Contemporary Family Therapy (2023) 45:207–217
https://doi.org/10.1007/s10591-021-09605-6

ORIGINAL PAPER

Are Perfectionistic Standards Associated with Burnout? Multidimensional Perfectionism and Compassion Experiences Among Professional MFTs

C. L. Holden[1] · M. M. Jeanfreau[1]

Accepted: 17 August 2021 / Published online: 21 August 2021

Abstract

The current study addressed the role that perfectionism plays among professionals in this field of marriage and family therapy (MFT). Specifically, this study provides information about PS (personal standards) perfectionism and EC (evaluative concerns) and their relationship with both compassion satisfaction and compassion fatigue. The sample included 247 marriage and family therapists who answered demographic questions along with completing the professional quality of life scale (ProQOL; as reported by Stamm, B. H. (2009). Professional Quality of Life: Compassion Satisfaction and Fatigue Version 5 (ProQOL). Retrieved from http://www.proqol.org/ProQol_Test.html; Stamm in The concise ProQOL manual, ProQOL.org, 2010;) and the multidimensional perfectionism scale (MPS; Hewitt and Flett, Journal of Personality and Social Psychology 60:456–470, 1991). Results indicated three significant findings: (1) higher levels of both self-oriented and socially oriented perfectionism are correlated with higher levels of both burnout and secondary traumatic stress; (2) as years of work as an MFT increase, level of burnout decreases; and (3) women demonstrated statistically significantly higher scores in PS perfectionism than men. Limitations, implications, and future directions are discussed.

Keywords Marriage and family therapy · Perfectionism · Compassion satisfaction · Burnout · Secondary traumatic stress

Compassion, or the desire to free others from their pain and suffering (Figley & Roop, 2006), is a trademark quality of marriage and family therapists (MFTs; Hunter, 2012). Compassion is action-oriented and can become activated when helping professionals identify with their clients (Figley, 1995b; Figley & Roop, 2006). Communicating empathy and compassion in a professional therapy setting serves to facilitate care and connection between MFTs and their clients. So many of the numerous roles that MFTs hold with their clients are enhanced because of the therapist's willingness to tune in to their feelings of compassion and to recognize the humanity of others (Hunter, 2012; Stosny, 2004). Compassion has a well-established reputation of being a positive and desirable quality, particularly among helping professionals (Figley, 1995b; Figley & Roop, 2006). However, recently researchers and clinicians have begun to recognize that compassion has more dimensions than previously recognized. Compassion has the potential to have both positive effects (compassion satisfaction) and negative effects (compassion fatigue) for the helping professional. Understanding this dichotomy of compassion can help prepare MFTs to be better equipped to care for themselves as they care for others.

In addition to understanding the dimensions of compassion, it is important to recognize additional characteristics and qualities that can perpetuate the negative side of compassion and therefore may place the therapist at greater risk of experiencing difficulties because of their role of caring for others. One personal characteristic that needs greater empirical attention because of its potential to exacerbate the risk of compassion fatigue is perfectionism. Perfectionistic tendencies can place great demand and distress on a therapist and could even disrupt his or her clinical effectiveness (Holden, 2019). This research study seeks to describe the nature of the relationship between compassion and perfectionism among professional MFTs to better understand how this relationship may affect both the personal and professional wellbeing of the therapist.

✉ C. L. Holden
Chelsey.Holden@usm.edu

[1] School of Child and Family Sciences, The University of Southern Mississippi, 118 College Drive #5035, Hattiesburg, MS 39406, USA

Compassion Satisfaction

Compassion satisfaction (CS) is a term used to represent the benefits of working within the helping professions, such as within the field of marriage and family therapy (Stamm, 2010). CS is the sense of enjoyment or fulfillment that comes from one's work as a helper and includes the variety of rewarding outcomes that result from serving and helping others (Figley & Roop, 2006; Stamm, 2010). Many people pursue a career in marriage and family therapy because of their desire to help others—the reward of compassion satisfaction is a factor that often contributes to helping professionals' ability to be present with clients during times of tragedy and trauma (Hunter, 2012; Sacco et al., 2015). CS includes connections and relationships that are built as a result of one's work, positive feelings that occur because of one's role, personal feelings of achievement, and recognitions received from one's work efforts. CS is related to the therapist's level of professional self-esteem, the pride he or she derives from being in the profession, and his or her professional identity (Miller et al., 1988; Ramirez et al., 1995). This positive aspect of compassionate caring can bring incredible reward to therapists. However, the last two decades of empirical research have also begun to show the risks associated with compassion in the helping professions—such as MFT—that necessitate intense levels of compassion (Hunter, 2012).

Compassion Fatigue

Compassion fatigue describes the deep mental, physical, and emotional exhaustion that can come from directly interacting with and caring for others who have experienced or are experiencing emotional pain, physical hurt, or trauma (Figley, 1995a; Figley & Roop, 2006; Ludick & Figley, 2017). Compassion fatigue generally develops over an extended period as the cumulative emotional demands of the job outweigh the therapist's emotional resources (Figley, 1995a, 1995b, 2002, 2003; Figley & Roop, 2006). Compassion fatigue affects the therapist's ability to feel empathy and compassion toward others (Figley, 1982). This condition can be mistaken as depression and anxiety, with both acute and long-term symptoms including fatigue, hopelessness, fear, dissociation, trouble sleeping, anger, withdrawal, numbness, and hypervigilance (Figley & Roop, 2006; Stamm, 2010).

Although there are several conceptualizations used in empirical research, Figley's (1995a) and Stamm's (2010) theoretical conceptualization of compassion fatigue is used for this study. This model holds that compassion fatigue is composed of two separate factors—secondary traumatic stress (STS) and burnout. In some conceptualizations, the term STS is used interchangeably with the term compassion fatigue; however, several important distinctions are noted by Figley (1995a) and Stamm (2010). First, compassion fatigue has been established as the preferred term used for helping professionals, including marriage and family therapists, whereas the term STS generally encompasses a wider and more diverse audience (Ludick & Figley, 2017). Second, compassion fatigue acknowledges the construct of burnout as an influential aspect of compassion fatigue symptomology, whereas STS focuses only on the symptoms resulting from vicarious exposure to trauma (Figley, 1995a; Stamm, 2010). Finally, in recognizing these two separate components, compassion fatigue accounts for both the short-term effects of STS that can develop rapidly, as well as the cumulative and gradual effects of burnout upon the MFT (Figley, 1995a, 2003; Stamm, 2010).

STS

STS is a condition that occurs when MFTs who provide professional services to victims of trauma are vicariously affected by the client's trauma through the professional encounter (Devilly et al., 2009; Moulden & Firestone, 2007). As a result of the therapist's empathic response to a client's trauma and/or indirect exposure to trauma, therapists may experience negative emotional, cognitive, and physical symptoms (Baird & Jenkins, 2003; Sodeke-Gregson et al., , 2013). STS is an acute reaction to trauma exposure, and symptoms are comparable to posttraumatic stress disorder (American Psychiatric Association, 2013; Sodeke-Gregson et al., 2013). Symptoms may include an avoidance of stimuli associated with the trauma, isolation and detachment from others, re-experiencing of the traumatic event and the negative response associated with that event, and decreased ability to experience certain emotions (American Psychiatric Association, 2013; Rzeszutek et al., 2015).

Burnout

Burnout, the second component of compassion fatigue, describes a state of frustration, hopelessness, difficulties in completing one's work, emotional and physical exhaustion, and mental weariness that can develop over time from workplace demands (Figley & Roop, 2006; Maslach, 1982; Stamm, 2010). Burnout is often associated with being overworked, administrative discord, procedural challenges, lack of resources, intense workplace stress, and feeling underappreciated (Maslach, 1982; Melamed et al., 1999). Symptoms of burnout are decreased job satisfaction and job performance, anger and aggression, physical sickness and injury,

isolation from others, increase in substance use, and diminished control over one's emotions (Figley & Roop, 2006; Melamed et al., 1999; Ramirez et al., 1995). Although burnout stems from the workplace, the effects of this condition are not limited to the office—the negative effects of burnout can overflow into the MFT's personal life and relationships (Hunter, 2012). Burnout and STS together characterize the condition of compassion fatigue (Figley, 2002; Stamm, 2010).

Some literature has indicated an association between burnout and years of work experience. Duli (2016) found that, among special education teachers, years of work experience was a significant predictor of the emotional exhaustion and depersonalization facets of burnout. Brown and Pashniak (2018) found, among occupational therapists, that therapists under 40 years old and with less than 10 years of work experience reported higher depersonalization scores than older therapists. They also found an association between level of dedication to the profession and age, with older therapists reporting higher levels of dedication to their field than younger therapists. More research is needed to understand the potential associations between years of work and burnout.

Multidimensional Perfectionism

Although defined in various ways among researchers and scholars, most agree that perfectionism generally represents an individual's need to be perfect or appear to be perfect, along with holding impossible standards of excellence and demanding flawless performance (Dunn et al., 2006; Hewitt & Flett, 1991; Slaney et al., 2001). Over the past several decades, perfectionism has been given many names, become a widely debated construct, and has been controversially deemed both helpful and dysfunctional by various authors (see Dunkley et al., 2006; Hewitt & Flett, 1991; Hewitt et al., 2003; Shafran et al., 2003; Slaney et al., 2001). Among the many conceptualizations and theories that have emerged from empirical study, two higher-order components of perfectionism have emerged: personal standards (PS) and evaluative concerns (EC; Dunkley et al., 2012; Dunkley et al., 2006; Stoeber & Otto, 2006). PS perfectionism includes a captivating motivation to avoid failure and to accomplish one's goals (Hewitt & Flett, 1991) and "involves the setting of and striving for high standards and goals for oneself" (Dunkley et al., 2012, p. 233). EC perfectionism "involves constant and harsh self-scrutiny and self-evaluation, an inability to derive satisfaction from successful performance, and chronic concerns about others' criticism and disapproval" (Dunkley et al., 2012, p. 233). EC perfectionism includes a person's efforts to achieve both his or her own standards of excellence, as well as the standards that he or she determines others—such as loved ones, friends, and superiors—have set for him- or herself. EC perfectionism also represents the ongoing burden of intense self-scrutiny and self-evaluation that comes from striving for these perfect standards, difficulty feeling satisfied with one's accomplishments, and is often accompanied by preoccupation with perceiving disapproval from others (Dunkley et al., 2012; Hewitt & Flett, 1991).

Several instruments have been widely used to measure perfectionism, including Hewitt and Flett's (1991) multidimensional perfectionism scale (MPS), frost's multidimensional perfectionism scale (Frost et al., 1990), and the revised almost perfect scale (Slaney et al., 2001). EC perfectionism and PS perfectionism have repeatedly emerged as higher-order latent constructs from the use of each of these instruments (Blankstein et al., 2008; Dunkley et al., 2012; Suddarth & Slaney, 2001). Hewitt and Flett's (1991) MPS, was selected for this study and measures PS perfectionism with its Self-Oriented Perfectionism subscale and EC perfectionism with its Socially Prescribed Perfectionism subscale (Dunkley et al., , 2000, 2006; Stoeber & Otto, 2006). Additionally, the MPS includes an Others-Oriented perfectionism subscale that describes perfectionistic standards that a person directs outward toward others (Hewitt & Flett, 1991).

Previous literature has presented mixed information regarding sex and perfectionism. For example, Stoeber and Stoeber (2009) and Khodarahimi (2010) reported no sex differences in perfectionism. However, Slaney and Ashby (1996) found some evidence of differences between women and men in levels of perfectionism and the way it is experienced, with women reporting greater levels of perfectionism than men. Additionally, Bojanic et al. (2018) found that women reported feeling greater levels of perfectionistic pressure from loved ones compared to the levels reported by men. More research is needed to better understand potential differences between men and women in perfectionism levels.

Despite arguments that some aspects of mild perfectionism can be motivational and positive (*e.g.*, Gotwals et al., 2012; Stoeber & Otto, 2006), Hewitt and Flett's (1991) longstanding argument posits that perfectionism by nature is extreme and destructive both interpersonally and intrapersonally to the perfectionist. They argue that perfectionism must be clearly distinguished from healthy motivational goals, strong work ethic, or pursuing viable standards of excellence. Supporters of this "negative" conceptualization note that perfectionism demands perfect performance and is dissatisfied with and critical of anything less, which is problematic to consider as a healthy or desirable mindset (Dunn et al., 2006; Hewitt & Flett, 1991; Flett & Hewitt, 2002; Sherry et al., 2010; Smithet al., 2018). A growing body of literature has supported the wide-reaching negative effects that are associated with perfectionism (*e.g.*, Ashby, et al., 2008a, 2008b; Dunn et al., 2006; Dunkley, et al., 2012; Gnilka, et al., 2012; Hill et al., 1997; Holden, 2019;

Stoebar, 2014; Smith et al., 2018). These negative effects have the potential to reach into the professional work of marriage and family therapists, disrupting the safe and genuine relationship that therapists work so hard to create and maintain with their clients (Arkowitz, 1990; Holden, 2019).

The Present Study

Despite the potential for perfectionism to be highly disruptive both personally and professionally to MFTs, few research studies have addressed the role that perfectionism plays among professionals in this field, or the constructs associated with perfectionism (Holden, 2019). Several studies in other mental health professions have addressed some aspects of perfectionism and its relationship to compassion fatigue and burnout. For example, D'Souza et al. (2011) found that clinical psychologists who endorsed higher levels of perfectionism were more prone to experiencing professional burnout. This same association was found among school counselors (Fye et al., 2018) and counselor educators (Moate et al., 2016). Holden (2021) found that, among professional counselors, both burnout and secondary traumatic stress were positively associated with both EC perfectionism and PS perfectionism. Additionally, compassion satisfaction was inversely associated with EC perfectionism. Gillespie (2017) found that mental health professionals who practice greater levels of self-compassion—with a defining feature of kinder self-judgments, something antithetical to perfectionism—may experience higher levels of compassion satisfaction and lower levels of burnout.

Burnout and compassion fatigue are not new topics to the field of marriage and family therapy; however, perfectionism appears to be a relatively absent topic within professional literature. Due to the association found among other mental health professionals between perfectionism and burnout, it is relevant to investigate this relationship specifically among MFTs. The present study seeks to provide information about PS perfectionism and EC perfectionism among marriage and family therapists, as well as the relationship between perfectionism and both the positive and negative aspects of compassion—compassion satisfaction and compassion fatigue. This research study will begin filling a gap within the MFT literature with regard to perfectionism and its influence on professionals in this field.

Method

Research Questions

The authors sought to answer three research questions. First, among MFTs, what is the nature of the relationship between levels of perfectionism (self-oriented, others-oriented, socially prescribed) and levels of compassion (compassion satisfaction, burnout, secondary traumatic stress) among MFTs? The authors hypothesize that self-oriented perfectionism and socially prescribed perfectionism will be positively related to burnout and inversely related to compassion satisfaction. Second, what is the nature of the relationship between years of work and level of burnout among MFTs? The authors hypothesize that years of work will be inversely related to level of burnout. Finally, are levels of perfectionism between men and women MFTs significantly different? The authors hypothesize that women will demonstrate higher levels of self-oriented perfectionism, others-oriented perfectionism, and socially prescribed perfectionism than men.

Participants

Participants included 247 marriage and family therapists working in 42 different states across the United States. One hundred seventy-five (71%) were women and 72 (29%) were men. The majority were Caucasian (218; 88.3%) followed by 10 (4%) African American, nine (3.6%) biracial or multiracial, six (2.4%) Hispanic/Latino, two (0.8%) Asian, and two (0.8%) Other. Most completed a Master's degree (165; 66.8%) as their highest degree, along with seven (2.8%) who completed a Specialist's degree, 71 (26.7%) who completed a doctoral degree (*i.e.*, Ph.D., Ed.D., or DMFT), and nine (3.6%) who reported an Other degree (*e.g.*, D.Min) as their highest earned. Participants ranged in age from 22 to 83 ($M = 48.4$; $SD = 14.56$) with one to 50 years of MFT work experience ($M = 16.52$; $SD = 11.61$). See Table 1 about here for descriptive information for each of the compassion variables and perfectionism variables for the total sample and according to sex. This sample averaged low levels of secondary traumatic stress and burnout and high levels of compassion satisfaction according to ProQOL instrument norms provided by Stamm (2010).

Procedure

Additional data from this research project are reported in Holden (2021). Participants were recruited from a purchased list of members of the American Association for Family Therapy (AAMFT) using mailed postcards with a research invitation. The mailed postcards included a scannable QR code that could be used to access a Qualtrics web survey. Additionally, approved supervisors registered on AAMFT's publically available website were sent a research invitation via email that contained a web link to a Qualtrics survey. Completers were given the option to enter to win one of four $50 Amazon gift cards on the final page of the web survey.

Table 1 Descriptive statistics for perfection and compassion variables

Variable	*M*	*SD*	Min	Max
Total sample ($n=246$)				
Self-oriented perfectionism	62.60	15.98	24	104
Others-oriented perfectionism	53.25	11.21	23	93
Socially prescribed perfectionism	44.65	13.53	21	92
Compassion satisfaction (CS)	43.22	5.26	20	50
Burnout (BO)	19.03	4.76	11	35
Secondary traumatic stress (STS)	19.31	5.05	10	43
Men ($n=72$)				
Self-oriented perfectionism	59.01	14.88	24	93
Others-oriented perfectionism	51.99	9.00	27	77
Socially prescribed perfectionism	43.47	13.30	21	82
Compassion satisfaction (CS)	43.01	5.05	29	50
Burnout (BO)	19.79	4.51	10	32
Secondary traumatic stress (STS)	19.39	5.07	11	43
Women ($n=174$)				
Self-oriented perfectionism	64.09	16.23	27	104
Others-oriented perfectionism	53.77	11.99	23	93
Socially prescribed perfectionism	45.14	13.63	21	92
Compassion satisfaction (CS)	43.31	5.36	20	50
Burnout (BO)	18.71	4.85	10	35
Secondary traumatic stress (STS)	19.27	5.05	10	36

Instruments

Participants answered several demographic questions including age, ethnicity, highest degree earned, years of work in marriage and family therapy, and the state in which they lived.

To measure burnout and total compassion experiences, participants completed the professional quality of life scale (ProQOL; Stamm, 2009, 2010). The ProQOL is a 30-item questionnaire that measures two constructs: compassion satisfaction (CS) and compassion fatigue (CF). All questions are answered on a 5-point Likert scale from 1 to 5 (never to very often). The CS scale contains 10 items (*e.g.*, *I believe I can make a difference through my work*). Two dimensions, or subscales, are included in the measurement of CF: burnout and STS. Both subscales contain 10 items (*e.g.*, *I find it difficult to separate my personal life from my life as a helper*). Scores on each scale range from 10 to 50; higher scores indicate scales higher endorsement of the construct being measured. Alpha coefficients for this study are 0.90 for CS, 0.79 for Burnout, and 0.82 for STS.

To measure perfectionism, participants completed the Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991). This self-report instrument is 45-items and used to identify three dimensions of perfectionism: self-oriented, others-oriented, and socially prescribed. Participants respond to statements (*e.g.*, *It is very important that I am perfect in everything I attempt*) on a seven-point Likert scale from 1 to 7 (strongly disagree to strongly agree). Scores on the three subscales each range from 15 to 105, with higher scores indicating greater levels of that dimension of perfectionism endorsed (Hewitt & Flett, 1991). Alpha coefficients for this study are 0.85 for socially prescribed, 0.77 for others-oriented, and 0.89 for self-oriented perfectionism.

Statistical Analyses

A canonical correlation analysis was used to identify relationships between the three dimensions of perfectionism and the three types of compassion. Canonical correlation is a general linear model analysis that identifies multivariate relationships; its interpretation is closely linked with the Pearson *r* correlation coefficient (Sherry & Henson, 2005). Canonical correlation offers an advantage in its ability to look at sets of variables in unison with one another rather than in isolation, which better reflects the complexities of human behavior research (Sherry & Henson, 2005), as well as providing minimal risk of Type I error (Hair et al., 2014; Sherry & Henson, 2005). Pearson's correlation was used to identify the correlation between years of work and burnout. A MANOVA was used to determine whether men and women reported different levels of perfectionism. An alpha level of 0.05 was used for all analyses.

Results

Data Cleaning

Three-hundred and thirty-one responses were received via the Qualtrics research web link. Four responses (1.2%) were removed due to self-reporting having earned a bachelor's degree as their highest degree or zero years of experience as an MFT. Thirty cases (9.1%) were removed due to completing only the demographic questions and no other survey questions. Thirty-nine participants (11.7%) did not complete the MPS and an additional 11 (3.3%) did not complete the ProQOL. One case (0.3%) was identified as a multivariate outlier according to Mahalanobis' distance ($a=0.005$; Jennings & Young, 1988) and was excluded from analysis. After this cleaning process, 246 participants were included in data analysis.

For canonical correlation preparation, Cook's test revealed that no individual cases showed undue influence on the data set. Using Mardia's statistical methods (Mardia, 1985), multivariate normality was checked for the Perfectionism and Compassion sets of variables. Both variable sets violated the assumption of multivariate normality according to skewness and kurtosis ($p<0.001$). Therefore, univariate normality was checked. The three variables in the

perfectionism set met the assumption of normality. After burnout received a square root transformation, secondary traumatic stress received a logarithmic transformation, and compassion satisfaction received a reflect and square root transformation, all variables met the assumption of normality. All variables demonstrated linear relationships and evidence of homoscedasticity. The data demonstrated VIF scores within tolerated range and were determined not to have issues due to multicollinearity (see correlated relationships in Table 2) about here. All assumptions were met for all analyses.

Research Question 1

What is the nature of the relationship between levels of perfectionism and levels of compassion among MFTs? The canonical correlation analysis yielded three functions. However, only the first function provided significant findings; therefore, Functions 2 and 3 are not interpreted here. Function 1 was found to be statistically significant, $R_c = 0.446$; Wilks' $\lambda = 0.784$, $F\ (9, 550) = 6.441$, $p < 0.001$, and explains 20% of the variance in the data set. Looking at the Function 1 loadings, one can see that the most relevant variables in the compassion set were burnout and secondary traumatic stress. This is confirmed when looking at the standardized coefficients (see Table 3) about here. Within the perfectionism set, the most important variables were socially oriented perfectionism and self-oriented perfectionism. All four of these prominent variables show a negative sign and therefore are positively related.

As shown in Table 2, several variables show statistically significant correlations across sets. Several of these relationships are highlighted here. First, Pearson's correlation for socially prescribed perfectionism and burnout ($r = 0.429$)

Table 2 Correlations between compassion and perfection variable sets

	Self	Others	Social	CS	BO	STS
Self	1			0.125	0.266	0.241**
Others	0.517**	1		0.138*	0.147*	0.169**
Social	0.595**	0.426**	1	0.252**	0.424**	0.345**
CS	− 0.144*	− 0.159*	− 0.268**	1	0.674**	0.274**
BO	0.276**	0.150*	0.430**	− 0.691**	1	0.589**
STS	0.257**	0.164*	0.343**	− 0.297**	0.598**	1

Self self-oriented perfectionism, *Others* others-oriented perfectionism, Social socially prescribed perfectionism, *CS* compassion satisfaction, *BO* burnout, *STS* secondary traumatic stress

n 246

*Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed). Correlations above the diagonal represent transformed values, and correlations below the diagonal represent non-transformed values

Table 3 Canonical loadings and cross-loadings for perfectionism and compassion sets

	Function 1 loadings	Standardized coefficients	Unstandardized coefficients	Function 1 cross-loadings
Perfectionism set				
Social	− 0.995	− 0.979	− 0.071	− 0.444
Others	− 0.362	0.106	0.010	− 0.161
Self	− 0.642	− 0.101	− 0.006	− 0.286
Adequacy	0.511			
Redundancy				0.102
Compassion set				
Burnout	− 0.965	− 0.903	− 1.683	− 0.430
STS	− 0.770	− 0.271	− 2.469	− 0.344
CS	− 0.533	0.149	0.158	− 0.238
Adequacy	0.603			
Redundancy				0.120

Self self-oriented perfectionism, *Others* others-oriented perfectionism, *Social* socially prescribed perfectionism, *STS* secondary traumatic stress, *CS* compassion satisfaction

n 246

is significant ($p < 0.001$) and represents a medium effect size (Cohen, 1988). As shown by the standardized coefficients in Table 3, this pair is given the most emphasis within the canonical root of the first canonical function. Second, Pearson's correlation for socially prescribed perfectionism and secondary traumatic stress ($r = 0.345$) is significant ($p < 0.001$) and represents a medium effect size (Cohen, 1988). Next, Pearson's correlation for self-oriented perfectionism and burnout ($r = 0.265$) is significant ($p < 0.001$), and Pearson's correlation for self-oriented perfectionism and secondary traumatic stress ($r = 0.243$) is significant ($p < 0.001$); both correlations represent a small effect size (Cohen, 1988). Finally, Pearson's correlation for socially prescribed perfectionism and compassion satisfaction ($r = 0.252$) is significant ($p < 0.001$) and represents a small effect size. Correlations before transformation show that this is an inverse relationship. In summary, higher levels of self-oriented perfectionism are correlated with higher levels of both burnout and secondary traumatic stress; additionally, higher levels of socially oriented perfectionism are correlated with higher levels of both burnout and secondary traumatic stress. Lastly, compassion satisfaction is inversely related to socially prescribed perfectionism.

Research Question 2

What is the nature of the relationship between years of work significantly and level of burnout among MFTs? Pearson's correlation for years of work and burnout ($r = -0.205$) is statistically significant ($p = 0.001$) and represents a small effect size (Cohen, 1988). This inverse relationship indicates that as years of work as an MFT increase, level of burnout decreases, and vice versa.

Research Question 3

Are levels of perfectionism between men and women MFTs significantly different? No significant differences in levels of perfectionism were found between men and women MFTs, $F(3, 242) = 1.843$, $p = 0.140$, Wilks' $\Lambda = 0.978$. However, univariate results indicate a significant difference found between men and women on levels of self-oriented perfectionism ($p = 0.023$). Therefore, an independent samples t-test was used to confirm these results. Results indicate women scored an average of 5.07 points higher on self-oriented perfectionism than men, $M = -5.072$, 95% CI [−9.45, −0.70], $t(244) = 2.284$, $p = 0.023$. In summary, men and women do not demonstrate statistically significantly different scores in others-oriented or socially prescribed perfectionism; however, women demonstrate statistically significantly higher scores in self-oriented perfectionism than men.

Discussion

Perfection and Compassion

As hypothesized, self-oriented perfectionism (PS perfectionism) and socially oriented perfectionism (EC perfectionism) were found to be positively related to burnout and STS. These results are similar to other research looking at perfectionism in relation to mental health professionals. Studies have found that clinical psychologists, school counselors, and professional counselors who endorse higher levels of perfectionism are more likely to experience professional burnout (D'Souza et al., 2011; Fye et al., 2018; Moate et al., 2016). Furthermore, among professional counselors, both burnout and secondary traumatic stress have been positively associated with both EC perfectionism and PS perfectionism (Holden, 2021). Aside from burnout, perfectionism can lead to anxiety, depression, and obsessive–compulsive disorder (Limburg et. al, 2017; Rasmussen & Troilo, 2016; Zhou et al., 2013). Treating an individual's perfectionism could be better than treating specific psychopathology because treating the perfectionism could reduce symptoms across multiple disorders (Bieling et al., 2004; Egan et al., 2011; Limburg et. al. 2017). Both family systems theory and cognitive behavioral therapy have been shown to be effective in treating individuals with perfectionism (Limburg et. al., 2017; Rasmussen & Troilo, 2016; Suh et. al., 2019). For example, family systems theory can help with deeply embedded family expectations or parental criticisms and CBT can help with maladaptive thinking.

Also, in support of our hypothesis, we found that compassion satisfaction is inversely related to socially prescribed perfectionism for marriage and family therapists. This was also found by Holden (2021) among a sample of professional counselors. When marriage and family therapists score higher on compassion satisfaction and experience the benefits of working within the helping profession, it reduces the impact of socially prescribed perfectionism, meaning MFTs might be less likely to self-impose perfectionistic standards or be preoccupied with the evaluation and expectations of others. Compassion satisfaction was inversely associated with EC perfectionism. Thompson et al. (2014) found that compassion satisfaction was also inversely related to levels of burnout reported. This, taken together with the current study's findings, may indicate that the ability to recognize the benefits of one's work is important in maintaining a positive well-being. This study has helped bring to light the negative impact that high levels of perfectionism can have on an individual working in the field of marriage and family therapy. Given this negative impact, marriage and family therapists need to

maintain supportive relationships within the field that can help them identify the benefits of their work and remind them that help is available if they need it. In support of this idea, Zhou et al. (2013) found that "perceived social support may have a protective effect in preventing perfectionists from experiencing depression and anxiety" (p. 1141).

Years of Work and Burnout

Another important finding of the current study was related to years of work. As hypothesized, years of work as an MFT holds an inverse relationship with level of burnout. This finding is consistent with previous literature. Thompson et al. (2014) found that when counselors rate their work environment positively, they report less compassion fatigue and less burnout. This could be due to several factors. For example, experienced counselors may have worked their way up to a position with more positive working conditions, or they may experience a sense of increased personal accomplishment the longer they are in practice (Thompson et al., 2014). Therapists may develop more appropriate, useful, and protective self-care strategies the longer they are in the field (Brown & Pashniak, 2018). Additionally, more experience could lead to clinicians being more assertive (Suzuki et al., 2009), and as years of experience increase, clinicians may have the ability to choose between working within an in-patient or private practice setting (Sprang et al., 2007). Finally, it is worthy to consider that individuals who experience high levels of burnout simply leave the field, contributing to the documented association between years of work and burnout. Marriage and family therapists—particularly those earlier in their careers—should be intentional to recognize early signs of burnout and seek support as they navigate the potential stresses of their work environment.

Gender Differences in Perfection

Our final hypothesis was partially supported; this study found that women demonstrated statistically significantly higher scores in self-oriented perfectionism, or PS perfectionism, than men, but not in scores of others-oriented perfectionism or socially prescribed perfectionism (EC perfectionism). Another study found similar results where women suffer from impostor phenomenon (IP) more so than men, and perfectionism was related to IP (Cusak et al., 2013). Cusak et al. (2013) stated, "perfectionism was strongly related to IP scores with higher scores of perfectionism being linked with higher scores of the IP" (Cusak et al., 2013, p. 78). Given that the current study's participants were 71% female and that there is a large gender gap in the field of marriage and family therapy, this is an important finding. According to data from the Integrated Postsecondary Education Data System (IPEDS), females (84.1%) are the most common gender with a degree in this field (Data USA, n.d. 2021). With women being more likely to go into the field and more likely to be perfectionists, we believe it is important for graduate programs in MFT to focus discussions within the supervision process around perfectionistic ideologies and thinking. It may be important to recognize perfectionism in marriage and family therapy graduate students and help them navigate academic demands in a supportive way (Cowie et al. 2018) so they are also ready to navigate career demands once they enter the workforce. Program supervisors can assist students in identifying realistic expectations, setting reasonable goals, and openly sharing frustrations and worries with them and their colleagues (Gnilka & Novakovic, 2017). Additionally, marriage and family therapists would benefit from continuing education that provides opportunities to explore ways to recognize and combat perfectionism in the workplace.

Limitations and Future Directions

Several limitations to this study should be noted. First, this sample was largely Caucasian and female, which may not accurately represent the experiences of all marriage and family therapists. Additionally, the average age of participants was 48 and average years of work experience was 16, indicating a relatively seasoned group of clinicians. It worthy to consider that individuals who experienced high levels of burnout or high levels of perfectionism—or both—may have already left the field and therefore were not represented in this study. Finally, this study did not investigate the population with whom participants worked. Clinicians working in settings more likely to serve trauma populations are consider to be at greater risk for experiencing compassion fatigue, and further research is needed to understand the relationship between perfectionism and compassion fatigue among clinicians who specialize in serving clients with trauma. Future research should also explore what affect compassion fatigue and perfectionism have on life and relationship satisfaction. Additionally, the current study focused on Hewitt and Flett's (1991) multidimensional model of perfectionism; in the future it could be beneficial to include other types of perfectionism such as self-critical and narcissistic perfectionism (Smith et al., 2016).

Conclusion

Few research studies have addressed the role perfectionism plays among professionals in the mental health professions, including marriage and family therapy; the current study uncovered several important aspects that must be considered in graduate training and the workplace environment. First, self-oriented perfectionism and socially oriented

perfectionism are correlated with burnout and secondary traumatic stress. Additionally, when therapists can see the benefits of their work, they are less likely to hold themselves to perceived pressure from themselves or others. Time is also a factor; the more experience MFTs have in their career, the less likely they will experience burnout. Finally, women are more likely to set perfectionistic standards for themselves than men, which can increase risk of experiencing compassion fatigue symptomology. Further empirical study on the effects of perfectionism and compassion for mental health professionals are warranted.

Declarations

Conflict of interest If individuals chose not to give consent or were not 18 years of age or older, they could exit out of the survey. The authors have no conflicts of interest to declare.

Informed consent This human subjects research study was approved by the Institutional Review Board at the authors' institution. The web links and QR codes used to recruit participants could be clicked or scanned and would take individuals to an informational web page describing the study where they had the option to indicate informed consent and that they were 18 years of age or older. If consent was given and being 18 or older was confirmed, participants could proceed to the survey questions.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Association

Arkowitz, S. (1990). Perfectionism in the supervisee. *Psychoanalysis & Psychotherapy, 8*, 51–68.

Ashby, J., Rice, K., & Kutchins, C. (2008a). Matches and mismatches: Partners, perfectionism, and premarital adjustment. *Journal of Counseling Psychology, 55*, 125–132. https://doi.org/10.1037/0022-0167.55.1.125

Ashby, J., Rice, K., & Kutchins, C. (2008b). Matches and mismatches: Partners, perfectionism, and premarital adjustment. *Journal of Counselling Psychology, 55*, 125–132. https://doi.org/10.1037/0022-0167.55.1.125

Baird, S., & Jenkins, S. R. (2003). Vicarious traumatization, secondary traumatic stress, and burnout in sexual assault and domestic violence agency staff. *Violence and Victims, 18*, 71–86. https://doi.org/10.1891/vivi.2003.18.1.71

Bieling, P. J., Summerfeldt, L. J., Israeli, A. L., & Antony, M. M. (2004). Perfectionism as an explanatory construct in comorbidity of Axis I disorders. *Journal of Psychopathology and Behavioral Assessment, 26*(3), 193–201. https://doi.org/10.1023/B:JOBA.0000022112.27186.98

Blankstein, K. R., Dunkley, D. M., & Wilson, J. (2008). Evaluative concerns and personal standards of perfectionism: Self-esteem as a mediator and moderator of relations with personal and academic needs and estimated GPA. *Current Psychology, 27*, 29–61. https://doi.org/10.1007/s12144-008-9022-1

Bojanic, Z., Sakan, D., & Nedeljkovic, J. (2018). Personality traits as predictors of perfectionism. *Facta Universitatis, 16*(1), 57–71.

Brown, C. A., & Pashniak, L. M. (2018). Psychological health and occupational therapists: Burnout, engagement and work addiction. *Work, 60*, 513–525. https://doi.org/10.3233/WOR-182759

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.

Cowie, M. E., Nealis, L. J., Sherry, S. B., Hewitt, P. L., & Flett, G. L. (2018). Perfectionism and academic difficulties in graduate students: Testing incremental prediction and gender moderation. *Personality and Individual Differences, 123*, 223–228. https://doi.org/10.1016/j.paid.2017.11.027

Data USA. (2021). *Marriage and family therapy*. Retrieved April 19, 2021 from https://datausa.io/profile/cip/marriage-family-therapy#demographics

Devilly, G. J., Wright, R., & Varker, T. (2009). Vicarious trauma, secondary traumatic stress or simply burnout? Effect of trauma therapy on mental health professionals. *Australian and New Zealand Journal of Psychiatry, 43*, 373–385. https://doi.org/10.1080/00048670902721079

D'Souza, F., Egan, S. J., & Rees, C. S. (2011). The relationship between perfectionism, stress and burnout in clinical psychologists. *Behaviour Change, 28*(1), 17–28. https://doi.org/10.1375/bech.28.1.17

Duli, S. (2016). Years of work experience, an important predictor of burnout in special education. *American Scientific Research Journal for Engineering Technology and Sciences, 17*(1), 318–322.

Dunkley, D. M., Berg, J. L., & Zuroff, D. C. (2012). The role of perfectionism in daily self-esteem, attachment, and negative affect. *Journal of Personality, 80*, 633–663. https://doi.org/10.1111/j.1467-6494.2011.00741.x

Dunkley, D. M., Blankstein, K. R., Halsall, J., Williams, M., & Winkworth, G. (2000a). The relation between perfectionism and distress: Hassles, coping, and perceived social support as mediators and moderators. *Journal of Counseling Psychology, 47*, 437–453. https://doi.org/10.1037/0022-0167.47.4.437

Dunkley, D. M., Blankstein, K. R., Masheb, R. M., Grilo, C. M., Personal & standards and evaluative concerns of clinical perfectionism: A reply to Shafran et al. (2002, 2003) and Hewitt et al. (2003). (2006). *Behavior Research and Therapy, 44*, 63–84. https://doi.org/10.1016/j.brat.2004.12.004

Dunn, J. C., Whelton, W. J., & Sharpe, D. (2006). Maladaptive perfectionism, hassles, coping, and psychological distress in university professors. *Journal of Counseling Psychology, 53*(4), 511–523. https://doi.org/10.1037/0022-0167.53.4.511

Egan, S. J., Wade, T. D., & Shafran, R. (2011). Perfectionism as a transdiagnostic process: A clinical review. *Clinical Psychology Review, 31*(2), 203–212. https://doi.org/10.1016/j.cpr.2010.04.009

Figley, C. R. (2003). *Compassion fatigue: An introduction.* Traumatology Institute at Tulane University (New Orleans). Retrieved from https://sites.google.com/site/charlesfigley/Home/traumatologyinstitute/research/cf

Figley, C. R. (1995a). Compassion fatigue as secondary traumatic stress disorder: An overview. In C. R. Figley (Ed.), *Compassion fatigue: Coping with secondary traumatic stress disorder* (pp. 1–20). Brunner/Mazel.

Figley, C. R. (1995b). Compassion fatigue: Toward a new understanding of the costs of caring. In B. H. Stamm (Ed.), *Secondary traumatic stress: Self-care issues for clinicians, researchers, and educators* (pp. 3–28). Sidran Press.

Figley, C. R. (2002). Compassion fatigue: Psychotherapists chronic lack of self-care. *Journal of Clinical Psychology, 58*, 1433–1441. https://doi.org/10.1002/jclp.10090

Figley, C. R., & Roop, R. G. (2006). *Compassion fatigue in the animal-care community*. Humane Society Press.

Flett, G. L., & Hewitt, P. L. (2002). Perfectionism and maladjustment: An overview of theoretical, definitional, and treatment

issues. In G. L. Flett & P. L. Hewitt (Eds.), *Perfectionism: Theory, research, and treatment* (pp. 5–31). American Psychological Association.

Frost, R. O., Marten, P. A., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research, 14*, 449–468. https://doi.org/10.1007/BF01172967

Fye, H. J., Gnilka, P. B., & McLaulin, S. E. (2018). Perfectionism and school counselors: Difference in stress, coping, and burnout. *Journal of Counseling & Development, 96*, 349–360. https://doi.org/10.1002/jcad.12218

Gnilka, P., Ashby, J., & Noble, C. (2012). Multidimensional perfectionism and anxiety: Differences among individuals with perfectionism and tests of a coping-mediation model. *Journal of Counseling & Development, 90*, 427–436. https://doi.org/10.1002/j.1556-6676.2012.00054.x

Gnilka, P. B., & Novakovic, A. (2017). Gender differences in STEM students perfectionism, career search self-efficacy, and perception of career barriers. *Journal of Counseling & Development, 95*(1), 56–66. https://doi.org/10.1002/jcad.12117

Gotwals, J. K., Stoeber, J., Dunn, J. G., & Stoll, O. (2012). Are perfectionistic strivings in sport adaptive? A systematic review of confirmatory, contradictory, and mixed evidence. *Canadian Psychology, 53*, 263–279. https://doi.org/10.1037/a0030288

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis* (7th ed.). Pearson.

Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology, 60*, 456–470. https://doi.org/10.1037//0022-3514.60.3.456

Hewitt, P. L., Flett, G. L., Sherry, S. B., Habke, M., Parkin, M., Lam, R. W., et al. (2003). The interpersonal expression of perfection: Perfectionistic self-presentation and psychological distress. *Journal of Personality and Social Psychology*. https://doi.org/10.1037/0022-3514.84.6.1303

Hill, R. W., McIntire, K., & Bacharach, V. R. (1997). Perfectionism and the Big Five factors. *Journal of Social Behavior and Personality, 12*, 257–270.

Holden, C. L. (2019). The perfect counsellor: Personality factors and multidimensional perfectionism. *British Journal of Guidance and Counselling*. https://doi.org/10.1080/03069885.2019.1682122

Holden, C. L. *Perfectionism, compassion, and stress among professional counselors.* Manuscript submitted for publication (2021).

Jennings, L. W., & Young, D. M. (1988). Forecasting methods for institutional research. In B. Yancey (Ed.), *New directions for institutional research: Applying statistics in institutional research* (pp. 77–96). Jossey-Bass Publishers.

Khodarahimi, S. (2010). Perfectionism and Big-five model of personality in an Iranian example. *International Journal of Psychology and Counselling*, *2*(4), 72–79. http://www.academicjournals.org/IJPC

Limburg, K., Watson, H. J., Hagger, M. S., & Egan, S. (2017). The relationship between perfectionism and psychopathology: A meta-analysis. *Journal of Clinical Psychology, 73*(10), 1301–1326. https://doi.org/10.1002/jclp.22435

Ludick, M., & Figley, C. F. (2017). Toward a mechanism for secondary trauma induction and reduction: Reimagining a theory of secondary traumatic stress. *Traumatology, 23*, 112–123. https://doi.org/10.1037/trm0000096

Mardia, K. V. (1985). Mardia's test of multinormality. In S. Kotz & N. L. Johnson (Eds.), *Encyclopedia of statistical sciences* (Vol. 5, pp. 217–221). Wiley.

Maslach, C. (1982). *Burnout: The cost of caring*. Prentice Hall.

Melamed, S., Ugarten, U., Shirom, A., Kahana, L., Lerman, Y., & Froom, P. (1999). Chronic burnout, somatic arousal and elevated salivary cortisol levels. *Journal of Psychosomatic Research, 46*(6), 591–598. https://doi.org/10.1016/s0022-3999(99)00007-0

Miller, K. I., Stiff, J. B., & Ellis, B. H. (1988). Communication and empathy as precursors to burnout among human service workers. *Communication Monographs, 55*, 250–265. https://doi.org/10.1080/03637758809376171

Moate, R. M., Gnilka, P. B., West, E. M., & Burns, K. L. (2016). Stress and burnout among counselor educators: Differences between adaptive perfectionists, maladaptive perfectionists, and nonperfectionists. *Journal of Counseling & Development, 94*, 161–171. https://doi.org/10.1002/jcad.12073

Moulden, H. M., & Firestone, P. (2007). Vicarious traumatization: The impact on therapists who work with sexual offenders. *Trauma Violence & Abuse, 8*(1), 67–83. https://doi.org/10.1177/1524838006297729

Ramirez, A. J., Graham, J., Richards, M. A., Cull, A., Gregory, W. M., Leaning, M. S., & Timothy, A. R. (1995). Burnout and psychiatric disorder among cancer clinicians. *British Journal of Cancer, 71*(6), 1263–1269. https://doi.org/10.1038/bjc.1995.244

Rasmussen, K. E., & Troilo, J. (2016). It has to be perfect: The development of perfectionism in the family system. *Journal of Family Theory & Review, 2*(8), 154–172. https://doi.org/10.1111/jftr.12140

Rzeszutek, M., Partyka, M., & Golab, A. (2015). Temperament traits, social support, and secondary traumatic stress disorder symptoms in a sample of trauma therapists. *Professional Psychology: Research and Practice, 46*(4), 213–220. https://doi.org/10.1037/pro0000024

Sacco, T. L., Ciurzynski, S. M., Harvey, M. E., & Ingersoll, G. L. (2015). Compassion satisfaction and compassion fatigue among critical care nurses. *Critical Care Nurse, 35*(4), 32–42. https://doi.org/10.4037/ccn2015392

Shafran, R., Cooper, Z., & Fairburn, C. G. (2003). Clinical perfectionism is not multidimensional perfectionism: A reply to Hewitt, Flett, Besser, Sherry, & McGee. *Behavior Research and Therapy, 41*, 1217–1220. https://doi.org/10.1016/s0005-7967(03)00020-2

Sherry, A., & Henson, R. K. (2005). Conducting and interpreting canonical correlation analysis in personality research: A user-friendly primer. *Journal of Personality Assessment, 84*(1), 37–48. https://doi.org/10.1207/s15327752jpa8401_09

Sherry, S. B., Hewitt, P. L., Sherry, D. L., Flett, G. L., & Graham, A. R. (2010). Perfectionism dimensions and research productivity in psychology professors: Implications for understanding the (mal) adaptiveness of perfectionism. *Canadian Journal of Behavioural Science, 42*, 273–283. https://doi.org/10.1037/a0020466

Slaney, R. B., & Ashby, J. S. (1996). Perfectionists: Study of a criterion group. *Journal of Counseling and Development, 74*, 393–398. https://doi.org/10.1002/j.1556-6676.1996.tb01885.x

Slaney, R., Rice, K., Mobley, M., Trippi, J., & Ashby, J. (2001). The revised almost perfect scale. *Measurement and Evaluation in Counseling and Development, 34*, 130–145. https://doi.org/10.1080/07481756.2002.12069030

Smith, M. M., Saklofske, D. H., Stoeber, J., & Sherry, S. B. (2016). The Big three perfectionism scale: A new measure of perfectionism. *Journal of Psychoeducational Assessment, 34*, 670–687. https://doi.org/10.1177/0734282916651539

Smith, M. M., Sherry, S. B., Vidovic, V., Saklofske, D. H., Stoeber, J., & Benoit, A. (2018). Perfectionism and the five-factor model of personality: A meta-analytic review. *Personality and Social Psychology Review*. https://doi.org/10.1177/1088868318814973

Sodeke-Gregson, E. A., Holttum, S., & Billings, J. (2013). Compassion satisfaction, burnout, and secondary traumatic stress in UK therapists who work with adult trauma clients. *European Journal of Psychotraumatology*. https://doi.org/10.3402/ejpt.v4i0.21869

Stamm, B. H. (2009). Professional Quality of Life: Compassion Satisfaction and Fatigue Version 5 (ProQOL). Retrieved from http://www.proqol.org/ProQol_Test.html

Stoeber, J. (2014). Multidimensional perfectionism and the DSM-5 personality traits. *Personality and Individual Differences, 64*, 115–120. https://doi.org/10.1016/j.paid.2014.02.031

Stamm, B. H. (2010). *The concise ProQOL manual* (2nd ed.). ProQOL.org.

Stoeber, J., & Otto, K. (2006). Positive conceptions of perfectionism: Approaches, evidence, challenges. *Personality and Social Psychology Review, 10*, 295–319. https://doi.org/10.1207/s15327957pspr1004_2

Stoeber, J., & Stoeber, F. S. (2009). Domains of perfectionism: Prevalence and relationships with perfectionism, gender, age, and satisfaction with life. *Personality and Individual Differences, 46*, 530–535. https://doi.org/10.1016/j.paid.2008.12.006

Stosny, S. (2004). Compassion power: Helping families reach their core value. *The Family Journal Counseling and Therapy for Couples and Families, 12*(1), 58–63. https://doi.org/10.1177/1066480703259041

Suddarth, B. H., & Slaney, R. B. (2001). An investigation of the dimensions of perfectionism in college students. *Measurement and Evaluation in Counselling and Development, 34*, 157–165. https://doi.org/10.1080/07481756.2002.12069032

Suh, H., Sohn, H., Kim, T., & Lee, D. (2019). A review and meta-analysis of perfectionism interventions: Comparing face-to-face with online modalities. *Journal of Counseling Psychology, 66*(4), 473–486. https://doi.org/10.1037/cou0000355

Thompson, I. A., Amatea, E. S., & Thompson, E. S. (2014). Personal and contextual predictors of mental health counselors compassion fatigue and burnout. *Journal of Mental Health Counseling, 36*(1), 58–77.

Zhou, X., Zhu, H., Zhang, B., & Cai, T. (2013). Perceived social support as moderator of perfectionism, depression, and anxiety in college students. *Social Behavior and Personality: An International Journal, 41*(7), 1141–1152. https://doi.org/10.2224/sbp.2013.41.7.1141