THE SPILLOVER AND CROSSOVER EFFECTS OF SECONDARY TRAUMATIC STRESS:

A PROCESS MODEL

by

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(Under the Direction of Lillian T. Eby)

ABSTRACT

This study proposes and examines a process model suggesting downstream effects of frequency of patient trauma on substance abuse counselors and their partners. In addition, this study evaluates the moderating effects that the counselor's propensity to ruminate and supervisor support may have on these relationships. Using an ordinary least squares (OLS) regression-based path analytic framework, results suggest that frequency of patient trauma is related to secondary traumatic stress, which in turn, predicts counselor work interference with nonwork and perceived health, but not partner depressed mood or perceived health. Both the counselor's propensity to ruminate and supervisor support are examined as potential moderators. The relationship between frequency of patient trauma and secondary traumatic stress is stronger for counselors higher in rumination propensity. Supervisor support is not a buffer the in relationship between frequency of patient trauma and secondary traumatic stress.

INDEX WORDS: Trauma, Secondary Traumatic Stress, Work Interference with Nonwork, Perceived Health, Depressed Mood, Rumination, Supervisor Support.

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CHAPTER 1

INTRODUCTION

In 2010, 22.1 million individuals were classified with substance dependence or abuse and this number has remained stable over the past decade (USDHHS, 2011). For those seeking treatment, substance abuse counselors are the frontline professionals who help patients go on to lead healthier, more productive lives. However, counselors are often ill-prepared for the challenges associated with treating substance dependent patients (Olmstead, Abraham, Martino, & Roman, 2012). One particular challenge is that more than half of patients enter treatment with a history of traumatic events such as violence or sexual abuse (Pirard, Sharon, Kang, Angarita, & Gastfriend, 2005). As such, counselors are often exposed to vivid accounts of trauma experiences by their patients through the treatment process. As a result of this secondary exposure to traumatic events, counselors often exhibit at least some of the symptoms of secondary traumatic stress (STS; Bride, Hatcher, & Smith, 2009). While reactions from secondary trauma vary, research has shown that 15% of helping professionals met the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; APA, 2000) criteria for posttraumatic stress disorder (PTSD; Bride, 2007). Further, STS has been linked to negative outcomes for helping professions such as poor professional judgments (Rudolph, Stamm, & Stamm, 1997), which can impact the quality of care for patients.

Although informative, the existing literature on STS is limited in several ways. First, much of the existing research has been descriptive in nature. This has led to a rich understanding of STS as an important phenomenon, but is limited in identifying antecedents and consequences.

Second, the empirical literature that does exist focuses exclusively on the individual helping professional. This focus has enabled us to conclude with reasonable certainty that there is a relationship between exposure to patient trauma and STS (Bride, 2004), but falls short of predicting downstream effects of STS, such as well-being outcomes for the helping professional and his or her partner or spouse. Third, STS research does not propose and test conceptual models that allow for the identification of moderating and mediating mechanisms. The purpose of the present study is to extend existing research by proposing and empirically evaluating a conceptual model that suggests the process by which experience with patient trauma has downstream effects on counselors and their partners, and to identify buffering mechanisms that might help us understand how to ameliorate the negative effects.

As shown in Figure 1, the conceptual model illustrates the process by which patient trauma is expected to predict STS, which in turn, relates to individual outcomes for the counselor and his or her partner. Based on previous empirical research, it is expected that experience with patient trauma relates to counselor's STS (Bride, 2004; Bride, Hatcher, & Humble, 2009). Next, I propose that the STS a counselor experiences may spillover into his or her nonwork domain. Spillover simply describes the intraindividual process when one domain impacts another domain in the individual's life (Crouter, 1984; Staines, 1980). Despite the wealth of evidence that spillover is a real phenomenon from the work-family literature (Ford, Heinen, & Langkamer, 2007), STS research has not examined this relationship. Additionally, I propose that the STS a counselor experiences may crossover to affect his or her partner. Crossover is the interindividual process when stress in one person transfers to another person (Westman, 2001). Again, crossover effects have been established in the work-family literature (Allen, 2012), but have not been examined as a result of STS. Finally, I propose that there are two conditions which may

strengthen or weaken these relationships: the counselor's propensity to ruminate and supervisor support, respectively. To summarize, the rationale of this model is that by having these experiences of patient trauma, we will see both spillover and crossover effects. The model is based on the well-established notion that patient trauma is associated with STS (Bride, 2004; Bride et al., 2009), but it adds a diverse array of outcomes that have not been examined in the previous literature that represent both crossover and spillover outcomes.

CHAPTER 2

THEORETICAL FRAMEWORK

The conceptual model shown in Figure 1 illustrates two processes by which STS is expected to relate to counselor and partner outcomes. The first process is an intraindividual process referred to as spillover. Spillover theory posits that experiences in one domain (e.g., work) can spillover into another domain (e.g., nonwork; Crouter, 1984; Staines, 1980). Spillover is the basis for modern understanding of work-nonwork conflict, providing evidence that strain in one domain predicts strain in the other domain (Ford et al., 2007). Specifically, meta-analytic findings suggest that strain originating at work has a strong effect on people's satisfaction through spillover into the nonwork domain, or work interfering with nonwork (Ford et al., 2007). Proposed linkages from the work domain to the nonwork domain for counselors will be guided by spillover theory.

In addition to spillover across domains for the counselor, there may also be transfer across individuals. This second process is illustrated in Figure 1 and occurs when counselor STS predicts his or her partner's outcomes. This interindividual process is referred to as crossover. The concept of crossover stress has investigated stress transferring from one person to another (Westman, 2001). For example, a classic study on crossover effects found that the stress encountered by police officers at work affected their spouses at home (Jackson & Maslach, 1982). Traditionally, role theory served as the framework for crossover effects, suggesting that expectations of roles from the individual, other people, and contextual factors can result in role conflict, role overload, and role ambiguity as the factors interact in a series of role episodes

(Westman, 2001). Role theory has advanced crossover theories by explaining *why* stress would crossover to one person to another, but it has failed to demonstrate *how* stress would crossover from one person to another. For example, role theory would propose that a mother returning to work may feel conflict negotiating her role as a mother and her role as an employee, which could represent a source of stress. Although this is a valid example of why someone occupying dual roles would experience stress, it does not explain how her stress may affect the stress of someone else, such as her husband. Emotional contagion theory (Hatfield, Cacioppo, & Rapson, 1994) provides an explanatory mechanism to understand how the stress experienced by an individual could transfer to another individual.

Emotional contagion theory posits that people tend to "catch" the emotions of others through a continuous and automatic feedback mechanism designed to "mimic and synchronize their movements with the facial expressions, voices, postures, movements, and instrumental behaviors of others" (Hatfield et al., 1994). Recently, Bovin and Marx (2011) summarized the four primary emotions associated with exposure to a potentially traumatic stressor as fear, anger, sadness, and disgust. Since these emotions are likely to be recalled when describing traumatic events, the counselor is at risk to "catch" the patient's negative emotions. Similarly to counselors "catching" negative emotions from their patients, partners may "catch" negative emotions from the counselor. Therefore, emotional contagion theory will serve as a framework for crossover effects proposed from patient to counselor, and counselor to partner.

While these theories describe different relationships, it should be noted that they have been integrated before, but around the mechanism of stress contagion. The first study to empirically evaluate both stress spillover (contagion of stress from the work or home domain to the other domain) and stress crossover (contagion of stress by one spouse in a particular domain

affecting the other spouse in the other domain) found initial evidence to support both hypotheses (Bolger, DeLongis, Kessler, & Wethington, 1989).

CHAPTER 3

HYPOTHESIS DEVELOPMENT

Patient trauma

The traumatic events that patients have endured before and during treatment impact their lives. In fact, the initial use of substances may have been a way for the patient to self-medicate to cope with the trauma (Khantzian, 1997). Previous research estimates that patients entering substance abuse treatment programs have higher lifetime prevalence rates of trauma exposure (60 to 90 percent; Cohen & Densen-Gerber, 1982; Dansky et al., 1996; Dansky, Roitzsch, Brady, & Saladin, 1997; Yandow, 1989) than the general population (40 to 81 percent; Breslau, Davis, Peterson, & Schultz, 1997; Kessler, Sonnege, Bromet, & Nelson, 1995; Stein, Walker, Hazen, & Forde, 1997). These traumatic experiences are often uncovered during the treatment process, and research suggests that about three quarters of substance abuse counselors specifically assess their patients for some type of trauma (Bride et al., 2009). The types of trauma commonly assessed include sexual and physical abuse, violent crime, war and disaster (Bride et al., 2009). Exposure to patient trauma has been assessed by proportion of traumatized patients in the current case load (Bride et al., 2009), proportion of time spent with traumatized patients, and length of experience with traumatized patients (Bride, 2004).

While trauma certainly impacts the patient, the patient's trauma may also influence the counselor. The counselor-patient relationship is referred to as a therapeutic alliance, and developed for the sole purpose of ending or reducing substance use (Martin, Garske, & Davis, 2000). A high quality therapeutic alliance is characterized by positive exchanges that result in a

professional bond (Bordin, 1979). Counselors who demonstrate empathetic concern for patients are invested in these relationships, and as suggested by vicarious trauma, are likely to be impacted by patients' accounts of trauma (McCann & Pearlman, 1990). Further, research suggests that professionals who experience the trauma of others vicariously may exhibit symptoms similar to the traumatized individual (Bride, 2004).

Secondary Traumatic Stress (STS)

Secondary traumatic stress (STS) refers to the stress associated with having contact with a traumatized individual (Bride, Robinson, & Figley, 2004; Bride, 2007; Newell & MacNeil, 2010). Specifically, it is defined as "the natural, consequent behaviors and emotions resulting from knowledge about a traumatizing event experienced by a significant other. It is the stress resulting from helping or wanting to help a traumatized or suffering person" (p. 10; Figley, 1999). Since the negative effects of secondary exposure to a traumatic event are nearly identical to those of primary exposure, STS is most appropriately measured by assessing the criteria for PTSD (Bride et al., 2004).

In addition, since counselors engaging in high quality therapeutic alliances with traumatized patients may be impacted by the patients' trauma, it is reasonable to expect that they may suffer similar outcomes. This is based on the idea that counselors are affected by the negative emotion they "caught" from exposure to patients' accounts of trauma, due to the emotional contagion process. Based on the fact that a high quality therapeutic alliance is based on an empathetic bond, crossover and emotional contagion theory suggest that the trauma disclosed by the patient that elicits negative emotions (e.g., fear, anger, sadness, and disgust; Bovin & Marx, 2011) may transfer to the counselor. If the counselor "catches" these negative emotions they may experience STS. Thus, I hypothesize that:

Hypothesis 1: Frequency of patient trauma is positively related to counselor STS.

Outcomes

Again, referring to Figure 1, in addition to replicating the established relationship between patient trauma and STS, the conceptual model explicates possible downstream effects it has on the counselor and his or her partner. As such, this study proposes that STS is the mechanism by which frequency of patient trauma relates to counselor and partner outcomes. While no research to date has investigated STS as a mediating mechanism between patient trauma and secondary outcomes such as perceived health and nonwork conflict, this prediction is consistent with the broader literature on stress and work-nonwork interface, based on crossover and spillover effects.

As shown in Figure 1, I propose STS experienced at work will spillover to affect counselors in their nonwork lives, and this may manifest in several ways. First, counselor STS may spillover and predict work interference with nonwork, meaning the stress (i.e., STS) occurring in the work domain becomes a source of strain in the nonwork domain. Using research and theory on spillover effects from work to nonwork (Byron, 2005; Ford et al., 2007), I hypothesize:

Hypothesis 2: The relationship between frequency of patient trauma and counselor work interfering with nonwork is fully mediated by STS.

Counselor STS may also relate to his or her perceived health. Recent longitudinal research concludes that strain-based work interference with nonwork is a precursor of health impairment (van Hooff et al., 2005). Additionally, there are some parallels that can be drawn from the PTSD literature. For example, research has demonstrated that PTSD symptom severity was negatively related to physical health in a sample of Iraq and Afghanistan War veterans

(Jakupcak, Luterek, Hunt, Conybeare, & McFall, 2008). While substance abuse counselors are notably different than war veterans, and are not experiencing trauma directly, the conceptual overlap between PTSD and STS suggests similar effects. Since STS symptoms are intrusive and arousing, STS may spillover into the counselor's personal life. Moreover, based on the literature reviewed linking PTSD to health and the tenets of spillover theory, I hypothesize:

> *Hypothesis 3: The relationship between frequency of patient trauma and perceived*
>
> *counselor health is fully mediated by STS.*

In addition to having a professional empathetic relationship with the patient, the counselor is also likely to have empathetic relationships outside of work. One of the most salient empathetic relationships outside the workplace is a romantic relationship. Given the potential impact patient trauma may have on the counselor, the relationship between counselors and their partners may be affected as well. Crossover stress is thought to occur in an empathetic relationship between two people when one person's stress is communicated to the partner, and then felt as partner's own stress (Westman, 2001). As shown in Figure 1, it is proposed that counselor stress (i.e., STS) may crossover to his or her partner in two ways. First, the negative emotions the counselor may display as a result of his or her STS (e.g., fear, anger, sadness, disgust) may be transferred to the partner via emotional contagion. These negative emotions the partner "caught" may in turn predict his or her own depressed mood.

Moreover, a review of the relationship between trauma, PTSD, and physical health suggests that PTSD is an important mediator for the trauma to health outcomes relationship (Ford et al., 2004; Friedman & Schnurr, 2005). Similarly, studies have shown that the trauma experienced by soldiers with PTSD also affects their spouses. For example, spouses of Vietnam war veterans with PTSD reported decreased mental health and substance abuse compared to

spouses of veterans without PTSD (Jordan et al., 1992). Likewise, spouses of soldiers from Operation Iraqi Freedom and Operation Enduring Freedom reported decreased quality of life, depression, and anxiety when they perceived greater burden associated with soldiers' psychological distress symptoms (Caska & Renshaw, 2011).

In addition to the relationship between STS and counselor health, STS may crossover to his or her partner. Based on initial evidence that PTSD is negatively related to spouse physical and psychological health, and crossover theory, I hypothesize:

> *Hypothesis 4: The relationship between frequency of patient trauma and partner depressed mood is fully mediated by STS.*
>
> *Hypothesis 5: The relationship between frequency of patient trauma and perceived partner health is fully mediated by STS.*

Moderators

This study also answers the call for research on secondary traumatization to examine the possible interaction between various risk and protective factors (Bride, 2004). This is accomplished by examining a potential risk factor (counselor rumination propensity) and a potential protective factor (counselor perception of supervisor support) on the proposed relationship between patient trauma and STS, shown in Figure 1.

Rumination propensity. There may be conditions under which patient trauma is more strongly related to STS. One particularly relevant risk factor that may exacerbate the relationship between patient trauma and STS is the counselor's tendency to ruminate. Rumination is defined as "a mode of responding to distress that involves repetitively and passively focusing on symptoms of distress and on the possible causes and consequences of these symptoms" (p. 400; Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008), and is related to stress

outcomes such as anxiety, depression, eating, and substance psychopathologies (Aldao, Nolen-Hoeksema, & Schweizer, 2010).

Based on response styles theory (Nolen-Hoeksema, 1991), rumination has been thought to exacerbate and prolong stress through three mechanisms. First, rumination enhances the effects of depressed mood on thinking; this means that individuals will focus on negative thoughts activated by their depressed mood to make sense of their current situation (Nolen-Hoeksema et al., 2008). Second, rumination interferes with effective problem solving since the individual is focused on negative thoughts and relies on these negative thoughts to inform decisions (Nolen-Hoeksema, 1991). Finally, rumination interferes with constructive behavior such as participating in mood-alleviating activities by reducing an individual's motivation and initiative (Nolen-Hoeksema et al., 2008).

Rumination is thought to be prompted by perceived threats, losses, or injustices (Trapnell & Campbell, 1999). Therefore, it follows that someone who ruminates and is exposed to patient trauma, which often involves threat (e.g., mortality or personal safety), loss (e.g., death or losing children), or injustice (e.g., becoming homeless), would be especially burdened by being exposed to patient trauma. Based on these findings, I suggest that counselor rumination will exacerbate the relationship between frequency of patient trauma and counselor reported STS. Thus, I hypothesize:

Hypothesis 6: The relationship between frequency of patient trauma and STS is moderated by rumination, such that the positive relationship is stronger at higher levels of rumination.

Hypothesis 7: The conditional effect between frequency of patient trauma and counselor work interfering with nonwork through STS will be stronger at higher levels of rumination.

Hypothesis 8: The conditional effect between frequency of patient trauma and perceived counselor health through STS will be stronger at higher levels of rumination.

Hypothesis 9: The conditional effect between frequency of patient trauma and partner depressed mood through STS will be stronger at higher levels of rumination.

Hypothesis 10: The conditional effect between frequency of patient trauma and perceived partner health through STS will be stronger at higher levels of rumination.

Supervisor support. In addition to conditions that may exacerbate the relationship between patient trauma and STS, there may also be conditions that buffer the relationship. One condition that could serve as a protective factor to reduce counselor STS reported as a result of patient trauma is supervisor support. Supervisor support is a well-established moderator of other stress-strain relationships (Viswesvaran, Sanchez, & Fisher, 1999), but has not been empirically investigated in the secondary traumatic literature. However, literature on secondary traumatization has encouraged supportive supervision to combat STS and has even provided guidelines for trauma-sensitive supervision (Sommer, 2008). A qualitative analysis of trauma-sensitive supervision interviews from counselors identified elements of helpful supervision. This includes providing an opportunity to share feelings about work as well as personal feelings, providing validation of the stressful nature of the job, and creating a mutual, collaborative approach to supervision (Sommer & Cox, 2005). Interestingly, these important elements map on to the dimensions tapped by psychosocial mentoring (Kram, 1985). For example, encouraging counselors to share their feelings about work is characteristic to the counseling dimension,

encouraging counselors to share their personal feelings is an opportunity to confide in the supervisor, which is characteristic of the friendship dimension, and validating counselor experiences on the job is a way to demonstrate acceptance and confirmation. Therefore, supervisor support may be a relevant protective factor for counselors that may buffer the positive patient trauma to STS relationship.

Additionally, meta-analytic work suggests that psychosocial support is related to stress outcomes (e.g, strain; Allen et al., 2004; Eby et al., 2012). In the context of professionals exposed to secondary trauma, increased supervision from experienced trauma specialists is a strategy that has been suggested to ameliorate the effects of STS due to patient trauma, but has never been examined empirically. Taking into consideration both the quantitative evidence linking supervisor support to reduced strain, and the qualitative reports of the buffering effect supervisor support should have on STS, I hypothesize:

> *Hypothesis 11: The relationship between frequency of patient trauma and STS is moderated by supervisor support, such that the positive relationship is the weaker at higher levels of supervisor support.*
>
> *Hypothesis 12: The conditional effect between frequency of patient trauma and counselor work interfering with nonwork through STS will be weaker at higher levels of supervisor support.*
>
> *Hypothesis 13: The conditional effect between frequency of patient trauma and perceived counselor health through STS will be weaker at higher levels of supervisor support.*
>
> *Hypothesis 14: The conditional effect between frequency of patient trauma and partner depressed mood through STS will be weaker at higher levels of supervisor support.*

Hypothesis 15: The conditional effect between frequency of patient trauma and perceived partner health through STS will be weaker at higher levels of supervisor support.

CHAPTER 4

METHODS

Procedure

This study is part of a larger National Institute of Occupational Safety and Health and Centers for Disease Control and Prevention (NIOSH/CDC)-funded research project aimed at studying the effects of client trauma on substance abuse counselors and their partners. Initially, 41 program administrators employed in community treatment organizations throughout the United States provided contact information for treatment counselors who might be eligible to participate. Counselors were emailed a description of the study, and if they were interested, they provided an email address for their partner to qualify for the study. When the partner email address was received, and the partner expressed interest in participating, both individuals were emailed separate links to the online consent and survey. To qualify, counselors were required to currently: a) be employed as a substance abuse counselor, b) be in a committed relationship with a spouse, partner, or girlfriend/boyfriend who works outside the home (part-time or full-time) who is interested in participating in the study, and c) provide their own email address and their partner's email address. To be eligible to participate, partners must currently: a) work outside the home (part-time or full-time), b) be in a committed relationship with a spouse, partner, or girlfriend/boyfriend who works as a substance abuse counselor, and c) respond to the email indicating interest for participation.

Data were collected from a voluntary web-based, confidential survey through Qualtrics online survey software. Links to the survey were sent to the email addresses provided by eligible

counselors and partners, which included an online consent form with terms that had to be accepted by the participant before the survey could be administered. Participants who declined the terms of the consent form could not access the survey. The 30 minute, web-based survey was to be completed on the participants' own time, and both the counselor and his or her partner were paid $20. The research protocol was approved by the institutional review board at the University of Georgia.

Measures

  Frequency of patient trauma. The frequency of patient trauma over the counselor's career was examined based on preliminary evidence that this operationalization has the greatest predictive power of STS compared to the overall amount of patient trauma encountered over the counselor's career and the proportion of current patient trauma in the counselor's caseload (Kinkade & Eby, 2013). The measure of frequency of patient trauma was developed for this study. It was based on interviews with seven substance abuse counselors. The interview questions were designed to explore the experience of client trauma among counselors and to understand the potential impact of patient trauma on counselors and their families. A content analysis of the qualitative interview data revealed that patients reveal a wide range of traumatic experiences to their counselors. All types of client trauma mentioned in the interviews were compiled to create a measure of 25 patient trauma, plus an "other" fill-in category. Participants were asked, "For each type specified, over the course of your career, how frequently has this type of trauma been disclosed to you by clients?" Sample types include sexual abuse as a child, sexual abuse as an adult, domestic violence, and becoming homeless. Frequency was measured on a 5-point scale, from "very rarely" to "very frequently", where higher scores indicate greater

frequency. A composite was created to indicate the frequency of patient trauma experienced over the course of the career. Coefficient alpha for frequency of patient trauma was .90.

Secondary traumatic stress (STS). Secondary traumatic stress was measured in counselors using the 17-item secondary traumatic stress scale (STSS) developed by Bride, Robinson, Yegidis, and Figley (2003). Each item was designed to tap corresponding criteria for PTSD (Bride et al., 2003). Sample items are "I felt emotionally numb" and "It seemed as if I was reliving the trauma(s) experienced by my patient(s)". Seventeen items on this scale were measured on a 5-point frequency scale, from "never" to "very often" in the past seven days, where higher scores indicate greater frequency. Coefficient alpha for STS was .91.

Perceived health. Perceived health was measured using the 4-item measure developed by Vinokur, Pierce, Lewandowski-Romps, Hobfoll, and Galea (2011). A sample item is "To what extent do you have any particular health problems?". Four items on this scale were measured on a 5-point Likert-type scale, from "never/no extent" to "a very great extent", with higher scores indicating better perceived health. Counselors and partners both responded to questions regarding perceived health. Coefficients alpha for perceived health reported by both counselors and partners were .84 and .81, respectively.

Depressed mood. Depressed mood was measured in partners using the 10-item measure of developed by Quinn and Shepard (1974). A sample item is "I often feel downhearted or blue". Ten items on this scale were measured on a 5-point Likert-type scale, with higher scores indicating greater depressed mood. Coefficient alpha for depressed mood was .83.

Work interfering with nonwork (WIN). Work interfering with nonwork was measured in counselors using the 3-item strain-based measure developed by Carlson, Kacmar, and Williams (2000). A sample item is "When I get home from work I am often too frazzled to

participation nonwork activities." Three items on this scale were measured on a 5-point Likert-type scale, with higher scores indicating greater work interference with nonwork. Coefficient alpha for WIN was .89.

Rumination propensity. Rumination propensity was measured in counselors using the 12-item measure of developed by Trapnell and Campbell (1999). A sample item is "My attention is often focused on aspects of myself I wish I'd stop thinking about." Twelve items on this scale were measured on a 5-point Likert-type scale, with higher scores indicating more rumination. Coefficient alpha for rumination propensity was .91.

Supervisor support. Supervisor support was measured from the counselor perspective using the 12-item measure of psychosocial support developed by Ragins and McFarlin (1990). A sample item is "My clinical supervisor is someone I can confide in". Twelve items on this scale were measured on a 5-point Likert-type scale, with higher scores indicating greater support. Coefficient alpha for supervisor support was .95.

Control variable. The impact of personal trauma could possibly result in symptoms that would overlap with the symptoms of STS. Therefore, zero-order correlations between the impact of personal traumatic history and each study variable were examined. Impact of personal traumatic history was measured by asking counselors to indicate the types of personal trauma they have encountered using the same list of trauma types as identified in the frequency of patient trauma measure, and then for each type indicated, rate "To what extent does the traumatic event currently impact you?" on a 5-point scale, from "not at all" to "a great deal". A composite was created to indicate the current impact of personal trauma. Coefficient alpha for impact of personal trauma was .66. Impact of personal traumatic history was significantly related to STS,

partner perceived health, and propensity to ruminate, so impact of personal traumatic history will

serve as a control variable in the analyses.

CHAPTER 5

RESULTS

Variable means, standard deviations, coefficients alpha, and zero-order correlations are reported in Table 1. As anticipated, frequency of patient trauma was positively related to STS (β =.24, p<.05), providing support for Hypothesis 1 (see Table 2).

Hypotheses 2-5 were tested using an ordinary least squares (OLS) regression-based path analytic framework. Specifically, the indirect effect of frequency of patient trauma on each dependent variable through STS was assessed. Following recent recommendations, statistical significance determinations were based on asymmetric bootstrap confidence intervals that are appropriate for the nonnormality of indirect effect sampling distributions (Hayes, 2012). The advantages of this approach include no required assumptions of the shape of the sampling distribution and no particular formula for the standard error (Preacher, Rucker, & Hayes, 2007). Results are presented in Tables 2-5.

Hypothesis 2 and Hypothesis 3 describe spillover effects. As shown in Table 2, Hypothesis 2 was supported; the indirect effect of frequency of patient trauma on counselor work interfering with nonwork through STS was significant (β=.20, 95% CI [.05, .44]). Hypothesis 3 was also supported; the indirect effect of frequency of patient trauma on counselor perceived health through STS was significant (β=-.07, 95% CI [-.18, -.01]; see Table 3). Hypothesis 4 and Hypothesis 5 concerned crossover effects, and were not supported (see Table 4 and 5, respectively). Specifically, Hypothesis 4 predicted that frequency of patient trauma and partner depressed mood would be mediated by STS, but the indirect effect was not significant (β=.03,

95% CI [-.01, .11]). Hypothesis 5 predicted that frequency of patient trauma and partner perceived health would be mediated by STS, but the indirect effect was not significant (β=-.05, 95% CI [-.16, .01]).

Hypotheses 6-15 were also tested using an ordinary least squares (OLS) regression-based path analytic framework. I combined mediation and moderation analyses (moderated mediation) in a first stage moderation model (Edwards & Lambert, 2007), or a conditional process model (Hayes, 2012). Hayes (2012) describes the conditional process model as a model that "allows the direct and/or indirect effects of an independent variable X on a dependent variable Y through one or more mediators (M) to be moderated" (p. 8). This approach allows the researcher to interpret the conditional indirect effect as the independent variable's effect on the dependent variable through the mediator, contingent on the value of the moderator (Hayes, 2012). To accomplish this, I tested whether the indirect effects of exposure to patient trauma on each outcome through STS depend on either rumination propensity or supervisor support.

Figure 2 illustrates the statistical model, which was examined separately for each dependent variable with each moderator (i.e., rumination propensity and supervisor support). Specifically, I tested the conditional indirect effect for each dependent variable for significance. The effects can be represented by the following equations:

$$M = i_M + a_1 X + a_2 W + a_3 XW + e_M \tag{1}$$

$$Y = i_Y + c'_1 X + b_1 M + e_Y \tag{2}$$

Coefficients i_M and i_Y are intercept terms, a_1 represents the strength of the path between patient trauma (X) and STS (M), a_2 represents the strength of the path between the moderator (W) and STS, a_3 represents the strength of the path between the cross-product of patient trauma and the moderator on STS (XW), c'_1 represents the strength of the path between X and Y, b_1 represents

the strength of the path between M and Y while controlling for X, and e_M and e_Y are error terms (Hayes, 2012). After grouping and factoring out X in Equation 1, the conditional effect of a_1+a_3W results, and the effect of M on Y is b_1 from Equation 2; the product of these effects is the conditional indirect effect, or $(a_1+a_3W) b_1$ (Hayes, 2012; Preacher, Rucker, & Hayes, 2007). The integration of moderation and mediation in this way means that there is no interpretable single indirect effect of X on Y through M because X's indirect effect is a function of W (Hayes, 2012).

Hypotheses 6-10 focused on counselor propensity to ruminate as a moderator. Results are presented in Tables 6-10. Hypothesis 6 predicted that the relationship between frequency of patient trauma and STS would be stronger at higher levels of rumination, and was supported ($\Delta F=4.34$, $p<.05$; see Table 6). As shown in Figure 3, the plot of the simple slopes illustrates that at lower levels of rumination, the relationship between frequency of patient trauma and STS is unchanged, but at mean and higher levels of rumination, the relationship is exacerbated. In addition, both spillover hypotheses were supported. Hypothesis 7 stated the conditional effect between frequency of patient trauma and work interfering with nonwork through STS would be stronger at higher levels of rumination. Hypothesis 8 stated the conditional effect between frequency of patient trauma and counselor perceived health through STS would be stronger at higher levels of rumination. Following the pattern of results from Hypothesis 6, the conditional effects were significant at mean and high levels of rumination, but not low levels of rumination for both Hypothesis 7 and Hypothesis 8 (see Tables 7 and 8, respectively). The crossover hypotheses were not supported. Hypothesis 9 concerned the conditional effect between frequency of patient trauma and partner depressed mood and Hypothesis 10 with partner perceived health moderated by rumination. These results are shown in Tables 9 and 10).

Hypotheses 11-15 focused on supervisor support as a moderator. These hypotheses mirrored Hypotheses 6-10, only differing by the moderating variable. However, none of these hypotheses were supported. Results are presented in Tables 11-15.

CHAPTER 6

GENERAL DISCUSSION

This study proposed and examined a process model suggesting downstream effects of frequency of patient trauma on counselors and their partners. In addition, this study evaluated the moderating effects that the counselor's propensity to ruminate and supervisor support may have on these relationships.

Several conclusions may be drawn from this study's findings. First, this study provides empirical evidence of the positive relationship between patient trauma and STS, even after controlling for the counselor's personal traumatic history. Second, this study demonstrates how the counselor may experience downstream effects from frequency of patient trauma that may spillover into their work interference with nonwork and perceived health. Third, this study identified a moderating mechanism (e.g., propensity to ruminate) that may intensify the conditional spillover effects.

Spillover versus Crossover Effects

The findings of this study empirically confirm what the descriptive literature has previously found: STS is a real phenomenon that is associated with counselors' exposure to patient trauma. This study extends the existing literature by showing how frequency of patient trauma can affect counselor STS, which in turn, may affect the counselor outside of their workplace. Specifically, these findings extend the work-nonwork spillover literature in several ways. First, consistent with meta-analytic findings, stressors on the job are strongly associated with WIN (Byron, 2005). However, job stressors are usually conceptualized as broad role-

related constructs (Ganster & Schaubroeck, 1991). This study analyzed a specific job stressor that is salient for the population (i.e., substance abuse counselors), which moves beyond general role stress (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964). Since not all job stressors fall into the broad categories of role overload, role ambiguity, or role conflict, this study contributes to the literature by expanding empirical evaluation of stressors that may spillover to affect individuals outside of the workplace. In addition to finding STS is related to WIN, this study found that it is also associated with physical health. The literature on the relationship between job stressors and physical health has remained largely inconclusive (Danna & Griffin, 1999; Ganster & Schaubroeck, 1991), even though there is convincing evidence that stress in general is related to illness symptomology and use of health services (Cohen & Williamson, 1991). This study contributes to the literature by demonstrating the process by which physical health and WIN may be related to exposure to a specific job stressor (e.g., frequency of patient trauma), mediated by resulting stress (e.g., STS).

While this study found strong support for the spillover effects in the process model, no support was found for the crossover effects. At first glance, these results are encouraging, since they suggest that the STS experienced by counselors is not transferring over to affect their partners. However, there may be several alternate explanations for these findings. First, it is possible that the mechanism by which the partner is affected was not measured. In a review of the crossover research, in addition to finding support for crossover stress affecting partner physical and psychological well-being, studies have found support for crossover stress affecting partner stress, affect at home, quality of life, and burnout, which were not measured in the present study (Westman, 2001). It is certainly plausible that counselor STS is related to any of the outcomes mentioned above, which may then be related to physical and psychological well-

being. For example, perhaps counselor STS is related to partner stress, which is then associated with partner well-being. In addition, such a relationship may also be moderated by partner individual differences, such as propensity to ruminate.

Second, it is possible that there was not enough power to detect a relationship that is likely weaker in partners than it is for counselors due to the more proximal nature of spillover processes compared to the more distal nature of crossover processes. If this is in fact the case, a power analysis reveals that even an anticipated effect size 0.05 smaller than the counselor effect size observed (0.15) would require a minimum of 12 more participants to detect the relationship with a desired statistical power level of 0.8 and a probability level of 0.05 (Soper, 2013).

Third, perhaps it is the outcomes of spillover that may crossover to affect partner outcomes. The crossover literature suggests the process may be modeled as a direct process, an indirect process, or a spurious effect caused by common stressors (Westman, 2001). The present study utilized emotional contagion theory to model crossover as a direct process. However, it is possible that crossover may be more appropriately modeled as an indirect process. The indirect process of crossover suggests that one person's outcomes of stress, such as work-nonwork conflict or well-being, then effect the other person's stress, which results in their own outcomes of stress. It has also been suggested that these relationships may be moderated or mediated by factors such as coping strategies, social support, social undermining, communication, and individual characteristics (Westman, 2001). In the present study, it is unlikely that a spurious effect plays a role since no crossover effects were found.

Additionally, it may be that while spillover may occur immediately, crossover may take more time, requiring a longitudinal design. While the results of this study may be good news for

the partners of substance abuse counselors, future research should investigate alternative models of this complex crossover phenomenon before conclusions are drawn.

Rumination versus Supervisor Support

As expected, the relationship between frequency of patient trauma and STS was stronger for counselors higher in rumination propensity. The results suggest that not only do ruminating counselors experience the most STS as a result of patient trauma, but as a consequence of STS, they also suffer the most WIN and perceive the lowest health. These findings are not surprising since the literature on rumination has found associations with stress-related outcomes that indicate poor well-being (Aldao et al., 2010) and the literature on stress similar to STS (i.e., PTSD) has found associations with health (Ford et al., 2004; Friedman & Schnurr, 2005; Jakupcak et al., 2008). The present study's findings contribute to these bodies of literature by demonstrating that the multiplicative effect of exposure to stress (e.g., patient trauma) and the propensity to ruminate is associated with more STS, and worse well-being outside of work.

Counter to prediction, the relationship between frequency of patient trauma and STS, and downstream effects, was unaffected by supportive supervision. One possible explanation for the null findings for supervisor support may be that while supportive supervision is beneficial in general, it may not specifically target the unique issues faced by counselors who are exposed to patient trauma and experience STS. It is certainly feasible that while a supervisor may be knowledgeable and helpful in guiding counselors in substance abuse work, they may lack adequate knowledge of STS to help counselors navigate through this unique job stressor. Future research should investigate supportive supervision in terms of trauma-sensitive supervision; perhaps rather than assessing supportive supervision in general, the measure can be modified to assess supervision that is supportive specifically to those counselors who are exposed to patient

trauma. For example, perhaps the item, "My clinical supervisor is someone I can confide in" could be modified to "My clinical supervisor is someone I can confide in about my patients' traumatic experiences."

In addition, it is possible that other supportive relationships may be helpful in buffering the negative effects of patient trauma. For example, research has suggested social support from coworkers as well as supervisors buffers the job stress-strain relationship (Karasek, Triantis, & Chaudhry, 1982). Further, as recent review of the buffering role of social support on the job demand-control model and psychological well-being concluded that there is more evidence for a buffering effect than not, and applying the matching principle (e.g., the type of social support matches the type of demands and control on the job) to social support buffering research may lead to more support of this model (Hausser, Mojzisch, Niesel, & Schulz-Hardt, 2010). Another type of social support may come from the partner. In research focusing on crossover stress processes in married couples, results suggest that spousal stress may crossover to affect marital satisfaction, and the effects are moderated by different mechanisms based on gender (Neff & Karney, 2007). A review of the buffering effect of social support on the stress and well-being relationship suggests that perceived emotional support from a partner is associated with better psychological and physical health and usually buffers the negative relationship between chronic stress and well-being (Thoits, 1995).

CHAPTER 7

THEORETICAL IMPLICATIONS

The findings of this study offer several implications. First, as mentioned previously, this study expands the scope of STS research to include downstream effects. Nevertheless, there are likely other outcomes that may be impacted by STS that were not examined. Future research should consider other outcomes that may help inform spillover and crossover theories. For example, burnout has been found to crossover from one partner to another in married couples (Westman & Etzion, 1995), and is especially relevant to the substance abuse profession. In addition to traditional strain variables (e.g., psychological and physical symptoms, burnout, depression), a meta-analysis found that job stressors predicted job satisfaction, commitment, turnover intentions, actual turnover, and withdrawal behavior (Podsakoff, LePine, & LePine, 2007). While these outcomes represent stress spillover, it is reasonable to expect some of them may crossover to affect the partner similarly to traditional strain variables. Research looking at how work-related strain can crossover to affect partners' work-related strain has been explored in the context of work-family conflict (Westman & Etzion, 2005), but is still in its infancy. This body of literature could be expanded by including the study of additional work and nonwork outcomes for both partners.

Second, it is important to consider moderating mechanisms of stress processes and outcomes. The results suggest that individual differences affect the relationships proposed in the process model for counselors, but external resources, such as supervisor support, do not. This study suggests that calls for increasing supportive supervision to combat the negative

consequences of working with traumatized individuals (Sommer, 2008) may not yield desired results. Future research should investigate additional moderating mechanisms to inform our understanding of the patient trauma-STS relationship and provide possible research-based recommendations to counter the effects.

Recently, crossover research has contributed to the work-family conflict literature by demonstrating the bidirectional relationship between souses' work-family conflict on their own work-family conflict as well as spouses' family-work conflict on their own family-work conflict after controlling for number of children and personal job and family stressors (Westman & Etzion, 2005). This study extends the literature by considering other important outcomes in the partner's nonwork domain (e.g., psychological and physical well-being). Perhaps future research could benefit from combining the two models, so that partner outcomes could be assessed as a result of bidirectional relationships.

CHAPTER 8

PRACTICAL IMPLICATIONS

From a practical standpoint, this study may offer some recommendations stemming from the findings. First, since frequency of patient trauma was found to be positively associated with STS, perhaps patients could be pre-screened for trauma so that no one counselor is exposed to a greater frequency of patient trauma. Many treatment centers pre-screen their patients already as part of the in-take process, so this recommendation may not require additional work, just different application of the information already available. If the treatment center only serves patients with high exposure to trauma, perhaps notifying the counselor in advance of the types of trauma a particular patient has been exposed to would help the counselor prepare for possible disclosure.

Another implication is for training around patient trauma exposure in substance abuse treatment work. This training could be incorporated into existing training on stress management or a related topic. Additionally, it is important to introduce future substance abuse counselors to the topic of patient trauma during educational training as well as once on the job. Educational curriculum should include a discussion of patient trauma and STS.

In addition, it may be advisable to screen counselors either in educational programs, pre-hire, or on the job to assess propensity to ruminate, and the implications this may have on a career in the substance abuse field. This knowledge may help individuals make career decisions, consider addressing rumination tendencies, or even help supervisors understand the strengths and weaknesses of the counselor. If a counselor does have a propensity to ruminate, rumination-

focused cognitive therapy may be a suitable treatment (Watkins, 2009). It is also important to note that while these suggestions are directed at substance abuse counselors, they may or may not generalize to other similar populations.

CHAPTER 9

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

As with any research, this study is not without limitations. First, there may be alternative models that may be more appropriate for explaining the effects of exposure to patient trauma. Future research should compare the model from the present study to such alternative models. Second, there are other helping professions that are exposed to patient trauma that are not captured in this study. Future research should investigate these phenomena with other professions, such as social work, first-responders, and nursing. Third, the present research was cross-sectional in nature. This limits the ability to make any statement s about causation, and fails to explain relationships that may unfold over time. Future research should investigate spillover and crossover effects over time using a longitudinal design.

CHAPTER 10

CONCLUSION

Research on trauma has traditionally focused on the direct targets of the trauma, often ignoring indirect targets that may experience STS. This study has answered the call to empirically evaluate STS as a process, and identify potential risk and protective factors. Drawing from spillover and crossover theories, this study found that patient trauma is associated with STS in a sample of substance abuse counselors, which, in turn, affects counselor but not partner outcomes. In addition, the counselor's propensity to ruminate was found to strengthen this spillover relationship, whereas supportive supervision had no effect on the relationship. These findings highlight the importance and complexity of trauma on secondary victims.

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Table 1

Means, Standard Deviations, and Correlations

Variable	M	SD	1	2	3	4	5	6	7	8	9
1. Impact of Personal Trauma	2.29	1.06	(0.66)								
2. Frequency of Patient Trauma	3.22	0.71	0.19	(0.90)							
3. Secondary Traumatic Stress (STS)	1.88	0.62	0.25*	0.28**	(0.91)						
4. Counselor Work Interference with Nonwork (WIN)	2.92	1.02	0.03	0.18	0.50**	(0.89)					
5. Counselor Perceived Health	2.75	0.34	0.06	-0.06	-0.02	-0.08	(0.84)				
6. Partner Depressed Mood	2.32	0.62	0.11	0.04	0.14	0.07	0.06	(0.83)			
7. Partner Perceived Health	2.66	0.30	-0.22*	0.14	0.01	0.06	0.18	0.03	(0.81)		
8. Propensity to Ruminate	2.96	0.75	0.22*	0.01	0.52**	0.38**	-0.01	0.01	0.20*	(0.91)	
9. Supervisor Support	3.84	0.92	-0.16	-0.09	-0.16	-0.23*	-0.14	-0.05	0.09	0.24*	(0.95)

Note. N=99-102; coefficients alpha are shown in parentheses. *p<.05, **p<.01

TABLE 2
Ordinary Least Squares Regression Results

Predictor	Secondary Traumatic Stress (STS)			
	B	SE	z	R²
				.12*
Constant	.83*	0.31	2.64	
Frequency of Patient Trauma	.24*	0.09	2.55	
Control (Impact of Personal Trauma)	.12*	0.06	2.16	

Predictor	Counselor Work Interfering with Nonwork			
	B	SE	z	R²
				.26*
Constant	1.31*	0.49	2.69	
STS	.84*	0.15	5.52	
Frequency of Patient Trauma	0.09	0.15	0.61	
Control (Impact of Personal Trauma)	-0.11	0.09	-1.26	

Mediator	Indirect Effect of X on Y through M			
	Effect	Boot SE	Boot LLCI	Boot ULCI
STS	0.20	0.10	0.05	0.44

Note. N=101; *p<.05

TABLE 3
Ordinary Least Squares Regression Results

Predictor	Secondary Traumatic Stress (STS)			
	B	SE	z	R²
				.12*
Constant	.83*	0.31	2.64	
Frequency of Patient Trauma	.24*	0.09	2.55	
Control (Impact of Personal Trauma)	0.12*	0.06	2.16	

Predictor	Counselor Perceived Health			
	B	SE	z	R²
				0.15*
Constant	4.57*	0.36	12.56	
STS	-0.28*	0.11	-2.51	
Frequency of Patient Trauma	0.03	0.11	0.24	
Control (Impact of Personal Trauma)	-0.16*	0.07	-2.45	

Mediator	Indirect Effect of X on Y through M			
	Effect	Boot SE	Boot LLCI	Boot ULCI
STS	-0.07	0.04	-0.18	-0.01

Note. N=101; *p<.05

TABLE 4
Ordinary Least Squares Regression Results

Predictor	Secondary Traumatic Stress (STS)			
	B	SE	z	R²
				0.12*
Constant	0.83*	0.32	2.61	
Frequency of Patient Trauma	0.24*	0.10	2.46	
Control (Impact of Personal Trauma)	0.12*	0.06	2.15	

Predictor	Partner Depressed Mood			
	B	SE	z	R²
				0.03
Constant	2.16	0.34	6.33	
STS	0.13	0.11	1.20	
Frequency of Patient Trauma	-0.06	0.10	-0.57	
Control (Impact of Personal Trauma)	0.05	0.06	0.88	

Mediator	Indirect Effect of X on Y through M			
	Effect	Boot SE	Boot LLCI	Boot ULCI
STS	0.03	0.03	-0.01	0.11

Note. N=99; *p<.05

TABLE 5
Ordinary Least Squares Regression Results

Predictor	Secondary Traumatic Stress (STS)			
	B	SE	z	R²
				.12*
Constant	0.83*	0.32	2.64	
Frequency of Patient Trauma	0.24*	0.10	2.47	
Control (Impact of Personal Trauma)	0.12*	0.06	2.16	
Predictor	Partner Perceived Health			
	B	SE	z	R²
				0.04
Constant	4.14	0.34	12.11	
STS	-0.20	0.11	-1.90	
Frequency of Patient Trauma	-0.30	0.10	-0.26	
Control (Impact of Personal Trauma)	0.06	0.06	1.02	
Mediator	Indirect Effect of X on Y through M			
	Effect	Boot SE	Boot LLCI	Boot ULCI
STS	-0.05	0.04	-0.16	0.01

Note. N=100; *p<.05

TABLE 6
Ordinary Least Squares Regression Results

Predictor	Secondary Traumatic Stress (STS)				
	B	SE	z	R²	F
					14.96*
				.38*	(df=4,96)
Constant	1.74*	0.12	14.09		
Frequency of Patient Trauma	0.21*	0.08	2.67		
Rumination	0.41*	0.07	5.92		
Frequency of Patient Trauma X					Δ 4.34*
Rumination	0.21*	0.10	2.08	Δ .03*	(df=1,96)
Control (Impact of Personal Trauma)	0.06	0.05	1.24		

Rumination	Conditional Effects at Rumination = mean and ±1 SD			
	Effect	Boot SE	z	p
-0.75	0.06	0.12	0.51	0.61
0	0.21	0.08	2.67	0.01
0.75	0.37	0.10	3.61	0.01

Note. N=101; *p<.05

TABLE 7
Ordinary Least Squares Regression Results

Predictor	Secondary Traumatic Stress (STS)			
	B	SE	z	R²
				.38*
Constant	1.74*	0.12	14.09	
Frequency of Patient Trauma	0.21*	0.08	2.67	
Rumination	0.41*	0.07	5.92	
Frequency of Patient Trauma X Rumination	0.21*	0.10	2.08	
Control (Impact of Personal Trauma)	0.06	0.05	1.24	
Predictor	Counselor Work Interfering with Nonwork			
	B	SE	z	R²
				.26*
Constant	1.60*	0.32	4.93	
STS	0.84*	0.15	5.52	
Frequency of Patient Trauma	0.09	0.15	0.61	
Control (Impact of Personal Trauma)	-0.11	0.09	-1.26	
Rumination	Conditional Effects at Rumination = mean and ±1 SD			
	Effect	Boot SE	Boot LLCI	Boot ULCI
-0.75	0.05	0.07	-0.10	0.18
0	0.18	0.08	0.05	0.34
0.75	0.31	0.11	0.11	0.55

Note. N=101; *p<.05

TABLE 8
Ordinary Least Squares Regression Results

Predictor	Secondary Traumatic Stress (STS)			
	B	SE	z	R²
				0.38*
Constant	1.74*	0.12	14.09	
Frequency of Patient Trauma	0.21*	0.08	2.67	
Rumination	0.41*	0.07	5.92	
Frequency of Patient Trauma X Rumination	0.21*	0.10	2.08	
Control (Impact of Personal Trauma)	0.06	0.05	1.24	

Predictor	Counselor Perceived Health			
	B	SE	z	R²
				0.15*
Constant	4.65*	0.24	19.23	
STS	-0.28*	0.11	-2.51	
Frequency of Patient Trauma	0.03	0.11	0.24	
Control (Impact of Personal Trauma)	-0.16*	0.07	-2.45	

Rumination	Conditional Effects at Rumination = mean and ±1 SD			
	Effect	Boot SE	Boot LLCI	Boot ULCI
-0.75	-0.017	0.03	-0.09	0.02
0	-0.061	0.04	-0.15	-0.01
0.75	-0.105	0.06	-0.23	-0.02

Note. N=101; *p<.05

TABLE 9
Ordinary Least Squares Regression Results

Predictor	Secondary Traumatic Stress (STS)			
	B	SE	z	R²
				.38*
Constant	1.74*	0.13	13.78	
Frequency of Patient Trauma	0.22*	0.08	2.63	
Rumination	0.41*	0.07	5.84	
Frequency of Patient Trauma X Rumination	0.21*	0.10	2.05	
Control (Impact of Personal Trauma)	0.06	0.05	1.23	
Predictor	Partner Depressed Mood			
	B	SE	z	R²
				0.03
Constant	1.97*	0.23	8.72	
STS	0.13	0.11	1.20	
Frequency of Patient Trauma	-0.05	0.11	-0.57	
Control (Impact of Personal Trauma)	0.05	0.06	0.88	
Rumination	Conditional Effects at Rumination = mean and ±1 SD			
	Effect	Boot SE	Boot LLCI	Boot ULCI
-0.75	0.01	0.01	-0.01	0.06
0	0.03	0.03	-0.02	0.09
0.75	0.05	0.04	-0.04	0.14

Note. N=99; *p<.05

TABLE 10
Ordinary Least Squares Regression Results

Predictor	Secondary Traumatic Stress (STS)			
	B	SE	z	R²
				.38*
Constant	1.74*	0.13	14.75	
Frequency of Patient Trauma	0.21*	0.08	2.62	
Rumination	0.40*	0.07	5.85	
Frequency of Patient Trauma X Rumination	0.21*	0.10	2.07	
Control (Impact of Personal Trauma)	0.06	0.05	1.23	
Predictor	Partner Perceived Health			
	B	SE	z	R²
				0.04
Constant	4.05*	0.23	17.85	
STS	-0.20	0.11	-1.90	
Frequency of Patient Trauma	-0.03	0.10	0.79	
Control (Impact of Personal Trauma)	0.06	0.06	1.02	
Rumination	Conditional Effects at Rumination = mean and ±1 SD			
	Effect	Boot SE	Boot LLCI	Boot ULCI
-0.75	-0.01	0.02	-0.08	0.02
0	-0.04	0.03	-0.12	0.01
0.75	-0.07	0.05	-0.18	0.02

Note. N=100; *p<.05

TABLE 11
Ordinary Least Squares Regression Results

Predictor	Secondary Traumatic Stress (STS)				
	B	SE	z	R²	F
				.37*	3.87* (df=4,96)
Constant	1.61*	0.15	11.02		
Frequency of Patient Trauma	0.26*	0.10	2.56		
Supervisor Support	-0.07	0.07	-1.01		
Frequency of Patient Trauma X Supervisor Support	-0.07	0.10	-0.73	Δ .005	Δ .54 (df=1,96)
Control (Impact of Personal Trauma)	.12*	0.06	2.05		

Note. N=101; *p<.05

TABLE 12
Ordinary Least Squares Regression Results

| Predictor | *Secondary Traumatic Stress (STS)* | | | |
	B	SE	z	R²
				.37*
Constant	1.61*	0.15	11.02	
Frequency of Patient Trauma	0.26*	0.10	2.56	
Supervisor Support	-0.07	0.07	-1.01	
Frequency of Patient Trauma X Supervisor Support	-0.08	0.10	-0.73	
Control (Impact of Personal Trauma)	0.12	0.06	2.05	

| Predictor | *Counselor Work Interfering with Nonwork* | | | |
	B	SE	z	R²
				.26*
Constant	1.60*	0.32	4.93	
STS	.84*	0.15	5.52	
Frequency of Patient Trauma	0.09	0.15	0.61	
Control (Impact of Personal Trauma)	-0.11	0.09	-1.26	

| Supervisor Support | *Conditional Effects at Supervisor Support = mean and ±1 SD* | | | |
	Effect	Boot SE	Boot LLCI	Boot ULCI
-0.93	0.28	0.18	-0.05	0.68
0	0.22	0.11	0.02	0.46
0.93	0.16	0.11	-0.04	0.44

Note. N=101; *p<.05

TABLE 13

Ordinary Least Squares Regression Results

Predictor	Secondary Traumatic Stress (STS)			
	B	SE	z	R²
				.37*
Constant	1.61*	0.15	11.02	
Frequency of Patient Trauma	0.26*	0.10	2.56	
Supervisor Support	-0.07	0.07	-1.01	
Frequency of Patient Trauma X Supervisor Support	-0.07	0.10	-0.73	
Control (Impact of Personal Trauma)	.12*	0.06	2.05	

Predictor	Counselor Perceived Health			
	B	SE	z	R²
				0.15*
Constant	4.65*	0.24	19.23	
STS	-0.28*	0.11	-2.51	
Frequency of Patient Trauma	0.03	0.11	0.24	
Control (Impact of Personal Trauma)	-0.16*	0.07	-2.45	

Supervisor Support	Conditional Effects at Supervisor Support = mean and ±1 SD			
	Effect	Boot SE	Boot LLCI	Boot ULCI
-0.93	-0.095	0.07	-0.28	-0.01
0	-0.074	0.05	-0.20	-0.01
0.93	-0.054	0.04	-0.17	-0.01

Note. N=101; *p<.05

TABLE 14

Ordinary Least Squares Regression Results

Predictor	Secondary Traumatic Stress (STS)			
	B	SE	z	R²
				.14*
Constant	1.60*	0.15	10.75	
Frequency of Patient Trauma	0.26*	0.10	2.47	
Supervisor Support	-0.07	0.07	-1.00	
Frequency of Patient Trauma X Supervisor Support	-0.08	0.11	-0.72	
Control (Impact of Personal Trauma)	.12*	0.06	2.04	
Predictor	Partner Depressed Mood			
	B	SE	z	R²
				0.03
Constant	1.97*	0.23	8.72	
STS	0.13	0.11	1.20	
Frequency of Patient Trauma	-0.06	0.10	-0.57	
Control (Impact of Personal Trauma)	0.05	0.06	0.88	
Supervisor Support	Conditional Effects at Supervisor Support = mean and ±1 SD			
	Effect	Boot SE	Boot LLCI	Boot ULCI
-0.93	0.04	0.04	-0.02	0.18
0	0.03	0.03	-0.01	0.11
0.93	0.02	0.03	-0.01	0.11

Note. N=99; *p<.05

TABLE 15
Ordinary Least Squares Regression Results

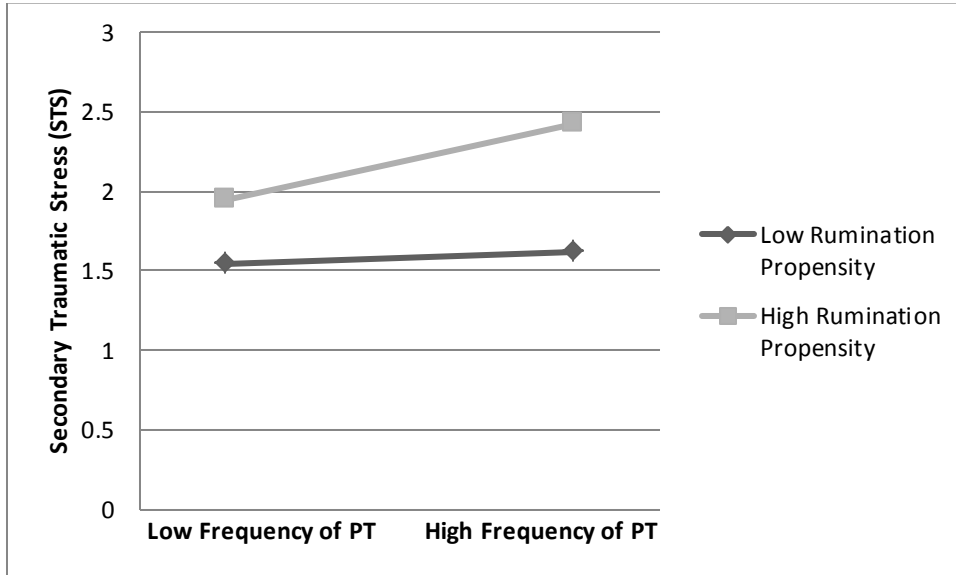| Predictor	*Secondary Traumatic Stress (STS)*			
	B	*SE*	*z*	*R²*
				.14*
Constant	1.60*	0.15	10.83	
Frequency of Patient Trauma	0.26*	0.10	2.49	
Supervisor Support	-0.07	0.07	-1.00	
Frequency of Patient Trauma X Supervisor Support	-0.08	0.11	-0.73	
Control (Impact of Personal Trauma)	0.12	0.06	2.05	
Predictor	*Partner Perceived Health*			
	B	*SE*	*z*	*R²*
				0.04
Constant	4.05*	0.23	17.85	
STS	-0.20	0.11	-1.90	
Frequency of Patient Trauma	-0.03	0.10	-0.26	
Control (Impact of Personal Trauma)	0.06	0.06	1.02	
Supervisor Support	*Conditional Effects at Supervisor Support = mean and ±1 SD*			
	Effect	*Boot SE*	*Boot LLCI*	*Boot ULCI*
-0.93	-0.066	0.06	-0.26	0.01
0	-0.052	0.04	-0.17	0.01
0.93	-0.038	0.04	-0.15	0.01

Note. N=100; *p<.05

Figure 1. *Conceptual Model*
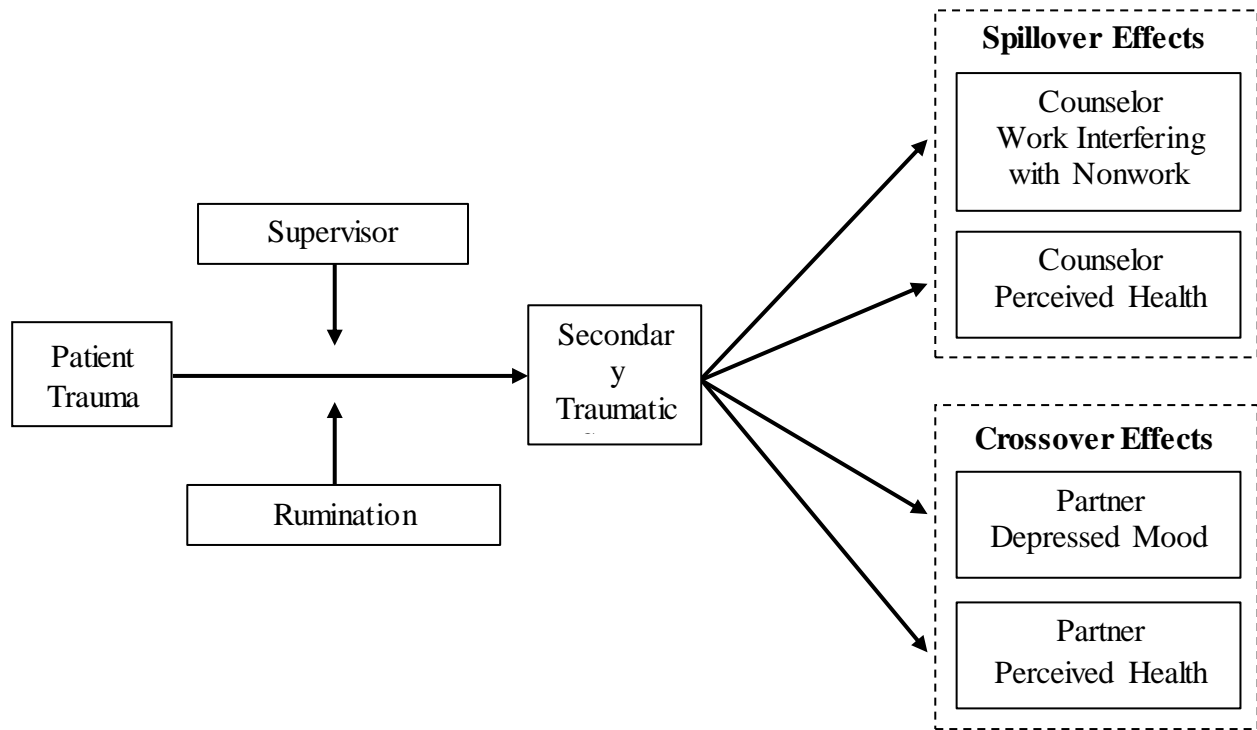
Figure 2. *Statistical Model*
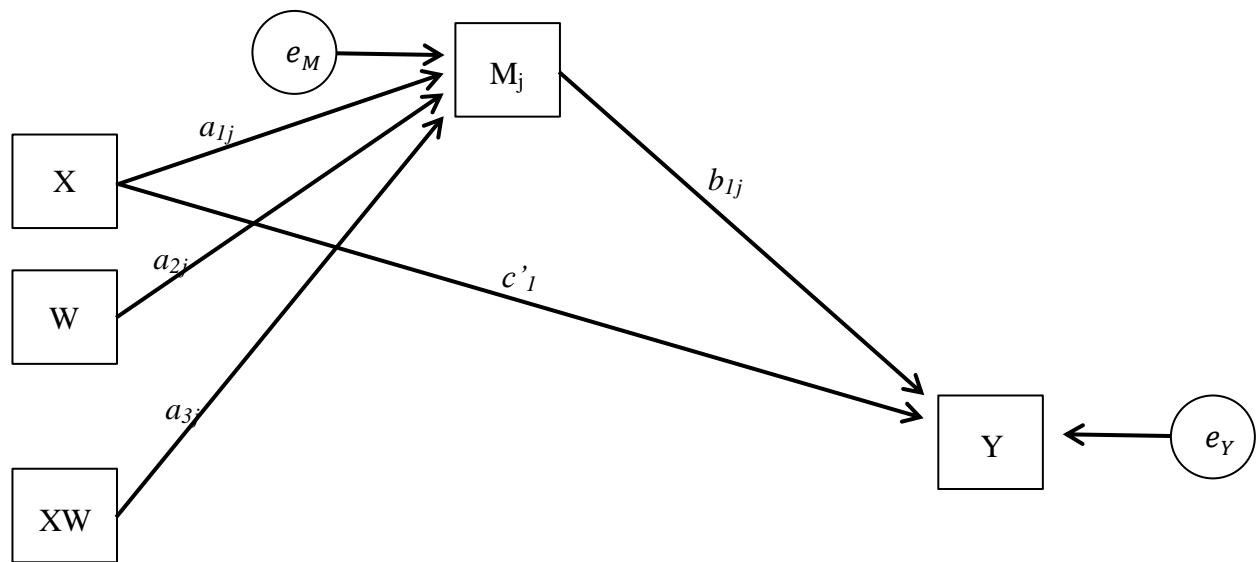
Conditional indirect effect of X on Y through $M_j = (a_{1j} + a_{3j}W)\, b_{1j}$

Figure 3. *Simple Slopes Analysis*

Note: PT = Patient Trauma