognizes the central role of chronic and acute circumstances in governing fluctuations in spouses' judgments of marital quality • Couples with relatively poor problem-solving skills will achieve marital outcomes that are no different from couples with relatively good problem-solving skills, provided that they display relatively high levels of affection, humor, and interest/curiosity. Only when spouses display relatively poor low levels of these positive emotions that poor skills appear to be detrimental • High levels of wives' negative affect in problem-solving interactions combined with high levels of wives' negative support to produce high levels of marital distress, suggesting that deficits in one domain can potentiate the effects of deficits in another domain 	N/A	N/A	N/A

(continued)

Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Brock & Lawrence (2014). Intrapersonal, Interpersonal, and Contextual Risk Factors for Overprovision of Partner Support in Marriage	<ul style="list-style-type: none"> • Support • Overprovision • Underprovision • Adequacy • Risk Factors • Marriage • Attachment • Intimacy • Stress 	Article, Empirical	<ul style="list-style-type: none"> • Purpose to identify risk factors for experiencing support overprovision • Underprovision and overprovision are qualitatively distinct types of inadequate support - overprovision of “wrong” support more detrimental than underprovision • Risk factors - intrapersonal (anxious and avoidant attachment), interpersonal (emotional intimacy and conflict management), and contextual factors (chronic stress) identified and analyzed as possible risk factors • Higher emotional intimacy at beginning of marriage associated with lower levels of husbands’ and wives’ support overprovision • Higher levels of husbands’ avoidant attachment styles and stress during the transition to marriage associated with higher overall levels of overprovision for both husbands and wives. • Huabands’ and wives’ anxious attachment, wives’ avoidant attachment, conflict management, and wives’ stress not significant predictors of support overprovision • Support underprovision influenced by husband and wife anxious attachment, wife avoidant attachment, wife stress, and conflict management • Interpersonal dysfunction (intimacy) partially mediated husband avoidant attachment • Neither husband nor wife stress significantly moderated effects of intrapersonal and interpersonal variables on support overprovision • Risk factors for support overprovision appear distinct from risk factors for support underprovision 	<ul style="list-style-type: none"> • Quantitative • Self-Report • Multivariate two-level model 	<ul style="list-style-type: none"> • Support in Intimate Relationships Rating Scale (SIRRS) • The Relationship Scales Questionnaire (RSQ) • The Relationship Quality Interview (RQI) • The Chronic Strains Inventory (CSI) 	<ul style="list-style-type: none"> • 103 newlywed couples in the Midwest in first marriage

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Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Carr (2009). The effectiveness of family therapy and systemic interventions for adult-focused problems	<ul style="list-style-type: none"> • Systemic interventions • Mood disorders • Anxiety disorders • Relationship distress 	Article, Literature Review	<ul style="list-style-type: none"> • Primary goal was to summarize the evidence base for systemic practice with adult-focused problems (relationship distress, psychosexual problems, domestic abuse, anxiety disorders, mood disorders, alcohol abuse, schizophrenia, and adjustment to chronic physical illness) • Results suggest that systemic practices (family therapy and other family-based interventions) are effective either alone or as part of multimodal programs for relationship and mental health problems 	N/A	N/A	N/A
Christensen, Atkins, Berns, Wheeler, Baucom & Simpson (2004). Traditional Versus Integrative Behavioral Couple Therapy for Significantly and Chronically Distressed Married Couples	<ul style="list-style-type: none"> • Marriage • Relationship satisfaction • Relationship stability • Communication • Individual functioning • Treatment efficacy 	Article, Empirical	<ul style="list-style-type: none"> • Purpose to study overall and comparative efficacy of TBCT vs. IBCT in treatment of seriously and chronically distressed married couples • TBCT and IBCT are both effective treatments for moderately and severely distressed couples. 	<ul style="list-style-type: none"> • Quantitative • Self-Report • Hierarchical linear modeling 	<ul style="list-style-type: none"> • Marital Adjustment Test (MAT) • Marital Satisfaction Inventory-Revised (MSI-R): Global Distress Scale (GDS), Problem solving communication subscale (PSC), Affective communication subscale (AFC) • Dyadic Adjustment Scale (DAS) • Conflict Tactics Scale-Revised (CTS-2) • Structured Clinical Interviews for DSM-IV for Axis I and II (SCID) • Marital Status Inventory (MSI) • Compass Outpatient Treatment Assessment System (COMPASS): Mental Health Index (MHI), Current Symptoms (CS) 	<ul style="list-style-type: none"> • 134 seriously and stably distressed married heterosexual couples

(continued)

Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Coyne & DeLongis (1986). Going Beyond Social Support: The Role of Social Relationships in Adaptation	<ul style="list-style-type: none"> • Perceived social support • Stress • Marriage 	Article, Literature Review	<ul style="list-style-type: none"> • Purpose to highlight limitations of the concept of perceived social support as a means of understanding the role of social relationships in stress and coping • If focus is on perceived support then one learns little about the interpersonal dynamics that take place in close relationships or about how supportive provisions are mobilized and used in the coping process • Asserts that concept of support is oversimplified and we must look at a person's characteristics, circumstances, available support, and cost and benefits before determining proper interventions 	N/A	N/A	N/A
Cuming & Rapee (2010). Social anxiety and self-protective communication style in close relationships	<ul style="list-style-type: none"> • Social Anxiety • Communication • Relationship quality 	Article, Empirical	<ul style="list-style-type: none"> • Examined whether a style of communication adopted by people with higher social anxiety in their close relationships was associated with decrements in the quality (support, depth, conflict) of these relationships • People with higher social anxiety tend to reveal less information about themselves in interactions with strangers, this appears to be part of a self-protective strategy adopted in situations in which the risk of negative evaluation is judged to be particularly high • A lack of disclosure was seen in both romantic relationships and close friendships in females but not males • An indirect association between higher social anxiety and lower relationship quality (lower support, with a trend towards greater conflict) via lower self-disclosure in women's romantic relationships but not their close friendships 	<ul style="list-style-type: none"> • Quantitative • Self-Report 	<ul style="list-style-type: none"> • Social Interaction Anxiety Scale (SIAS) • Depression Anxiety Stress Scale-21 (DASS-21) • Self Disclosure Inventory (SDI) • Emotional Self Disclosure Scale (ESDS) • Quality of Relationship Inventory (QRI) 	<ul style="list-style-type: none"> • 312 adults from the community that were currently in committed heterosexual romantic relationships

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Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Davila & Beck (2002). Social Anxiety Associated With Impairment in Close Relationships? A Preliminary Investigation	<ul style="list-style-type: none"> • Social Anxiety • Interpersonal functioning • Interpersonal styles • Relationship dysfunction 	Article, Empirical	<ul style="list-style-type: none"> • Examined the association between social anxiety and interpersonal functioning • Focus was on close relationships • Proposed that social anxiety would be associated with specific interpersonal styles • Higher levels of social anxiety were associated with interpersonal styles reflecting less assertion, more conflict avoidance, more avoidance of expressing emotion, and greater interpersonal dependency • Lack of assertion and over reliance on others mediated the association between social anxiety and interpersonal stress • Interpersonal styles were all associated with interpersonal chronic stress 	<ul style="list-style-type: none"> • Quantitative • Self-Report 	<ul style="list-style-type: none"> • Anxiety Sensitivity Index (ASI) • Beck Depression Inventory (BDI) • SCID • Social Anxiety Relationship Interview (SARI) • Chronic Stress Interview 	<ul style="list-style-type: none"> • 168 students enrolled in an introductory psychology course at SUNY Buffalo were selected based on their scores on the Anxiety Sensitivity Index
Dehle & Weiss (2002). Associations Between Anxiety and Marital Adjustment	<ul style="list-style-type: none"> • State anxiety • Marital quality • Gender differences 	Article, Empirical	<ul style="list-style-type: none"> • Purpose to test whether the level of state anxiety predicts fluctuations in marital quality over time in within-spouse and cross-spouse associations • Husbands' Time 1 anxiety can predict their own and their wives' subsequent reports of marital adjustment but Wives' Time 1 anxiety did not predict their own or their husbands' subsequent reports of marital adjustment 	<ul style="list-style-type: none"> • Quantitative • Self-Report • Hierarchical regression analysis 	<ul style="list-style-type: none"> • Dyadic Adjustment Scale (DAS) • Beck Anxiety Inventory (BAI) 	<ul style="list-style-type: none"> • 47 recently married couples from community

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Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Halford, Bouma, Kelly & Young (1999). "Individual Psychopathology and Marital Distress: Analyzing the Association and Implications for Therapy"	<ul style="list-style-type: none"> • Couples • Relationship distress • Psychopathology • Depression • Anxiety 	Article, Literature Review	<ul style="list-style-type: none"> • Review of literature on relationship between individual psychopathology and marital distress with focus on depression, anxiety, alcohol abuse, and psychoses • Includes suggestions for individual and couple focused therapy and the importance of assessment 	N/A	N/A	N/A
Kenny, D. A. & Ledermann, T. (2010). "Detecting, measuring, and testing dyadic patterns in the actor-partner interdependence model."	<ul style="list-style-type: none"> • APIMs • Couples 	Article, Perspective	<ul style="list-style-type: none"> • Suggests new method to test patterns of actor effects and partner effects in dyadic data using the APIM: couple pattern, contrast pattern, and actor-only pattern. • Proposes estimation of k parameter 	N/A	N/A	N/A

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Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Lavner & Bradbury (2012). Why Do Even Satisfied Newlyweds Eventually Go on to Divorce?	<ul style="list-style-type: none"> • Divorce • Newlyweds • Marital satisfaction • Observed communication • Social support behavior • Commitment • Stress • Personality 	Article, Empirical	<ul style="list-style-type: none"> • Purpose to identify risk factors early in marriage that distinguish initially satisfied couples who eventually divorce at 10 year follow-up from those who remain married • Suggests that low-distress couples who go on to divorce may differ from those who do not divorce in lower levels of commitment, poorer observed communication, more maladaptive personality, and higher levels of stress 	<ul style="list-style-type: none"> • Quantitative • Longitudinal • Self-report and observational 	<ul style="list-style-type: none"> • Commitment Inventory • Neuroticism scale of the Eysenck Personality Questionnaire • Multidimensional Anger Inventory • Rosenberg Self-Esteem Scale • Acute stress - Life Experience Survey • Chronic stress - interviewed about the quality of nine life domains • Verbal Aggression subscale of the Conflict Tactics Scale • Problem solving skills - The Kategoriensystem fur Partnerschaftliche Interaktion • Problem solving affect - Specific Affect Coding System • Social Support Interaction Coding System 	<ul style="list-style-type: none"> • 136 newlywed couples identified from marriage licenses filed in Los Angeles County • All couples were stably satisfied with their marriages over four years
Lawrence, Bunde, Barry, Brock, Sullivan, Pasch, White, Dowd, & Adams (2008). Partner support and marital satisfaction: Support amount, adequacy, provision, and solicitation	<ul style="list-style-type: none"> • Partner social support • Perceived support • Observed support • Marital satisfaction 	Article, Empirical	<ul style="list-style-type: none"> • Purpose to study if amount or adequacy of support received is more predictive of marital satisfaction • Examines if providing or soliciting support predicts marital satisfaction • Found that perception of support adequacy predicted marital satisfaction more than amount of support for husbands • Found that amount of support predicted marital satisfaction more than support adequacy for wives • For wives, soliciting support predicted marital satisfaction while for husband, providing support predicted marital satisfaction 	<ul style="list-style-type: none"> • Quantitative • Self-report and observational 	<ul style="list-style-type: none"> • Support in Intimate Relationship Rating Scales (SSIRS) • Social Support Interaction Coding System (SSICS) • Marital Adjustment Test (MAT) • Quality of Marriage Index (QMI) • Kansas Marital Satisfaction (KMS) 	<ul style="list-style-type: none"> • Two samples. Both samples include newlywed couples that have been married 3 to 6 months • Sample 1: 62 couples • Sample 2: 235 couples

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Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Lebow, Chambers, Christensen, & Johnson (2012). Research on the treatment of couple distress	<ul style="list-style-type: none"> • Anxiety • Depression • Couples therapy • Literature review 	Article, Literature Review	<ul style="list-style-type: none"> • Marital distress is associated with broad classifications of anxiety, mood and substance use disorders. • Couple events experienced as humiliating such as infidelity and separation often lead to anxiety and depression and vice versa • Couple therapy is helpful in the treatment of individual disorders 	N/A	N/A	N/A
McLeod (1994). Anxiety Disorders and Marital Quality	<ul style="list-style-type: none"> • Anxiety disorders • Complications • Marriage 	Article, Empirical	<ul style="list-style-type: none"> • Compared perceived marital quality among couples where neither, one or both spouses met criteria for an anxiety disorder • Anxiety disorders are associated with disrupted marital interactions • Phobic husbands and their wives reported poorer marital quality than other spouses • Husbands' panic disorders had similar but weaker effects on perceived marital quality • Wives' panic disorder predicted poor perceived marital quality in husbands • For generalized anxiety, time of onset of symptoms may be more important in predicting marital quality 	<ul style="list-style-type: none"> • Quantitative • Self-report survey 	<ul style="list-style-type: none"> • Diagnostic Interview Schedule, Version III-A (DIS) 	<ul style="list-style-type: none"> • Couples that lived in the suburbs of the Detroit metropolitan area • 778 couples from households recruited • Additional 199 individual from households recruited • Follow-up interviews included 611 couples

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Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Neff & Karney (2005). Gender Differences in Social Support: A Question of Skill or Responsiveness?	<ul style="list-style-type: none"> • Observed social support • Gender differences • Stress 	Article, Empirical	<ul style="list-style-type: none"> • Suggests that provision of effective spousal support involves knowing how to support a partner and also understanding when to provide that support • No significant differences in husbands' and wives' support provision behavior or average daily perceptions of supportive or negative behavior • Husbands' support provision behaviors not significantly associated with severity of wives' problem for positive and negative behaviors • Wives' positive support provision significantly associated with severity of husbands' problem, where husbands discussing more severe problems tended to receive the best support from wives • Husbands who experienced more stress reported receiving more positive support from wives • Wives who experienced more stress reported receiving more negative behaviors from their husbands • As husbands' stress increased, they reported their wives responded by providing them with more support. • As wives' stress increased, they reported their husbands responded by providing them with both more supportive and more negative behaviors 	<ul style="list-style-type: none"> • Quantitative and Observational • Hierarchical linear modeling 	<ul style="list-style-type: none"> • Social Support Interaction Coding System (SSICS) • Problem severity – couples were asked three questions about problem • Daily stressful life circumstances - diary card • Daily perceptions of spousal support – diary card • Daily perceptions of negative spousal behaviors – diary card • Daily hours spent together – diary card 	<ul style="list-style-type: none"> • 169 newlywed couples

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Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Pankiewicz, Majkowicz, & Krzykowski (2012). Anxiety disorders in intimate partners and the quality of their relationship	<ul style="list-style-type: none"> • Anxiety • Couple relationships • Gender 	Article, Empirical	<ul style="list-style-type: none"> • Purpose is to examine is anxiety disorders presenting in one or both partners in a relationship influence the latter and to what extent • Presence of anxiety disorder in at least one partner negatively affects the quality of partner relationship, couples where at least female has anxiety are most affected 	<ul style="list-style-type: none"> • Quantitative • ANOVA 	<ul style="list-style-type: none"> • Dyadic Adjustment Scale (DAS) • Family Attitudes Scale (FAS) • Marriage Success Scale (SPM) 	<ul style="list-style-type: none"> • 85 couples who had at least one partner who had been hospitalized or treated for anxiety • Included 20 where male had anxiety and female did not • Included 40 where female had anxiety and male did not • Included 25 where male and female had anxiety
Pasch & Bradbury (1998). Social support, conflict, and the development of marital dysfunction	<ul style="list-style-type: none"> • Social support behavior • Observed communication • Marital satisfaction 	Article, Empirical	<ul style="list-style-type: none"> • Suggests that how partners help each other with personal problems, rather than marital problems, may be important to marital satisfaction • Husbands twice as likely to display anger and contempt during conflict discussions when in relationships later classified as distressed • Wives half as likely to display positive behavior and twice as likely to display negative behavior when offering support, and twice as likely to display negative behavior when soliciting support when in relationships later classified as distressed • Marital satisfaction associated with behaviors exhibited: relatively satisfied couples more likely to facilitate mutual understanding and less likely to reject or blame their spouses • Relatively satisfied couples expressed low levels of anger and contempt 	<ul style="list-style-type: none"> • Quantitative • Observation • Hierarchical Linear Modeling 	<ul style="list-style-type: none"> • Marital Adjustment Test • Verbal Tactics Coding Scheme (VTCS) • Specific Affect Coding System (SPAFF) • Social Support Interaction Coding System 	<ul style="list-style-type: none"> • 60 newlywed couples

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Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Pasch, Bradbury, & Davila (1997). Gender, negative affectivity, and observed social support behavior in marital interaction	<ul style="list-style-type: none"> • Social support behavior • Neuroticism • Depression • Gender differences • Marital satisfaction 	Article, Empirical	<ul style="list-style-type: none"> • Examined the association of both support-seeking and provision behaviors with negative affectivity, as assessed by measures of neuroticism and depressed mood in newlywed couples • Husbands and wives did not differ significantly in their proportions of helper behaviors • As helpers, wives engaged in more off-task behavior than husbands did, and as helpees, wives were more negative than were husbands • Wives appear to be more negative on average than their husbands when talking about a personal characteristic or difficulty they would like to change • Husbands were less likely to provide specific, helpful suggestions to the extent that they were high in negative affectivity • Wives who were high in negative affectivity were likely both to provide and solicit or receive support in a largely negative manner • Husbands' high levels of negative affectivity were associated with wives exhibiting higher proportions of positive emotional helper behavior, whereas wives' high levels of negative affectivity were associated with husbands exhibiting lower proportions of positive emotional helper behavior and lower proportions of other positive helper behavior 	<ul style="list-style-type: none"> • Quantitative • Observation 	<ul style="list-style-type: none"> • Marital Adjustment Test • Neuroticism Scale of Eysenck Personality Questionnaire • Beck Depression Inventory • Social Support Interaction Coding System 	<ul style="list-style-type: none"> • 60 newlywed couples

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Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Rafaeli & Gleason (2009). Skilled Support Within Intimate Relationships	<ul style="list-style-type: none"> • Social support • Relationship • Stress 	Article, Literature Review	<ul style="list-style-type: none"> • Examines perceived and observed support in committed intimate relationships • Knowing that someone is available to be supportive associated with lower distress during times of stress • Receipt of support associated with worse rather than better psychological outcomes, even when support increases positive feelings • Minimization of feeling, identification with feelings, advice giving, and encouragement of recovery most often seen as unhelpful • Effectiveness of social support partially dependent on timing (i.e., when provided, how provider and the recipient traverse stages, and how supportive interaction fits within cycles of reciprocation). • Some types of emotional or practical assistance (e.g., caring, tangible assistance) likely to be more helpful than others (e.g., advice), but most benefit when the type of need and the type of support match • Visible support, when recipients are aware of support, and directive support, when support is provided without the request or against the wishes of the recipient, can reduce and even reverse intended effects • Receipt combined with provision of support tends to be beneficial for both partners 	N/A	N/A	N/A

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Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Sarason, Gregory, Pierce, Shearin, Sarason, & Waltz (1991). Perceived social support and working models of self and actual others	<ul style="list-style-type: none"> • Perceived social support • Perceptions of self • Perceptions of others • Personal relationships 	Article, Empirical	<ul style="list-style-type: none"> • Aim was to investigate linkages between perceived social support and perceptions of self and others, and others' perceptions of the self • Perceptions of social support are distinct from observable features of potentially supportive transactions • Perceived support is predictive of coping effectiveness, adjustment outcome, and psychological and physical well-being 	<ul style="list-style-type: none"> • Quantitative 	<ul style="list-style-type: none"> • Social Support Questionnaire (SSQ) • UCLA Loneliness Scale • Social Reticence Scale II • Parental Bonding Instrument • Quality of Relationships Inventory (QRI) 	<ul style="list-style-type: none"> • Study 1: 130 undergraduate students • Study 2: 210 undergraduate students
Sevier, Eldridge, Jones, Doss & Christensen (2008). Observed Communication and Associations With Satisfaction During Traditional and Integrative Behavioral Couple Therapy	<ul style="list-style-type: none"> • Couples satisfaction • IBCT • TBCT • Observed communication • Positivity • Negativity • Withdrawal • Problem solving 	Article, Empirical	<ul style="list-style-type: none"> • Examined observed communication changes and associated satisfaction changes in TBCT and IBCT • Observed potential mechanisms of change - positivity, negativity, withdrawal, and problem solving in problem solving and social support interactions • Therapy improves communication behaviors in couples over time, with some differences between problem solving and social support discussions • Decreases in marital satisfaction associated with increased negativity during relationship problem discussions and increased withdrawal during personal problem discussions 	<ul style="list-style-type: none"> • Quantitative • Observation • Hierarchical Linear Modeling 	<ul style="list-style-type: none"> • Dyadic Adjustment Scale (DAS) • Global Distress Scale of the Marital Satisfaction Inventory-Revised (MSI-R) • Couple Interaction Rating System (CIRS) • Social Support Interaction Rating System (SSIRS) 	<ul style="list-style-type: none"> • 134 seriously and stably distressed married heterosexual couples

(continued)

Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
South, Krueger, & Iacono (2011). Understanding General and Specific Connections Between Psychopathology and Marital Distress: A Model Based Approach	<ul style="list-style-type: none"> • Marital distress • Psychopathology • Internalizing • Externalizing 	Article, Empirical	<ul style="list-style-type: none"> • First study to examine whether the strong and replicable relationships found between marital distress and various comorbid psychopathology syndromes are due to their shared versus specific variance • Internalizing and externalizing psychopathology factors were significantly negatively associated with marital adjustment in both the individual and his or her partner • After accounting for the impact of the INT and EXT factors, there were no significant independent associations with any specific forms of psychopathology • Marital distress was significantly negatively correlated with the psychopathology indicator variables • Marital satisfaction was negatively correlated with symptoms of major depression for both men and women 	<ul style="list-style-type: none"> • Quantitative • Observation • Structural Equation Modeling 	<ul style="list-style-type: none"> • Structured Clinical Interview for Axis I and II for DSM-III-R • Substance Abuse Module of the Composite International Diagnostic Interview • Dyadic Adjustment Scale (DAS) 	<ul style="list-style-type: none"> • 929 couples who participated in the Minnesota Twin Family Study (MTFS)

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Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Sullivan, Pasch, Johnson, & Bradbury (2010). Social Support, Problem Solving, and the Longitudinal Course of Newlywed Marriage	<ul style="list-style-type: none"> • Marital satisfaction • Social support behavior • Problem solving behavior • Divorce • Mediation 	Article, Empirical	<ul style="list-style-type: none"> • Purpose to investigate cross-lagged associations between problem-solving behaviors, social support behaviors, and relation to changes over 10 years in relationship satisfaction and marriage dissolution • Conflict and support behaviors observed and coded for husbands and wives shortly after marriage and 1 year later • Social support behaviors predicted marital satisfaction, affective problem solving, and divorce • Ways spouses respond to everyday disclosures and requests for support may be more important than how they negotiate conflict in leading to changes in behavior that predict later marital satisfaction and stability • Social support alone predicted long-term marital satisfaction and marital status by directly and indirectly affecting spouses' behavior in problem-solving • Support behaviors seem to be more stable over first year of marriage than problem solving behaviors 	<ul style="list-style-type: none"> • Quantitative • Observation • Longitudinal • Hierarchical Linear Modeling (HLM) • Hierarchical multiple regression 	<ul style="list-style-type: none"> • Marital Adjustment Test (MAT) • Specific Affect Coding System (SPAFF) • Social Support Interaction Coding System (SSICS) 	<ul style="list-style-type: none"> • 172 newlywed couples in first marriages participating in an ongoing, longitudinal study of marriage
Verhofstadt, Buysse, Ickes (2007). Social support in couples: An examination of gender differences using self-report and observational methods	<ul style="list-style-type: none"> • Social support • Couples • Gender differences • Observational methods • Self-report 	Article, Empirical	<ul style="list-style-type: none"> • Purpose is to understand if there is a gender difference in support provision and support solicitation • Gender difference was found in self-report data, women were more likely to provide instrumental and emotional support than men and respond less negatively to spousal support solicitation than men • No gender difference was found in observational data 	<ul style="list-style-type: none"> • Quantitative • Observation 	<ul style="list-style-type: none"> • Dyadic Adjustment Scale (DAS) • Social Support Interaction Questionnaire (SSIQ) • Quality of Relationship Inventory (QRI) • Social Support Interaction Coding System (SSICS) 	<ul style="list-style-type: none"> • Study 1: 458 married Belgian couples • Study 2: 32 married Belgian couples

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Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Whisman (1999). Marital Dissatisfaction and Psychiatric Disorders: Results From the National Comorbidity Survey	<ul style="list-style-type: none"> • Marital dissatisfaction • Psychopathology 	Article, Empirical	<ul style="list-style-type: none"> • Purpose to examine the association between marital dissatisfaction and 12-month prevalence rates of Axis I psychiatric disorders in a nationally representative sample of married individuals • Marital dissatisfaction associated with the presence of any disorder, with differences found between men and women after controlling for comorbidities 	<ul style="list-style-type: none"> • Quantitative • Self-report survey 	<ul style="list-style-type: none"> • Composite International Diagnostic Interview (CIDI) based on DSM-III-R • Marital dissatisfaction two items: "All in all, how satisfied are you with your relationship—very, somewhat, not very, or not at all satisfied?" and "Overall, would you rate your relationship as excellent, good, fair, or poor?" 	<ul style="list-style-type: none"> • 2,538 married respondents from the National Comorbidity Survey
Whisman (2007). Marital Distress and Psychiatric Disorders in a Population-Based National Survey	<ul style="list-style-type: none"> • Marital dissatisfaction • Psychopathology • Gender moderator • Age moderator 	Article, Empirical	<ul style="list-style-type: none"> • Evaluated the association between a multi-item measure of marital distress and DSM-IV psychiatric disorders in a population-based survey of individuals in the United States in which there was no upper age exclusionary criterion. • Evaluated whether the associations between marital distress and psychiatric disorders were moderated by gender or age • Marital distress was associated with a range of psychiatric disorders 	<ul style="list-style-type: none"> • Quantitative • Self-report survey 	<ul style="list-style-type: none"> • World Health Organization World Mental Health Survey Initiative version of the Composite International Diagnostic Interview (WMH-CIDI) based on DSM-IV • 14 items (1, 2, 5, 8, 12, 16, 18, 20, 21, 24, 25, 26, 27, and 28) from the Dyadic Adjustment Scale (DAS) 	<ul style="list-style-type: none"> • 2,213 married individuals from National Comorbidity Survey Replication (NCS-R)
Whisman & Uebelacker (2006). Impairment and distress associated with relationship discord in a national sample of married or cohabiting adults	<ul style="list-style-type: none"> • Marriage • Marital discord • Psychological distress • Impairment 	Article, Empirical	<ul style="list-style-type: none"> • Investigated association between relationship discord, psychological distress, and impairment • Association between relationship discord, psychological distress, and impairment remained significant after controlling for current anxiety, mood, and substance use disorder 	<ul style="list-style-type: none"> • Quantitative • Self-report survey 	<ul style="list-style-type: none"> • National Comorbidity Survey (NCS) • Distress Index • Composite International Diagnostic Interview (CIDI) 	<ul style="list-style-type: none"> • 2,677 married or cohabiting individuals

(continued)

Authors, Year, Title	Focus	Source & Type	Key Points	Methods / Design	Measures/Data Collection	Sample
Whisman, Uebelacker, & Weinstock (2004). Psychopathology and marital satisfaction: The importance of evaluating both partners	<ul style="list-style-type: none"> • Anxiety • Depression • Marital Satisfaction • Couples 	Article, Empirical	<ul style="list-style-type: none"> • Aim of the study was to evaluate the association between both partners' level of depression and anxiety and both partners' level of marital satisfaction among married couples • Marital satisfaction was predicted by the individual's own level of anxiety and depression (actor effects) and by their spouse's level of depression only (partner effects) • No gender differences were found 	<ul style="list-style-type: none"> • Quantitative • Path analysis & hierarchical linear modeling 	<ul style="list-style-type: none"> • MMPI-2 content scales • Dyadic Adjustment Scale 	<ul style="list-style-type: none"> • 774 couples
Zaider, Heimberg, & Iida (2010). Anxiety disorders and intimate relationships : A study of daily processes in couples	<ul style="list-style-type: none"> • Anxiety disorders • Couples • Marital distress • Relationship functioning 	Article, Empirical	<ul style="list-style-type: none"> • Aim was to better understand the relationship between anxiety and quality of close relationships • Study included couples where only wives had anxiety • Significant associations were found between wives' daily anxiety and both partners' perceptions of relationship quality • Associations were moderated by anxiety-specific support 	<ul style="list-style-type: none"> • Quantitative • Self-report 	<ul style="list-style-type: none"> • Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV) • Couples Interaction Questionnaire (CIQ) • Family Accommodation Questionnaire-Modified (FAQ-M) • Patient Rejection Scale (PRS) • State-Trait Anxiety Inventory: Trait version (STAI-T) • Symptom Checklist-90 (SCL-90) • Dyadic Adjustment Scale (DAS) • Affects Balance Scale (ABS) • Relationship Quality (RQ) 	<ul style="list-style-type: none"> • 33 couples • Only women had anxiety

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APPENDIX B

IRB Approval Letter

PEPPERDINE UNIVERSITY

Graduate & Professional Schools Institutional Review Board

September 30, 2015

Xiao Shirley Chen

Protocol #: 15-09-045

Project Title: Social Support Communication Behavior as a Moderator Between Mental Health and Marital Satisfaction Among Distressed Couples

Dear Ms. Chen:

Thank you for submitting your application, *Social Support Communication Behavior as a Moderator Between Mental Health and Marital Satisfaction Among Distressed Couples*, for exempt review to Pepperdine University's Graduate and Professional Schools Institutional Review Board (GPS IRB). The IRB appreciates the work you and your faculty advisor, Dr. Eldridge, have done on the proposal. The IRB has reviewed your submitted IRB application and all ancillary materials. Upon review, the IRB has determined that the above entitled project meets the requirements for exemption under the federal regulations (45 CFR 46 - <http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.html>) that govern the protections of human subjects. Specifically, section 45 CFR 46.101(b)(2) states:

(b) Unless otherwise required by Department or Agency heads, research activities in which the only involvement of human subjects will be in one or more of the following categories are exempt from this policy:

Category (2) of 45 CFR 46.101, research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: a) Information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and b) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Your research must be conducted according to the proposal that was submitted to the IRB. If changes to the approved protocol occur, a revised protocol must be reviewed and approved by the IRB before implementation. For any proposed changes in your research protocol, please submit a **Request for Modification Form** to the GPS IRB. Because your study falls under exemption, there is no requirement for continuing IRB review of your project. Please be aware that changes to your protocol may prevent the research from qualifying for exemption from 45 CFR 46.101 and require submission of a new IRB application or other materials to the GPS IRB.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite our best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the GPS IRB as soon as possible. We will ask for a complete explanation of the event and your response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the GPS IRB and the appropriate form to be used to report this information

can be found in the *Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual* (see link to “policy material” at <http://www.pepperdine.edu/irb/graduate/>).

Please refer to the protocol number denoted above in all further communication or correspondence related to this approval. Should you have additional questions, please contact Kevin Collins, Manager of the Institutional Review Board (IRB) at gpsirb@pepperdine.edu. On behalf of the GPS IRB, I wish you success in this scholarly pursuit.

Sincerely,

A handwritten signature in blue ink, appearing to read "Judy Ho". The signature is fluid and cursive, with the first name "Judy" being more prominent than the last name "Ho".

Judy Ho, Ph. D., ABPP, CFMHE
Chair, Graduate and Professional Schools IRB
Pepperdine University

cc: Dr. Lee Kats, Vice Provost for Research and Strategic Initiatives
Mr. Brett Leach, Regulatory Affairs Specialist
Dr. Kathleen Eldridge, Faculty Advisor