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The Relationship Between Trauma and Well-Being:

Moral Emotions in Sex-Trafficked Women

Gina M. Scarsella

A dissertation submitted in partial fulfillment

of the requirements for the degree of

Doctor of Philosophy

In

Clinical Psychology

Seattle Pacific University

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Abstract

Cognitive models of PTSD implicate attention to threat, negative social cognition, and behavioral avoidance in perpetuating symptoms. In contrast, moral elevation and gratitude are positive socio-moral emotions theorized to facilitate attention to positive features of one's social context and prosocial approach behavior. No research has examined the relevance of positive moral emotions in the well-being of sex-trafficked women, who may be prone to PTSD symptoms and low positive socio-moral emotions. I tested trait gratitude, elevation, and moral purity as predictors of well-being and moderators of PTSD symptoms on well-being. Participants included sex-trafficked ($n = 16$) and college ($n = 50$) women. PTSD diagnosis and symptom severity were determined using the ADIS-5 and PCL-5. Congruent with previous studies, higher PTSD symptoms predicted lower well-being in both samples. As predicted, the trafficked sample had higher prevalence of PTSD, higher PTSD symptom scores, higher negative emotion, and lower well-being than the college sample, and marginally lower trait gratitude. Unexpectedly, the trafficked sample demonstrated significantly higher moral purity than the college sample. Gratitude predicted well-being in the overall ($b = 2.57, SE = .48, p < .00$) and control ($b = 3.04, SE = .35, p < .00$) samples but not in the sex-trafficked sample ($b = 1.56, SE = 1.37, p = .28$), while moral elevation predicted well-being in all samples. Moral elevation buffered effects of PTSD in overall ($b = .05, SE = .03, p = .05$) and sex-trafficked ($b = .09, SE = .05, p = .09$) samples, while moral purity buffered effects of PTSD in the college sample ($b = .73, SE = .33, p = .03$). Additionally, I interviewed the sex-trafficked women about what they are thankful for, what inspires them, and what

makes them feel morally clean or unclean, which provided a more nuanced, qualitative level of understanding these women's experiences. This research provides a preliminary investigation of not only the trauma-related symptoms of sex-trafficked women, but also their positive moral emotions which may serve a protective role and may ultimately contribute to their resilience.

Chapter I:

Introduction and Literature Review

Purpose

The purpose of my research is to examine the unique and multiplicative effects of Posttraumatic Stress Disorder (PTSD) symptoms and positive moral emotions on well-being in a sample of women who have been trafficked for sex, and in a comparison sample of college women. Currently, there exists little research in the field of psychology that examines the mental health of those who have been sex-trafficked (e.g., Yakushko, 2009). This may be a reflection of the greater society's lack of awareness of sex trafficking and its existence in the United States. Human trafficking, more broadly, has only recently become an area of focus and concern for the United States government in the 1990s (Cecchet, 2012), and in more recent years has come into the awareness of the American public. Because of the lack of psychological research on sex trafficking, there are no well-established treatment guidelines for mental health providers that are client specific and properly trauma-informed. Before that is possible, basic research with this population must elucidate the psychological struggles and strengths of these women. I aim to investigate the effects of symptoms trauma-related symptoms on well-being in sex-trafficked women and how specific emotion-related traits may alter this relationship. Existing research clearly demonstrates that trauma has a negative effect on well-being in other populations (e.g., Kashdan, Uswatte, & Julian, 2006; Zatzick, 1997).

Knowledge about what moderates the effects of trauma on survivors of sex trafficking may help better inform providers about which individuals may be more vulnerable to the effects of trauma and Posttraumatic Stress Disorder (PTSD). In this

study, I aim to characterize a small sample of sex-trafficked women in comparison to a control sample, and to compare the two samples with regard to trauma-related symptoms, moral emotions, and well-being. I also examine whether trait-like experience of certain moral emotions (i.e., gratitude, moral elevation) and an implicit sense of moral purity can buffer against the negative effects of trauma on well-being in sex-trafficked women. Prior to testing these relationships, I review human trafficking and its effects, and provide a brief overview of sex trafficking, PTSD and relevant theoretical models, and the effects of PTSD.

Literature Review

Human trafficking and its effects on health. More people are living as slaves in the contemporary world than ever before (Skinner, 2008). Human trafficking is possibly one of the most prevalent forms of slavery in today's world, with millions of individuals enslaved (Schauer & Wheaton, 2006); recent estimates suggest that around 20.9 million individuals are trafficked each across the world (International Labour Organization, 2012). More specifically, United States estimates of National Human Trafficking Hotline calls identified 31,659 cases from 2007 to 2016, with 73% of these cases falling under the category of sex-trafficking (Hotline Statistics, n.d.). Human trafficking is defined by the United States Congressional Trafficking Victims Protection Act (TVPA) of 2000 as the "recruitment, harboring, transportation, provision, or obtaining of a person for labor or services through the use of force, fraud, or coercion for the purpose of subjection to involuntary servitude, peonage, debt bondage, or slavery" (Trafficking in Persons Report, 2016, p. 9). It denies individuals their basic human rights and freedoms, evolving as a complex, global epidemic associated with health risks, violence, and crime (Reid, 2012).

Trafficking constitutes a 32-billion-dollar industry per year (Feingold, 2005), with United States citizens more commonly trafficked within country borders than foreign nationals (Hughes, 2007). With the drastic increase in the prevalence of trafficking in recent years, a noticeable gap in knowledge has emerged in regards to the psychological effects of sex trafficking and how best to assist survivors in mental health care.

Victims of human trafficking (not limited to sex trafficking) experience significant threats to their physical and psychological well-being. Trafficked individuals are, by definition, forced into unwanted situations and often must cope with unhealthy, dangerous, and unpredictable conditions (Hughes & Denisova, 2001). These individuals may experience malnutrition, sleep deprivation, significant levels of stress, dangerous travel conditions, physical and sexual violence, and dangerous work environments; healthcare is often delayed because of the invisibility and powerlessness of trafficked persons, exacerbating these conditions (Barrows & Finger, 2008; Dovydaitis, 2010). Some reports have described symptoms associated with trafficking to be similar to those of torture victims; including diffuse psychosomatic and psychological forms of distress, psychoactive substance use, relationship problems, and mental or physical problems related to sexually transmitted infections (Yakushko, 2009). Dovydaitis (2010) compiled an extensive list of common health problems that victims of human trafficking may encounter. Resulting problems range from physical health problems such as chronic pain, cigarette burns, complications from unsafe abortions, contusions, fractures, gastrointestinal problems, headaches, oral health problems, pelvic pain, sexually transmitted infections, unhealthy weight loss, unwanted pregnancy, and vaginal pain, to psychological problems such as anxiety, depression, posttraumatic stress disorder, and

suicidal ideation. In addition, victims may feel a range of distressing emotional responses from guilt and shame to anger and suspicion.

Defining sex trafficking and its effects on health. Whereas human trafficking has been linked to the aforementioned negative effects on well-being, sex trafficking constitutes a particularly pernicious domain in the human trade because of its highly interpersonal and invasive nature. The TVPA (2000) defines sex trafficking as "recruitment, harboring, transportation, provision, or obtaining of a person for the purpose of a commercial sex act" (p. 1470) where a commercial sex act is "any sex act on account of which anything of value is given to or received by any person" (p. 1469). Shared Hope International (2010) estimates of between 100,000 and 300,000 Americans under 18 to be at risk of specifically being sex-trafficked or commercially sexually exploited in some way, with youths between 11 and 14 years old being the most vulnerable (Hom & Woods, 2013; Kotrla, 2010). Sex trafficking of children and adolescents under the age of 18, typically referred to as domestic minor sex trafficking (Clawson & Goldblatt Grace, 2007), is rapidly gaining attention. Research on the psychological aspects of sex trafficking is particularly relevant in the Seattle area; the Seattle Police Department (SPD) estimates that approximately 300 to 500 girls are involved in sex trafficking at any given time (Boyer, 2008). Seattle is not only convenient for such activity because of its status as a port city, but also because of its prime location along the I-5 corridor and accessibility when crossing national borders to Mexico and Canada (Hobbs, 2011). Not only are children vulnerable to sex trafficking, but adults as well; the National Human Trafficking Hotline documented over 5,000 cases of sex

trafficking with over 3,000 of these being individuals over the age of 18 (National Human Trafficking Hotline, n.d.).

Women involved in sex trafficking encounter many traumatic experiences in their daily lives. Pimps recruit women into sex trafficking, often exploiting their physical and emotional needs by using starvation, sleep and protein deprivation, hyperarousal, unexpected sexual violence, and creating learned helplessness (e.g., Schwartz, Williams, & Farley, 2007). Due to the lack of relevant research on the relational dynamics between trafficker and trafficked, some researchers have attempted to extrapolate from the literature on victim-perpetrator relationships (Reid, 2010). Those at risk of sex trafficking have often experienced prior abuse or introduction to substances, controlled in some violent or non-violent way, or otherwise exploited (Hom & Woods, 2010). During the early stages of pimp enculturation, these women often feel trapped, hopeless, and exploited, and may experience a conflicted social attachment or “trauma bond” with the pimp, trafficker, or oppressor as a reaction to the psychological trauma. A trauma bond, in which an individual who is threatened, abused, or beaten forms a significant emotional attachment to the perpetrator, is characterized by a power imbalance and alternating behaviors of perceived love and violence by the perpetrator (Carnes, 1997; Dutton & Painter, 1981; 1993). In the short run, a trauma bond can be seen as a way of coping with the physical and emotional pain involved in the present; however, in the long run, it binds the oppressed, traumatized individual to relationships characterized by exploitation, fear, and danger (Carnes, 1997). In the case of sex trafficking, traffickers often lure girls and women (and in some cases, boys) into “the life” (i.e., sex slavery) by promoting unrealistic aspirations (“Sold a dream and you’re paying for it, but the dream never

happens”); Organization for Prostitution Survivors, 2015; Carnes, 1997). For instance, the pimp may groom a girl or woman and then eventually directly tell her to sell her body for sex so they can eventually live a high-roller lifestyle together in the future. In this sort of trauma bond, the victim is often physically captured by the threat of death and suffering, and psychologically entranced by the hope of a prosperous future and a loving relationship (i.e., alternating violent and loving behavior; Carnes, 1997; Dutton & Painter, 1993). The trauma bond is therefore traumatic in itself because it inevitably means the victim will likely stay in the dangerous, hopeless lifestyle of sex trafficking longer than she might otherwise.

The traumatic experience of sex trafficking may lead to psychological symptoms of posttraumatic stress disorder and related problems. The development of PTSD in sex-trafficked women can be likened to that of survivors of rape, domestic violence, and oppression (Hardy, Compton, & McPhatter, 2013). However, because of the additional influences of captivity and isolation, survivors of sex trafficking warrant specific and unique care (Palmer, 2010). Sex trafficking may contribute to a presentation of "complex trauma," a term first coined by Herman (1992) which describes traumatic experiences that occur for an extended period of time and may happen repeatedly, often in relational contexts. In sex trafficking, this may typically consist of the direct experience of and witnessing of repeated instances of forced and risky sexual activity, physical abuse, psychological coercion, negative experiences with dangerous substances, and life-threatening ultimatums. In addition, the experience of the trauma bond may incite an unconscious effort towards seeking out similarly destructive relationships in the future (Carnes, 1997). Furthermore, robust research has demonstrated the pathway from trauma

and PTSD to substance abuse and dependence, to criminal behavior (e.g., Fleming, Simpson, & Presecan, 2013) and, consequently, incarceration. In other words, women who experience interpersonal trauma from multiple, varied experiences (e.g., sex trafficking, rape, domestic violence) have a significant chance of experiencing PTSD, engaging in substance use and maladaptive coping to avoid re-experiencing symptoms, therefore increasing one's likelihood of involvement in criminal activity leading to incarceration. Thus, better understanding of effects of traumatic stress symptoms in women trafficked for sex may lead to downstream effects on other problems such as incarceration.

There is a significant incongruence between the current state of research and the prevalence of human trafficking within the United States, highlighting the importance and relevance of research on the effects of modern-day slavery on mental health and psychological well-being. Sex-trafficked women (or women "in the life") may experience physical and psychological symptoms as a result of associated multilayered, complex trauma and trauma bonding with their traffickers and pimps. Victims may experience particular risk for PTSD due to the unique, synergistic effects of captivity, isolation, and trauma (i.e., physical, sexual, emotional) of sex trafficking (Palmer, 2010), which is characteristically invasive and interpersonal in nature (Breslau, Kessler, & Chilcoat, 1998; Schumm, Briggs-Phillips, & Hobfall, 2006). However, very little research has examined the impact of PTSD in the context of survivors of sex trafficking. Nonetheless, research on PTSD outside this population may be of relevance to trafficked women. Therefore, in the following section, I focus on PTSD, relevant psychological theories, and PTSD specifically in relation to psychological well-being.

Posttraumatic stress disorder (PTSD). Many aspects of the sex trade are traumatic and likely to cause PTSD. First and foremost, to be diagnosed with PTSD a person must have been exposed to threatened or actual death, serious injury, or sexual violence, whether experienced directly, witnessed in others, or learned about relevant to the traumatic experience of a loved one (Diagnostic and Statistical Manual of Mental Disorders 5; *DSM-5*; American Psychological Association, 2013). In addition, the *DSM-5* (APA, 2013) delineates four clusters of symptoms for a diagnosis of PTSD in which the person meets at least one intrusion symptom, one avoidance symptom, two negative alterations in cognitions and mood, and two alterations in arousal and reactivity, simultaneously, for a period of at least one month. The symptoms must cause significant distress or impairment in some domains of life, such as work, socialization, education, or recreation. Intrusion symptoms may include re-experiencing the traumatic event through recurrent involuntary and intrusive memories, traumatic nightmares, dissociation reactions (e.g., flashbacks), intense or prolonged distress upon exposure to trauma-related stimuli, and marked physiological reactivity to trauma-related stimuli. Efforts to avoid reminders of the trauma may include avoidance of trauma-related thoughts or feelings or trauma-related external triggers such as people, places, situations, conversations, objects, or activities. The individual may experience negative alterations in cognitions and mood such as an inability to remember certain parts of the trauma, persistent negative beliefs about the self and the world, persistent blame related to what caused the traumatic event directed towards the self or others, markedly diminished interest in activities, feelings of detachment or alienation from others, and a constricted range of affect in which it is difficult to experience positive emotions. Finally, an individual may experience

alterations in arousal and reactivity such as irritability and aggression, self-destructive or reckless behavior, hypervigilance, exaggerated startle response, problems concentrating, and sleep disturbance.

With regard to sex-trafficked women, the criterion related to trauma exposure is routinely met due to repeated coercion, sexual, and physical assault, as noted above. In addition to depression, shame-related self-talk, difficulties trusting others, feeling unsafe, and a tendency to feel isolated, these individuals are likely to suffer from PTSD, complicating the picture (Hom & Woods, 2010). This is particularly the case given the interpersonal nature of sex trafficking, and the fact that interpersonal traumas are associated with heightened risk for the development of PTSD (Breslau et al., 1998; Schumm, et al., 2006). Support for this idea comes from a study in Nepal comparing the mental health symptoms of female survivors of non-sex-related human trafficking to those who were specifically sex-trafficked (Tsutsumi, Izutsu, Poudyal, Kato, and Marui, 2008). A greater percentage of females who were involved in sex trafficking met criteria for PTSD, anxiety, and depression than did the percentage of females who were involved in other types of (non-sex-related) human trafficking (e.g., circus, domestic work). Other research supports these findings, suggesting that PTSD is a common presenting mental health concern for females who have been involved in sex trafficking (e.g., Dovydaitis, 2010; Raymond & Hughes, 2001). Hossain, Zimmerman, Abas, Light, and Watts (2010) provided even stronger evidence of the link between sex trafficking and PTSD. They found that high levels of PTSD were still significantly associated with sex trafficking, even while controlling for the impact of premorbid abuse and trauma after the age of 15, suggesting that the experience of sex trafficking has unique effects on the psychological

well-being of these girls and women. In addition, Hossain et al. (2010) found that the relationship between sex trafficking and PTSD did not depend on the amount of time involved in trafficking (i.e., shorter periods of involvement were just as likely to be associated with PTSD). Additionally, time elapsed after involvement in sex trafficking was not associated with significantly reduced levels of PTSD. Each of these findings provide a strong argument for the link between sex trafficking and PTSD.

Theoretical models of PTSD. Before considering how PTSD may impact the lives of sex-trafficked women in particular, I will briefly review three contemporary theoretical models of PTSD, including Foa and Kozak (1986)'s emotional processing theory, Ehlers and Clark (2000)'s cognitive model, and Brewin, Dalgleish, and Joseph (1996)'s dual representation theory. Foa and Kozak (1986)'s emotional processing theory posits that traumas represented in memory (also called a fear structure) can become a source of fear when the memory is interpreted as possessing a threatening meaning. Therefore, the stimuli encoded in the memory that may have previously been emotionally neutral become associated with danger, as are the associated responses. According to this theory, individuals will attend to negative appraisals of the actions and behaviors that occurred during the event, amplifying any perceived sense of incompetence (Foa & Kozak, 1986; Brewin & Holmes, 2003). The core of emotional processing theory is the idea that exposure to the feared memory will decrease anxiety over time, pointing to avoidance as an underlying and perpetuating mechanism involved in PTSD due to negative reinforcement. In addition, emotional processing theory hypothesizes that individuals with more rigid beliefs about the self and the world prior to a traumatic event are more susceptible to PTSD; the more inflexible the belief before therapy, the more

difficult it will be to inhibit via new learning and associations post-trauma (Foa & Kozak, 1986; Brewin & Holmes, 2003). In sum, the major components of this theory include attention to negative stimuli, negative cognitive appraisals, and avoidance of anxiety-provoking stimuli as negative reinforcement.

Ehlers and Clark (2000) have developed a cognitive model of PTSD. The model theorizes that those who have experienced a trauma and go on to develop PTSD may process the trauma-relevant information or cues in ways that increase the perceived possibility of threat. This may occur based on individual differences in cognitive appraisals of the trauma and related outcomes and individual differences in the memory of the event and its congruence with other autobiographical memories (Ehlers & Clark, 2000). It is this combination of negative appraisals made about the event and selective retrieval of memories that are consistent with the appraisals which has been theorized to allow PTSD to persist. In addition to the negative cognitive appraisals of the traumatic events themselves, individuals may appraise the resultant symptoms from trauma as indicative of one's self being permanently altered in a negative way (Ehlers & Clark, 2000). This model also accounts for other maladaptive and dysfunctional coping styles such as rumination (i.e., the heightened and repeated preoccupation with negative details of past difficulties). After a trauma event, an individual may ruminate about how the event could or should have been avoided or about what to do in order to ameliorate the related pain (Ehlers & Clark, 2000). This tendency to ruminate strengthens negative appraisals of the trauma and may also be an inadvertent way of avoiding processing some of the other details of the trauma. Thus, the theory emphasizes attention to threat, negative cognitive appraisals during and after trauma, and avoidance as a way of coping.

Third, according to dual-representation theory (Brewin et al., 1996) trauma memories are thought to be encoded differently than other sorts of memories in a way that dissociates them from other autobiographical memory. The theory assumes two memory systems - verbally accessible memory (VAM) and situationally accessible memory (SAM; Brewin et al., 1996). VAM incorporates what the individual consciously processed during the traumatic event (e.g., threat; Brewin & Holmes, 2003). In VAM, information is contextualized and ascribed meaning which allows it to be readily available for cognitive appraisal (Hagenaars, Brewin, van Minnen, Holmes, & Hoogduin, 2010). VAM is associated with appraisal of the trauma both during and after the event, resulting in primary emotions (during trauma) and secondary emotions (after trauma). SAM is based upon stimuli that only briefly entered into awareness and physical responses during the trauma, making them particularly fundamental in the development of flashbacks and re-experiencing and more difficult to access intentionally. Generally, only primary emotions (e.g., emotions experienced during the trauma) are associated with SAM. In dual-representation theory, PTSD is maintained by way of unprocessed, less accessible information stored in SAM. This information may be inhibited by parallel representations of the trauma and explicit cognitive appraisals in VAM that cause unconscious suppression (e.g., "I cannot handle what happened that night"). To process a trauma fully and experience healing, the information encoded in SAM must be transferred to VAM, to allow integration (Brewin & Holmes, 2003). The primary emphasis within this theory that is relevant to the present research is negative cognitive appraisal and biased attention towards negative stimuli or threat.

While each of these theories takes a unique perspective on the etiology and maintenance of PTSD, three core commonalities emerge: negative cognitive appraisals and attention to negative stimuli or threat, negative emotions, and cognitive and behavioral avoidance of arousing stimuli. Each theory emphasizes that negative cognitive appraisals are made about the self, the world, and the future as a result of trauma, whether during or after. In addition, as a part of this feature, individuals are more likely to attend to threatening stimuli during and after a trauma. Negative emotions occur during the traumatic event and as a result of the memory of the trauma. The emotions are strongly tied to the memories of the event, though the way that memories are encoded is explained differently within each theory. Thirdly, each theory recognizes the influence of cognitive and behavioral avoidance in the maintenance of PTSD.

There is little extant research on PTSD in female sex trafficking survivors within the United States (e.g., Hossain et al., 2010; Tsutsumi et al., 2008); however, the broad commonalities between the three aforementioned theories of PTSD may apply to this population. Because of all of the previously described physical and mental health symptoms that women experience as a result of sex trafficking, it is expected that they also experience heightened attention to threats and negative appraisals of the self and the world, strong negative emotions, and avoidance of relevant stimuli. For example, when engaging in forced sex with a perpetrator or buyer, a sex-trafficked female may feel negative emotions such as sadness, anger, and fear. She may also have negative thoughts that she attributes to herself, the world, and the future based on the action she is forced to engage in, either during or after the event. She may think "I am a bad person," "others cannot be trusted," or "I will never get out of this situation." Third, a girl or woman who

has experienced trauma while in the life is likely going to consciously or unconsciously avoid reminders of the event, such as the smell of a smoky motel room, sexual arousal, or the smell of her pimp's heavy cologne, as these are associated with danger. Although there is little research on PTSD in victims of sex trafficking, there exists a great deal of research about the relationship between PTSD and psychological well-being in other relevant populations.

Effects of PTSD on well-being. In general, a significant amount of literature suggests that the experience of trauma and the development of PTSD have a negative effect on self-reported psychological well-being in specific populations. Kashdan et al. (2006) measured well-being in a sample of Vietnam war veterans using self-report, experience-sampling, and informant reports, finding that individuals with PTSD had significantly diminished well-being compared to those without PTSD. Several other studies have examined the relationship between quality of life in United States war veterans and have found the same results across studies, indicating lower quality of life in those with PTSD (Warshaw et al., 1993; Zatzick, 1997). Specifically, Zatzick (1997) examined the effects of PTSD on six quality of life domains in a sample of male Vietnam veterans and found that those with PTSD had reduced quality of life, diminished physical health and limitations to physical abilities, increased tendencies to engage in violence, and increased rates of unemployment. Similarly, PTSD has been linked with lower quality of life in war refugees (Miller et al., 2002), victims of sexual assault (Zoellner, Goodwin, & Foa, 2000), and general clinical populations (d'Ardenne, Capuzzo, Fakhoury, Jankovic-Gavrilovic, & Priebe, 2005). Furthermore, in a study investigating the effects of exposure to trauma and violence on well-being in African American

women, results indicated that there were direct and indirect effects of trauma and violence on mental health; the greater the amount of exposure to trauma and violence, the lower the well-being (Ford, 2002). Whereas contemporary research has examined the relationship between PTSD and well-being in many populations, it has yet to do so in sex-trafficked women and girls.

The prevalence of PTSD in women with a history of sex trafficking is presumably high based on the aforementioned rationale. Broad commonalities of PTSD are described in emotional processing theory, Ehlers and Clark (2000)'s cognitive model, and dual representation theory, suggesting core characteristics of PTSD. These three commonalities (i.e., negative cognitive processes, negative emotions, avoidance) are thought to be core components of PTSD, and therefore present in sex-trafficked women, warranting consideration of psychological factors that might counteract these tendencies. In the next section, I will describe positive moral emotions as potentially fulfilling such a role.

Positive moral emotions as possible predictors and moderators. PTSD symptoms comprise one major difficulty that may undermine well-being in the lives of sex-trafficked women; existing theories of PTSD primarily focus on negative emotions that are experienced post-trauma in response to internal or external stimuli reminding an individual of a past trauma. Negative emotions such as fear, depression, anger, sadness, and irritability all tend to narrow the focus of attention to possible threat or danger, particularly in PTSD (e.g., McNally, 1996; Williams, Mathews, & MacLeod, 1996). However, major theories often neglect to address positive affect in relation to PTSD.

Fredrickson (2000)'s broaden-and-build theory emphasizes the importance of positive emotions. This theory maintains that positive emotions broaden and build human thought-action repertoires, resulting in more flexible, creative, and unique thought processes (Fredrickson, 1998; 2000). Furthermore, this theory posits that positive emotions can broaden cognitive styles, build new ways of responding in various situations (Folkman & Moskowitz, 2000), and assist in building personal resources (Fredrickson, Tugade, Waugh, & Larkin, 2003) through affiliation with others and learning new associations, increasing behavioral responses. Thus, positive emotions can have an undoing effect on negative emotions, such as anxiety and depression, because they expand thought processes beyond immediate threats and promote approach-related behaviors that lead to building resources. People who succeed in capitalizing on positive emotions are more likely to experience increased resiliency and reduced negative emotion (Algoe & Fredrickson, 2011) because of the undoing effect that positive emotions have on negative ones (Fredrickson, 2000). Further, positive emotions broaden human awareness which allows for increased perception for the context of a situation, rather than simply viewing stimuli as negative or neutral (Fredrickson, 2012). The more a person engages in experiences that elicit positive emotions, the more resiliency that will be built up over time, particularly if practiced daily (Cohn & Fredrickson, 2010). The broaden-and-build model suggests that positive emotions are not only good for short-term effects, but also long-term benefits (Fredrickson, 2000). With a widened focus and increased range of behavior, individuals are more likely to approach situations that they might normally avoid. Thus, positive emotions promote cognitive and behavioral processes that are counter to the perpetuating role of negative emotions in PTSD. The

broaden-and-build theory also hypothesizes that positive emotions not only have an undoing effect on negative emotions within one person, but that they can have an upward spiral or ripple effect where positive emotions reduce the threshold for the experience of other positive emotions in both the self and others.

Positive moral emotions may be ideal examples of positive emotions that broaden and build, and which are relevant to PTSD beyond positive emotion generically. Haidt (2003a) defines moral emotions as "those emotions that are linked to the interests or welfare either of society as a whole or at least of persons other than the judge or agent" (p. 276). They also motivate us toward prosocial rather than anti-social behaviors (Kroll & Egan, 2004), and may happen in response to perception of another's behavior as morally good (e.g., feeling inspired) or bad (e.g., feeling disgusted). Those in response to violation of moral expectations include negatively-valenced emotions such as shame, embarrassment, guilt, and disgust (Rozin, Lowery, Imada, & Haidt, 1999). Moral emotions in response to perceived moral goodness or purity include positively-valenced emotions such as admiration, compassion, gratitude, and moral elevation, the latter two of which I examine in this study. Positively-valenced moral emotions serve to bond people and may be an example of emotions said to broaden and build human thought-action repertoires in domains most relevant to the cognitive, affective, and motivational features that PTSD theories suggest characterize PTSD. Moral emotions such as gratitude, moral elevation, and feelings of moral purity may contribute to well-being or buffer against negative effects of PTSD symptoms on well-being. Below, I review theoretical and empirical reasons to support this as a possibility in sex-trafficked women.

Gratitude. Gratitude is both a pleasant affective state and a virtue or personality characteristic in the form of trait-like proneness to experience or cultivate gratitude (Emmons & Stern, 2013), the latter which I focus on. As an emotional state, gratitude occurs in interpersonal relationships where one person perceives oneself as receiving from another person or force (e.g., God, the universe) something that is not necessarily deserved, earned, or requested by the receiver (Emmons & McCullough, 2003). Gratitude has been described as a universal human trait that is both experienced and expressed cross-culturally in a multitude of ways (Emmons & Stern, 2013).

Research has demonstrated several positive effects of gratitude on general mental health. Emmons and McCullough (2003) conducted several experiments comparing individuals who wrote gratitude journals regularly with individuals who wrote about daily struggles or neutral events. They found several benefits as a result, including increased exercise, decreased physical symptoms, feeling better about life overall, and increased optimism for the near future. Recent studies have also indicated that gratitude helps to improve existing relationships when one partner in an intimate relationship expresses gratitude to the other (Algoe, Fredrickson, & Gable, 2013). Seligman, Steen, Park, and Peterson (2005) confirmed gratitude's causal effects on psychological well-being. In a well-designed study using random assignment and placebo-control, researchers compared examined levels of happiness and depression after five different interventions in five separate conditions (i.e., placebo-control, gratitude visit to another person, three good things per day [gratitude journal], writing about a time that they were “at their best,” using signature strengths in a new way). Results indicated that those in the gratitude journal and using strengths in a new way conditions had higher levels of

happiness and lower levels of depression up to six months later. In addition, those in the gratitude visit condition had higher levels of happiness and lower levels of depression up to one month later.

Beyond these general positive effects, the literature on gratitude shows that it has beneficial effects on cognition, emotion, and behavior in a way that may be particularly relevant to PTSD. One of the core characteristics of PTSD as observed in each of the major theories of the disorder is negative appraisals of situations in one's life (e.g., negative cognitive appraisals; Beck et al., 2013; Ehlers & Clark, 2000), which gratitude may counteract. Foa and Kozak (1986) identified three types of negative cognitions that are hypothesized to be associated with exposure to trauma and to play a role in the development of PTSD: negative thoughts about the self, negative thoughts about the world, and self-blame. Gratitude may particularly address negative thoughts about the world because when someone feels grateful he or she views oneself as receiving something from others that is not necessarily earned or deserved (Emmons & McCullough, 2003), perceiving generous or good characteristics of the giver or others beyond the self (McCullough, Kimeldorf, & Cohen, 2008). Additionally, gratitude predicts increased levels of trust towards third-parties even when they are not highly familiar with the third-party (Dunn & Schweitzer, 2005), contributing to the hypothesis that gratitude assists in making positive appraisals of or facilitating attention to positive features of others and their environment.

There are additional ways that gratitude may affect cognition because of its nature as a positive emotion that may broaden attentional resources and build on ways of thinking about the self, the world, or others. In PTSD, attention is focused on possible

threat stimuli (e.g., trauma-related people, places, objects); therefore, cognitive processes become highly narrowed and the individual becomes less likely to attend to all other stimuli in the situation (e.g., Williams et al., 1996). Negative cognitions derived out of past trauma experiences might plausibly be buffered by regular experiences of gratitude because it attunes one towards positive stimuli, rather than negative, trauma-related stimuli, and therefore may limit access to trauma memories (Foa, Steketee, & Rothbaum, 1989). This outward attentional focus on positive attentional features of one's environment may broaden cognitive repertoires, counteracting the intensive and excessive heightened self-focus that typically characterizes depressive and anxiety disorders (Ingram, 1990), as well as hypervigilance in PTSD. Therefore, there is reason to believe that cognitive features of gratitude might mitigate the negative cognitive effects of PTSD on well-being.

Gratitude also may affect the strong negative emotion associated with PTSD. First, because gratitude is a positive emotion, it likely undoes some of the effects of negative emotion that are associated with PTSD, as the broaden-and-build theory would suggest. McCullough, Emmons, and Tsang (2002) demonstrated that in nonclinical populations, gratitude is associated with lower levels of depression, anxiety, and envy, suggesting that gratitude is contrary to negative emotions and may even buffer against them (Bono & McCullough, 2006). Furthermore, Diana Fosha, the developer of accelerated experiential dynamic psychotherapy (AEDP), theorizes gratitude to be a healing affect that is experienced interpersonally, activating more deeply-rooted emotions such as love and tenderness (Fosha, 2005; Russell & Fosha, 2008). This emotional experience can then catalyze the process of healing from past suffering (Emmons &

Stern, 2013), such as trauma. On the whole, it appears that gratitude has emotionally beneficial effects and may also reduce the effects of negative emotion that is characteristic of PTSD.

Furthermore, a plethora of research demonstrates that gratitude is associated with a specific action tendency or motivation that may be relevant to behavioral avoidance associated with PTSD. When people feel grateful, they experience increased motivation to reciprocate or pay back goodness to the benefactor (Bartlett & DeSteno, 2006). Moreover, gratitude fosters social movement toward others and closeness in relationships by solidifying, affirming, and strengthening them (Emmons & Stern, 2013); in other words, gratitude motivates social approach behavior towards the goal of connecting with others, contrary to the heightened self-focus (Ingram, 1990) and social withdrawal or avoidance associated with anxiety, depression, and PTSD in particular. When comparing participants in a gratitude-induced state with those in an amusement-induced state, Bartlett and DeSteno (2006) found that those who experienced gratitude were more likely to complete extra questionnaires to the benefit of the researcher than were those who experienced amusement. Several other studies have found results consistent with the theory that the evolutionary purpose of gratitude as a motivation for reciprocal altruism (McCullough et al., 2008). Gratitude and its action tendency are thus thought to counteract the characteristic motivation toward social avoidance typical in PTSD (Kashdan et al., 2006). Avoidance behaviors that stem from fear related to traumatic past events often eliminate the opportunity to process or even disconfirm those fears. The cognitively broadening and behaviorally building experience of gratitude, which promotes approach behavior, allows for those opportunities.

Cognitive and emotional processing theories of PTSD (Ehlers & Clark, 2000; Foa & Kozak, 1986; Litz, 1992) provide a rationale for investigating the contribution of gratitude to the psychological well-being of trauma survivors, particularly survivors of sex trafficking. Because gratitude may have positive and pro-social influences as suggested by the broaden-and-build theory, it is likely to have buffering effects in the relationship between PTSD and well-being. Preliminary research shows that gratitude is indeed negatively correlated with the effects of trauma in specific populations. For instance, Vernon, Dillon, and Steiner (2009) measured the amount of current PTSD symptoms that women were experiencing in a sample of self-selected college women. Those who scored higher on a measure of post-trauma gratitude also scored lower on measures of PTSD, even while controlling for trauma severity, trauma history, time since the trauma, and proactive coping style. Such findings imply that gratitude may be a protective factor for women, relevant to the present study. Similarly, in an experience-sampling study in Vietnam war veterans, greater trait gratitude was a predictor of higher hedonic (e.g., happiness, life-satisfaction) and eudaimonic (e.g., experience of meaningful and purposeful activities and relationships) well-being for veterans both with and without PTSD (Kashdan et al., 2006). Therefore, gratitude may moderate the effects of trauma on well-being in the sex-trafficked population as well. It is particularly important to note that even in the midst of suffering and adversity, people may have the capacity to experience a sense of gratefulness (Chun & Lee, 2013).

Beyond the role that gratitude is hypothesized to play in the relationship between trauma and well-being, I also sought to better understand what women in sex trafficking are thankful for. To answer this question, my study draws upon self-determination theory,

which posits basic human psychological needs for freedom and choice (autonomy), a sense of ability to achieve and overcome problems (competence), and social connection and belonging (relatedness; Deci & Ryan, 2000; Grouzet et al., 2005; Kasser, 2002). Goals are determined based on a person's values; Grouzet et al. (2005) identified that goals appear to organize themselves on a circumplex model with the vertical dimension being self-transcendence (goals that go beyond the material self) versus physical (goals that are related to the physical body). The horizontal dimension assesses intrinsic versus extrinsic goals. Goals and pursuits that satisfy the needs described above (e.g., relationships, growth, helping others) are theorized to be inherently fulfilling and satisfying (i.e., intrinsic goals), whereas extrinsic goals such as popularity, attractiveness, and money are not (Deci & Ryan, 2000; Kasser, 2000). Maslow's (1954) humanistic perspective on needs suggests that security and safety goals would fall within intrinsic goals, as they concern basic psychological needs had by all people (Kasser, 2002). Qualitative examination of the sources of sex-trafficked women's gratitude (i.e., whether they spontaneously report gratitude for safety, relationships, children, etc.) would yield rich, nuanced information about their experiences, suggesting possible sources of positive emotional experience, despite the stressors and traumas of their lives.

Moral elevation. Moral elevation (or simply, "elevation") has been identified as the emotional opposite to moral disgust (Haidt, 2000). Elevation is defined as a positively-valenced moral emotion experienced in response to witnessing or recalling a benevolent or otherwise morally beautiful action of another person or persons toward a third party. Elevation is based on the witness' perception that the benefactor is engaging in an unexpected, rare, or self-sacrificial act of benevolence (Algoe & Haidt, 2009). It is

characterized by the subjective feeling of being emotionally uplifted, touched, inspired, or moved (Cova, Deonna, & Sander, 2016; Haidt, 2000;) and is typically elicited by acts of charity, kindness, love, compassion, forgiveness, gratitude, courage, loyalty, and self-sacrifice (e.g., Haidt, 2000, 2003a, 2003b; Pohling & Diessner, 2016). When experienced, elevation causes visceral changes such as a feeling of warmth in the chest, watering of the eyes, a lump in the throat sensation, or goosebumps (Haidt, 2000, 2003a). At the level of neuronal activation, elevation is distinct from admiration, a closely related other-praising emotion triggered by witnessing another person overcoming a challenge and facilitating the action tendency of desire to pursue goals (Englander, Haidt, & Morris, 2012). In recent years, researchers have begun to identify unique cognitive, emotional, and behavioral effects that occur as a result of feeling elevated, which I review next.

Moral elevation may have specific effects on cognition that are relevant to the negative, narrowing cognitive style associated with PTSD. While thinking in individuals with PTSD becomes narrowly focused on potential threat, elevation expands cognitive processes by facilitating attention to broader features of the social environment, similar to gratitude (Haidt, 2003b); it falls into the category of other-praising emotions (along with gratitude) because it directs attention to the morally positive behaviors of other people (Algoe & Haidt, 2009). Witnessing the positive, morally beautiful or benevolent actions of others encourages optimistic thinking (Fredrickson, 2000) that may counter any negative beliefs about humanity that occur post-trauma (e.g., "People only care about themselves"). When situations are encountered that do not align with the individual's current mental schema, the person may either adjust their perception of the event or else broaden their thinking to accommodate the newer, more accurate and inclusive truths

about humanity (Keltner & Haidt, 2003). A recent study has examined whether elevation behaves in the way that the broaden-and-build theory would suggest and found that there was strong evidence that this emotion broadens cognition, though this study is the first to explore such a relationship (Pohling & Diessner, 2016).

Studies also show that moral elevation has effects on emotion, which is relevant to the negative emotional experiences characteristic of PTSD. Moral elevation creates and amplifies feelings of affiliation or connection between the self and others (e.g., Landis et al., 2009), as opposed to the negative emotions of PTSD such as depression and feelings of isolation or detachment from others. Silvers and Haidt (2008) conducted a study examining the causal impact of watching a morally elevating vs. an amusing video on dyads of breastfeeding women and their infants. Moral elevation increased affiliation; women who watched the morally elevating clips were more likely to lactate, breastfeed, and hug their infants than those who watched the amusing clips. This indirectly suggests that moral elevation may involve the release of oxytocin, a hormone involved in social facilitation and attachment. For individuals with PTSD, moral elevation may be an uplifting experience that draws the individual out from a place of isolation and withdrawal.

Moral elevation also has effects on a person's behavior that may counter the avoidance behaviors of individuals with PTSD. Moral elevation promotes approach behavior as it incites a desire to engage in altruistic or prosocial behavior or to emulate the person who committed the morally virtuous act (Haidt, 2003b; Schnall, Roper, & Fessler, 2010). For instance, feeling morally elevated increases the likelihood that one will donate money to a social out-group (Freeman, Aquino, & McFerran, 2009). Schnall

et al. (2010) found that participants in an elevating condition were more willing, relative to a neutral condition, to participate in future unpaid research and to spend time working with the experimenter on a monotonous task. Elevated individuals are therefore more likely to help others even when there is no benefit to the self.

Erickson and Abelson (2012) examined the effects of elevation on social and emotional variables over 10 days in a clinical sample of anxious and depressed clients. On days when participants rated their experience of elevation to be higher than their average level they also experienced an increase in feeling close to others, less interpersonal conflict, and lower distress symptoms that same day, even while controlling for gender, dysphoria, and feelings of competence. Additionally, daily levels of moral elevation prospectively predicted compassionate goals (i.e., desire to serve or help others) in daily life and in a specific relationship. Therefore, it is highly plausible that elevation may have implications for the relationship between the stress of trauma and an individual's well-being. The particular experience that comes with elevation may benefit women in sex trafficking as it not only provides the benefits that come with any positive emotions (as suggested by the broaden-and-build theory), but specifically elicits belief in humanity and goodness, addressing the feelings of moral dirtiness and shame that may be inherent in sex trafficking, the subject of the next section. In addition, qualitative analysis of the situations reported as triggering elevation in these women would yield a richer portrait of their positive emotional experiences of moral inspiration.

Implicit moral purity. Perceived moral purity versus moral dirtiness or impurity can be thought of as two opposite ends on a spectrum of social cognition. In order to conceptualize this dimension, it is helpful to first understand the moral emotion of

disgust. As previously explained, moral disgust can be thought of as the opposite of moral elevation (Haidt, 2000). Moral disgust is a universal human emotion felt in response to a situation, object, or action perceived to be in violation of morality and "the ethics of divinity" (i.e., keeping the sacred from contact with the worldly; Rozin et al., 1999; Shweder, Much, Mahapatra, & Park, 1997). Originally, disgust was viewed as an adaptive response to potential physical contamination; however, research suggests that it can occur in response to social behavior and character perceived to be immoral or contaminated (Horberg, Oveis, Keltner, & Cohen, 2009). An action may be considered in violation of these ethics if it is perceived as sinful, disrupts some natural order or sanctity, or causes spiritual ruin (Shweder et al., 1997). Most recently, disgust is proposed to involve a distinct evolutionary function of detecting physical, moral, and sexual violations of purity, and therefore serves as a powerful motivator for avoidance of certain situations that might cause death, disease, or immorality (Tybur, Lieberman, & Griskevicius, 2009). Horberg et al. (2009) examined the connection between disgust and purity; all participants read four vignettes (two in violation of purity and two in violation of justice) and rated how disgusted or angry they felt in response. The vignettes in violation of purity elicited more feelings of disgust, rather than anger, implying that the emotion of disgust is associated with violations of purity. This moral domain, which can be referred to as the purity domain of social cognition, is adaptive in that it promotes protecting the sanctity of the body and soul. This increases the tendency towards rejection of spiritually unclean, hedonistic, or materialistic endeavors, in addition to more typical physically contaminating behaviors (e.g., not washing hands), in order to avoid self-polluting, carnal, or ungodly action (e.g., Rozin, Haidt, & McCauley, 2000; Rozin et al.,

1999). Therefore, individuals often endorse feeling disgusted in response to many different types of situations, including immoral behavior (Schnall, Benton, & Harvey, 2008).

The social cognition dimension of moral purity (i.e., feeling morally good or pure rather than disgusting) may therefore be relevant in the study of sex-trafficked women who potentially experience violations of moral purity on a daily basis. Similar to returning combat veterans who have engaged in daily activities that may have been against their morals, such as killing or harming another human, sex-trafficked women are likely to engage in behaviors that are against their moral code. These women may therefore experience *moral injury* which occurs when an individual causes, witnesses, or does not prevent something that transgresses their deepest moral beliefs; it may be detrimental over time as it impacts the individual on an emotional, psychological, behavioral, spiritual, and social level (Litz et al., 2009; McCormack & Ell, 2016). Moral injury is associated with emotions of shame and guilt, as well as a difficulty trusting others (Drescher et al., 2011) and is further associated with reduced well-being (Gaudet, Sowers, Nugent, & Boriskin, 2016). Therefore, it is evident that when one violates their own moral code, whether at war or forced into sexual slavery, it can impact that person's sense of moral purity or cleanliness. However, it may be a bit more complex to address how physical purity can translate into moral purity.

Sex trafficking typically involves many violations of physical and sexual purity, as well as moral purity, and these three types of purity violations are often confounded. For example, many religions equate physical and moral or spiritual purity (Schnall et al., 2008); physical cleansing is often emphasized in religious and cultural traditions as a way

of cleansing the soul. Some examples include water baptism in the Christian religion as a dedication of the soul in order to wash away sin and washing of the body in order to prepare for worship in the Muslim tradition, suggesting that cleansing of the body is somehow related to cleansing of the soul (Haidt, 2003a). Several studies have shown that individuals may conflate physical and moral purity. Elliot & Radomsky (2009) had participants visualize kissing someone who engages in morally undesirable behaviors (i.e., cheating, lying, stealing) and found that participants felt dirty and disgusted, and were more likely to engage in physical cleansing after such imaginal exposure than their counterparts. Likewise, Zhong and Liljenquist (2006) found that thoughts about unethical behaviors tended to increase the mental accessibility of words related to cleaning, rather than neutral words and also increased the desirability of hygienic and cleansing-related products signifying a connection between unethical or impure behavior and physical cleansing. Additionally, those who had the opportunity to physically cleanse after thinking about an unethical behavior were less likely to engage in moral compensatory or neutralizing behavior (volunteering) than were those who did not have the opportunity to physically cleanse. This suggests that the connection between physical and moral cleanliness is strong enough that engaging in cleansing behavior may reduce feelings of moral dirtiness.

This relationship is also apparent in the context of sexual assault. Victims of sexual assault undergoing a manipulation to make assault memories temporarily salient were more likely to report feelings of dirtiness and a desire to physically cleanse than those in a neutral condition (Fairbrother & Rachman, 2004). Olatunji, Elwood, Williams, and Lohr (2008) hypothesized that because sexual assault and sexual trauma are linked

with feelings of mental pollution, it may be difficult to see the self, others, and the world, positively. Mental pollution was first defined as "pollution of the mind" (Rachman, 1994) and characterized by "a sense of internal dirtiness" (Fairbrother & Rachman, 2004).

Traumatic events may thus contribute both to a sense of mental pollution about oneself and the world. Particularly, sex-trafficked women are likely to encounter physical, sexual, and moral pollutants or violations (Dovydaitis, 2010). In the context of the present research, the perception of one's self as less pure may therefore have an effect on the relationship between trauma symptoms and well-being. Because of its nature, involvement in sex trafficking may have a negative impact on a person's moral concept of themselves in terms of physical, spiritual, and sexual morality. Women in this population come into contact with a great deal of physical, emotional, and sexual abuse (e.g., Dovydaitis, 2010) that can violate their sense of purity and morality and increase feelings of physical and moral uncleanliness. This sense of violation may be either conscious or unconscious and is likely to be associated with shame, as it is not perceived to be a socially-desirable experience (Dorahy et al., 2013). Because measuring self-concepts such as viewing the self as either morally pure or morally dirty may be influenced by socially desirable responding, it makes sense to assess them via a measure of implicit cognition. It is plausible that implicit perceptions of oneself as pure or virtuous (rather than dirty) may, like gratitude and elevation, function as a moderator on the relationship between the effects of trauma on well-being in sex-trafficked women. Trauma symptoms may less strongly predict lower well-being in women who score higher on implicit purity.

In addition, because so little research has been conducted in this area, qualitative examination of the types of experiences that sex-trafficked women endorse is warranted

to better understand what makes them feel dirty versus clean. Past research on disgust suggests that physical contaminants, sexual violations, and immorality are perceived as disgust triggers (Tybur et al., 2009), whereas Schnall (2011) argues that the need for physical cleanliness may facilitate social connection and the opportunity to be vulnerable with others in ones' social group. Therefore, it is possible that in sex-trafficked women, experiences such as unwanted and unprotected, risky sexual behavior, chronic and unsafe substance use (e.g., using dirty needles), and potentially having to witness or engage in criminal activity such as theft and murder may cause feelings of uncleanliness and disgust, which are thought to preserve physical and social boundaries to limit contamination. In contrast, connection to other persons (e.g., family, friends, children, or God) may cause feelings of cleanliness, consistent with the theory that cleanliness facilitates affiliation and proximity (Schnall, 2011).

Little research has examined the relationship between trauma and well-being in sex-trafficked women and no research has studied the role of moral emotions in this relationship. There is reason to believe that trait-like proneness to gratitude, moral elevation, and moral purity as a dimension of social cognition will attenuate the effects of trauma in this population. Moral elevation and gratitude have cognitive, emotional, and behavioral characteristics which address three of the primary characteristics described by theories of PTSD, and may therefore moderate effects of PTSD symptoms on well-being. There is also reason to believe that self-perceived moral purity will alter the relationship between trauma and well-being in sex-trafficked women because of its relevance to violations of moral purity (i.e., physical, sexual, and moral) that occur in sex trafficking.

Present Study

Purpose. Research has already established that PTSD predicts lower overall well-being, both psychological and physical (e.g., Ford, 2002; Zatzick, 1997). Hossain et al. (2010) found that trauma related to sex trafficking predicted lower psychological well-being even while controlling for previous trauma exposure, though this is one of very few studies. The purpose of my study is to examine this relationship between posttraumatic stress symptoms and well-being in sex-trafficked women in the Seattle area. In addition, I examined the relationship between these variables within a control sample of college students, and examine between-group differences.

I also explore the extent to which PTSD symptoms and moral emotions predict well-being in sex-trafficked women and controls (female college students), as well as moderation effects of gratitude, moral elevation, and implicit moral purity. Contemporary research suggests that trait-like qualities of gratitude and moral elevation can attenuate the effects of adversity on well-being and quality of life (e.g., Erickson, Scarsella, & Abelson, 2012; Kashdan et al., 2006).

Design and sample. I collected both cross-sectional quantitative and qualitative data during interviews with participants; I only examined the qualitative data in the sex-trafficked sample. Participants in the sex-trafficked sample were interviewed at local drop-in rescue centers for women who have been sex-trafficked in the Seattle area. College students were interviewed in a psychology department laboratory. Interviews incorporated diagnostic questions about PTSD symptoms, self-report paper-and-pencil questionnaires, discussion about values and goals, and a computer-based implicit cognition measure.

Hypotheses. Hypotheses were tested pertaining to (a) quantitative analyses of group differences between sex-trafficked women and controls and (b) quantitative prediction of psychological well-being and specific sub-domains of well-being (i.e., positive emotions, engagement, relationships, meaning, accomplishment, negative emotions); also (c) qualitative data were analyzed to provide a richer examination of the sample of sex-trafficked women. With regard to group differences, I hypothesized that women trafficked for sex would be more likely to meet *DSM-5* criteria for PTSD (e.g., Hossain et al., 2010), and would endorse higher mean dimensional PTSD symptoms and negative emotions, as well as lower levels of implicit moral purity (e.g., Fairbrother & Rachman, 2004), psychological well-being (e.g., Zoellner et al., 2000), positive emotions, trait proneness to moral elevation (Erickson & Abelson, 2012), and trait gratitude (e.g., Kashdan et al., 2006), relative to controls.

With regard to regression analyses, I hypothesized that higher levels of PTSD symptoms would predict lower psychological well-being in both samples (and total sample; see Figure 1), consistent with past research on the effects of PTSD on well-being (e.g., Zoellner et al., 2000; d'Ardenne, 2005). In contrast, I expected moral elevation, trait gratitude, and implicit moral purity to predict higher well-being, in line with studies linking these variables to positive outcomes (e.g., Bono & McCullough, 2006; Erickson & Abelson, 2012). Based on the broaden-and-build theory, which posits that positive emotions can broaden perspectives and build skills to manage stressors (Fredrickson, 2000), I hypothesized that moral elevation and gratitude would moderate the link between PTSD symptoms and well-being, reducing its negative impact (see Figures 2 and 3). I also hypothesized that a tendency to see oneself as morally pure would reduce the

negative impact of PTSD symptoms (see Figure 4), as previous research has shown a connection between moral injury, shame, and a reduced sense of well-being (e.g., Drescher et al., 2011; Gaudet et al., 2016; Litz et al., 2009; McCormack & Ell, 2016;). I expected this to be the pattern in the total sample due to increased statistical power, but also tested the hypotheses in each subsample.

Lastly, based on the abovementioned theories, I explored what themes might emerge upon interview with the sample of sex-trafficked women. I based my coding system on moral elevation theory (Haidt, 2001), which might imply that the women would likely identify witnessing other's prosocial behaviors to be inspiring, causing them to want to engage in similar prosocial behaviors. Further, I explored the women's responses related to gratitude and coded responses based on Kasser (2002)'s theory on intrinsic and extrinsic values to better understand what these women would be most likely to be thankful for. Additionally, I explored what made these women feel morally unclean, drawing from prior research on moral injury and moral disgust (Litz et al., 2009; Tybur, Lieberman, & Griskevicius, 2009) and what made these women feel clean, drawing upon moral emotions research (Schnall, 2011).

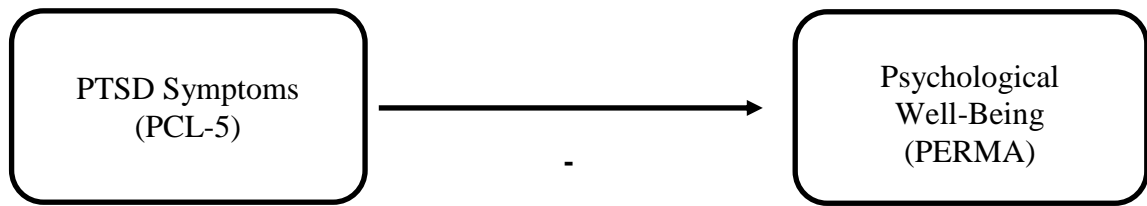


Figure 1. Higher PTSD symptoms will predict lower levels of psychological well-being.

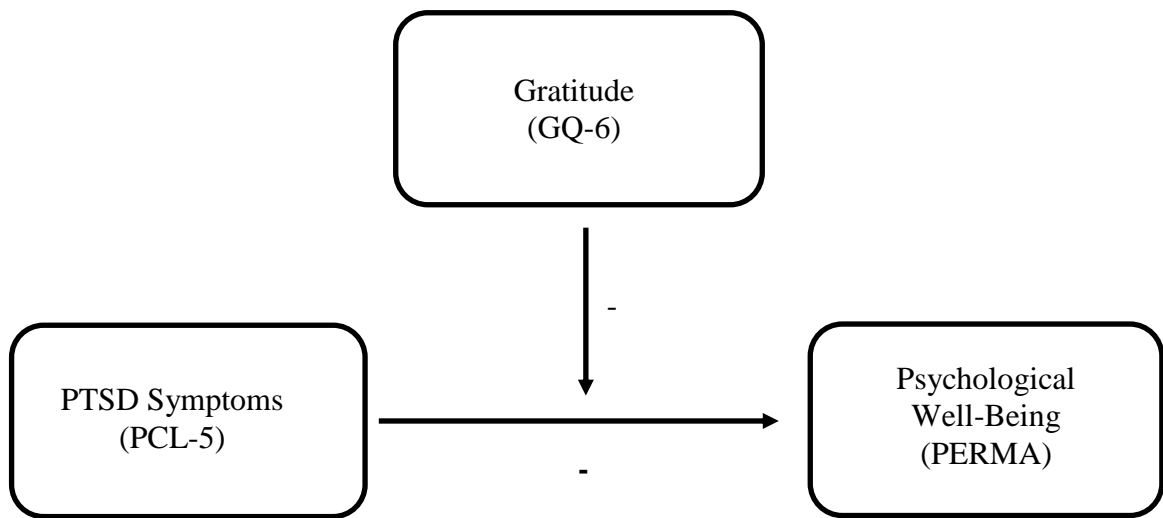


Figure 2. Higher levels of trait gratitude will moderate (buffer) the relationship between PTSD symptoms and psychological well-being.

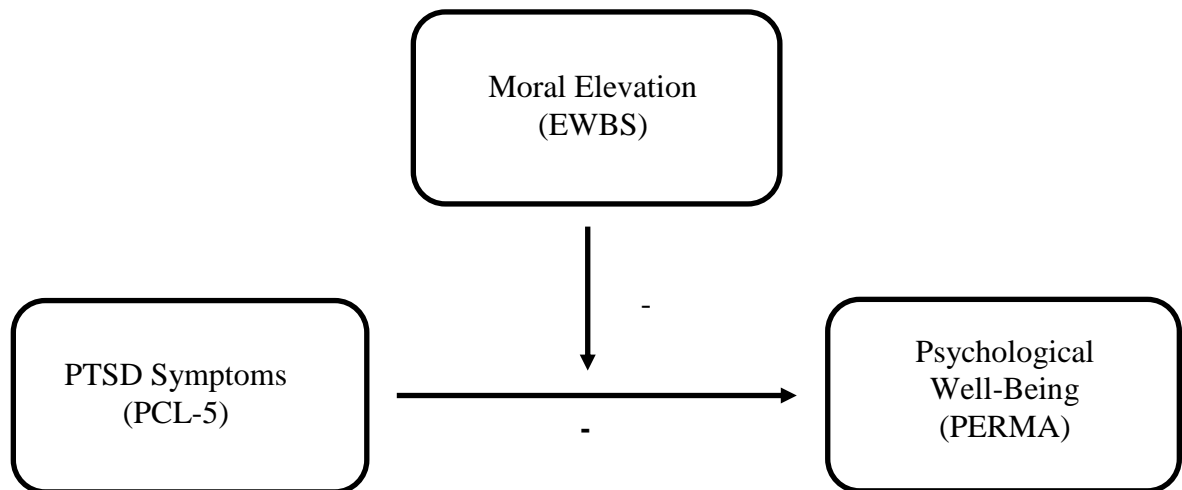


Figure 3. Higher levels of moral elevation will moderate (buffer) the relationship between PTSD symptoms and psychological well-being.

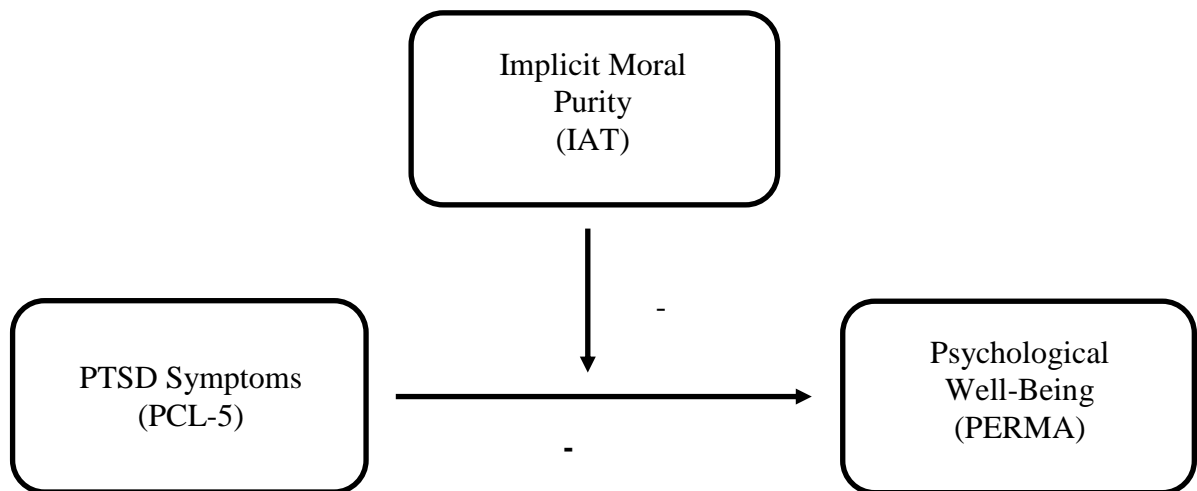


Figure 4. Higher levels of implicit moral purity will moderate (buffer) the relationship between PTSD symptoms and psychological well-being.

Chapter II:

Method

Participants

My study included two samples; the first sample included self-selected female participants who recently had been or were currently involved in sex trafficking and prostitution. The second was a control sample of female college students at a liberal arts university in the Pacific Northwest. Preliminary power analyses using G*Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007) indicated that a total of at least 68 participants would be needed in order to obtain sufficient power of .80 to find medium effects when testing two main effects and an interaction ($f^2 = .15$, $\alpha = .05$). Due to the challenges of recruiting sex-trafficked women, I planned to examine regressions in the total sample as well as in the subsamples with post-hoc analyses. The trafficked sample was recruited from two drop-in centers in the greater Seattle area for females across the spectrum of age who have been sex-trafficked. Participants from the college sample were recruited through general psychology courses as part of their coursework using Sona Systems (www.spu.sona-systems.com), an online research recruitment platform. I received permissions for recruitment and data collection in the trafficked sample from the drop-in center directors at both recruitment sites. Both drop-in centers operated similarly as places of shelter where women can satisfy basic needs (e.g., rest, eat, shower), take classes, participate in Bible study, and learn about resources to escape sex trafficking. I obtained permission for recruitment for the college sample through the university's general psychology participant pool. Participants in the trafficked and college samples were asked demographic information including age, ethnicity, and religion.

Sample of women trafficked for sex. The trafficked sample ($n = 16$) was comprised of sex-trafficked women with ages ranging from 18 to 50 years old ($M = 28.38$, $SD = 8.58$). Of these women, six self-identified as multiracial, three as Caucasian, two as Black, two as Native American, two as Asian or Pacific Islander, and one as Hispanic/Latina. Fifteen of the 16 participants identified as Christian, one identified as having no religious or spiritual background. Five participants had already completed high school or their GED, five were working on their GED, four had some college, one was currently in vocational school, and one had not completed middle school or lower. With regard to relationship status, eight stated they were in a dating relationship, six were single, and two were divorced. Participants reported that their parent(s) were divorced ($n = 5$), separated ($n = 4$), married ($n = 2$), widowed ($n = 2$), never married ($n = 1$), or unknown with regard to parental relationship status ($n = 2$). Seven participants indicated their current living situation to be in programs such as sober living or religiously affiliated housing, three with parents or family, two living alone, two “on the run,” one with a significant other, and one with roommates. Thirteen of the women reported having children, ranging in age from infant to three years ($M = 1.38$ years old, $SD = 1.03$).

Sample of college students. The college sample ($n = 55$) was comprised of female students, with ages ranging from 18 to 25 ($M = 19.62$, $SD = 1.73$). Twenty-five identified as Caucasian, 10 as Asian/Pacific Islander, 7 as multiracial, 4 as Hispanic/Latina, 3 as Black, and 1 as Native American. All 50 participants in the college sample had some college education, most of whom were in their freshman year of college. Forty-eight described themselves as Christian whereas two described themselves to be of no religious/spiritual background. Participants identified as single ($n = 44$) or in a

dating relationship ($n = 6$). Participants' parents' relationships included 40 who were married, 7 divorced, 2 in other unique situations, and 1 as separated. Women reported living with roommates ($n = 44$), with parents/family ($n = 5$), or another type of housing program ($n = 1$). None of the students had children.

Procedure

I recruited sex-trafficked women through their individual case worker or community advocate at their respective sites and placed flyers within the drop-in centers to increase awareness about the opportunity to participate. I recruited college sample participants through their general psychology classes as part of their coursework. After completing the study, trafficked sample participants received a \$5 Target gift card and a nail polish of their choice as compensation. Because the items are relatively low in value, they were believed to be non-coercive in recruiting participants, while still rewarding. This is particularly important in order to avoid the possibility of re-enacting the dynamic between the trafficked women and the perpetrators (i.e., the women being coerced to engage in an unwanted act for monetary compensation). College sample participants received course credit as compensation. Each participant in the trafficked sample was interviewed individually in a private room at one of the drop-in centers during regular business hours while other staff were present in the building.

In order to build rapport and gradually present topics that may be more difficult to discuss, participants recruited from GP were first asked program evaluation questions as requested by the drop-in center director about participant's impressions of the organization. All participants answered demographic questions and then engaged in an interview (Anxiety and Related Disorders Interview Schedule for *DSM-5*, Adult Version;

ADIS-5) to determine whether they met *DSM-5* criteria for PTSD. In addition, participants completed the Posttraumatic Stress Disorder Checklist for *DSM-5*. These questions related to traumatic experiences were asked in the middle of the interview in order to minimize risk of distress for the participant. Following the trauma-related questions, participants were given a brief computer-based measure (assessing implicit moral purity) and several brief questionnaires including the Gratitude Questionnaire-6-Item Form, the Engagement with Beauty Scale, and the PERMA-Profilier. At the end of the interview, participants were asked questions about their hopes and goals, partly to minimize risk of the participant walking away from the study feeling distressed after discussing trauma. Average completion time for interviews and measures combined ranged from 60 to 90 minutes.

The institutional review board (IRB #: 131402019; approval date: June 30, 2014; expiration date: June 30, 2016) at Seattle Pacific University approved the present study and informed consent was obtained from all participants in the sex-trafficked and college samples. After involvement in the study, participants were debriefed in order to reduce any potential distress resulting from participation; those in the sex-trafficked sample were also given a list of free or low-cost counseling referrals if they desired, while those in the college sample were referred to on-campus counseling services.

Measures

PTSD diagnosis. The Anxiety and Related Disorders Interview Schedule for *DSM-5*, Adult Version (ADIS-5; Brown & Barlow, 2014) was used in order to determine the number of participants in the sample that met criteria for PTSD. The ADIS-5 is a structured clinical interview used to differentially diagnose anxiety, mood, trauma, and

related disorders according to the *DSM-5*; however, to minimize the duration of the interview, the present study only used the PTSD module which allows for a preliminary diagnosis of PTSD. The interview first addresses whether the participant meets Criterion A of the *DSM-5* through experiencing or witnessing various traumatic events (e.g., physical abuse/assault, sexual abuse/assault). Follow-up questions address whether the event(s) was associated with death, serious injury, or sexual violation and ask for a participant's rating of severity of the event on a scale from 0 (*none*) to 8 (*very severe*). If multiple events are endorsed within one category of trauma, the participant is asked to rate the most severe one. Moreover, the module was adapted to apply to the women in the sex-trafficked sample by incorporating a prompt associated with their involvement in sex trafficking and to address Criterion A. The following script was verbally communicated to each participant in order to target traumatic events that have been experienced while involved sex trafficking:

Many girls/women who have been in "the life" describe going through experiences that are traumatic or even life threatening, sometimes on a daily basis. Chances are, this statement may bring up some experiences like this of your own. Have you ever experienced something that was so scary or traumatic that you still think about it or find yourself bothered by it? If so, and you are willing to share, please briefly describe the event. Please remember that your information will remain confidential and will remain between you and me.

This script was then followed up with standard ADIS-5 questions about whether the event was experienced or witnessed and how severe the participant rated the event.

For the participants who endorse a traumatic event(s) during the life of sex trafficking, the remainder of the PTSD diagnostic interview were unaltered from the original *DSM-5* questions in the ADIS-5. Participants were asked about the types of intrusion symptoms they experience and to rate frequency and distress related to each symptom. The frequency scale is a nine-point Likert scale ranging from 0 (*never*) to 8 (*constantly*), while the distress scale is a nine-point Likert scale ranging from 0 (*no distress*) to 8 (*extreme distress*). Participants were asked whether they have experienced other types of symptoms (i.e., avoidance of associated stimuli, negative alterations in cognitions or mood, hyperarousal or hyper-reactivity, depersonalization or derealization) and if so, frequency and severity of these symptoms. Finally, participants were asked about the extent to which these symptoms interfere with their life. PTSD diagnosis was determined based on clinical judgment as to whether the participant met *DSM-5* criteria, based on the aforementioned symptoms and impairment ratings.

While the ADIS-5 is currently being validated, it represents a minor revision of the ADIS-IV, which is generally considered to be the gold standard in the research of anxiety and related disorders. The ADIS-IV (Brown, Di Nardo, & Barlow, 1994) demonstrated internal consistency across different anxiety disorder diagnostic sections, ranging from .67 to .86 (DiLillo, Hayes, & Hope, 2006). Brown, Di Nardo, Lehman, & Campbell (2001) analyzed ADIS-IV interviews from two different clinicians with 362 outpatient participants and found good inter-rater reliability using the clinical rating scales from 0 to 8. Because the ADIS-IV is highly validated and reliable, the same is assumed for the ADIS-5, but full validation is ongoing. The questions regarding Criterion A were adapted for the present study, using the aforementioned prompt; however, there is

no reason to believe that this should significantly influence the psychometric properties of the interview.

PTSD severity. The PTSD Checklist 5 (PCL-5; Weathers, Litz, Keane, Palmieri, Marx, & Schnurr, 2013) is a self-report 20-item measure of PTSD symptom severity according to the *DSM-5* diagnostic criteria and can be obtained at the U.S. Department of Veterans Affairs National Center for PTSD webpage (PTSD Checklist for *DSM-5*, 2014). The PCL-5 can be administered in three different ways: without Criterion A assessment, with Criterion A assessment, or with revised Life Events Checklist for *DSM-5* (LEC-5). For the purpose of the present study, the PCL-5 without Criterion A was administered, as Criterion A was assessed using the ADIS-5. There are subscales, or clusters, to address each of the necessary criteria for a diagnosis of PTSD, including cluster B, C, D, and E. All items are in the same format; participants were asked to rate how much each problem or symptom has bothered them in the past month on a 5-point Likert scale from 0 (*not at all*) to 4 (*extremely*). Sample items include, "In the past month, how much were you bothered by: 'Repeated, disturbing, and unwanted memories of the stressful experience?' 'Trouble remembering important parts of the stressful experience?' and 'Taking too many risks or doing things that could cause you harm?'" The PCL-5 takes about 2-3 minutes to complete. Scores range from 0 to 80 in symptom severity, derived by summing the scores of each of the 20 items, with higher total scores indicating greater symptom severity. The cut-off for a provisional diagnosis of PTSD is 38; however, in the present study the PCL-5 is simply used as a dimensional self-report measure of symptom severity rather than as a diagnostic tool.

Several studies have examined the psychometric properties of the PCL-5. Cronbach's alphas for PCL-5 responses ranged from .96 (Bovin et al., 2015) to between .75 (for alterations in arousal and reactivity items at baseline) and .95 (for overall items at follow-up; Wortmann et al., 2016). Cronbach's alpha for the overall scale in the present study was .95 in the overall sample, .93 in the sex-trafficked sample, and .89 in the college sample. In addition, test-retest reliability has been shown over a period of about one week at .82 for the PCL-5 total score (Blevins, Weathers, Davis, Witte, & Domino, 2015), and previous versions demonstrated similarly high test-retest reliability over the same period of time ($r = .88$, Ruggiero, Del Ben, Scotti, & Rabalais, 2003). Earlier versions of the PCL demonstrated appropriate convergent validity with other measures of PTSD such as the Mississippi PTSD Scale ($r = .85-.93$; Weathers et al., 1993), the MMPI-2 Keane PTSD Scale ($r = .77$), the Impact of Events Scale ($r = .77-.90$) and the Clinician-Administered PTSD Scale ($r = .92$; Blanchard, Jones Alexander, Buckley, & Forneris, 1996). The present version also demonstrates convergent validity (PTSD Checklist-Specific Version, $r = .85$, Posttraumatic Distress Scale, $r = .85$, and Detailed Assessment of Posttraumatic Symptoms – Posttraumatic Stress Scale, $r = .84$) and discriminant validity (relatively lower associations with Antisocial Personality Features, $r = .39$ and Mania, $r = .31$; Blevins et al., 2015). The previous version of the PCL has also established good sensitivity and specificity (Blanchard et al., 1996).

Trait gratitude. The Gratitude Questionnaire-Six-Item Form (GQ-6; McCullough et al, 2002a) measures individual differences in the tendency towards gratefulness through self-report. The GQ-6 has six items; participants rate how strongly they agree with each statement using a 7-point Likert-type scale (1 = *strongly disagree*

and 7 = *strongly agree*). Exploratory and confirmatory factor analyses suggested unifactorial structure. Items are intended to capture gratitude intensity, frequency, span, and density (i.e., amount) as these four components of gratitude distinguish highly grateful individuals from those who are less grateful (McCullough et al., 2002a). Sample items include: "I have so much in life to be thankful for"; "If I had to list everything that I felt grateful for, it would be a very long list"; "Long amounts of time can go by before I feel grateful to something or someone" (reverse-scored). Two items are reverse scored and then summed with the remaining four item scores to obtain a total score; a higher score indicates a greater tendency towards feeling grateful.

Responses to the GQ-6 have demonstrated strong psychometric properties (McCullough et al., 2002a). In previous research, internal consistency estimates ranged from .76 to .84 (McCullough, Emmons, & Tsang, 2002a; McCullough, Tsang, & Emmons, 2002b), while in the present study, Cronbach's alpha was .72 in the overall sample, .59 in the trafficked sample, and .77 in the college sample. The GQ-6 also exhibited substantial correlations with other measures of the same construct. McCullough, Tsang, and Emmons (2002) examined the correlation between the GQ-6 and a brief adjectival measure (endorsing items describing the self as "grateful," "thankful," and "appreciative"), finding a correlation of $r = .65, p < .001$. The GQ-6 has also shown a strong correlation ($r = .77$) with the Gratitude, Resentment, and Appreciation Test (Watkins, Scheer, Ovnicek, & Kolts, 2006; Watkins, Woodward, Stone, & Kolts, 2003). The GQ-6 has also been found to correlate highly with positive emotions, life satisfaction, vitality, optimism, and hope, with coefficients ranging from .30 to .50 (McCullough, Emmons, & Tsang, 2002). Measures of negative affect,

depression, and anxiety have typically correlated moderately and negatively with the GQ-6 (e.g., $r = -.40$; McCullough et al., 2002a), suggesting that gratitude is not entirely the opposite, or absence, of such neuroticism (Kashdan et al., 2006).

Moral elevation. I utilized the moral beauty subscale of the Engagement With Beauty Scale (EBS; Diessner, Solom, Frost, Parsons, & Davidson, 2008), which is a self-report measure of the trait-like tendency to experience moral elevation consisting of six items. Instructions asked the participant to think about experiences of moral beauty "in which you perceive (or hear about) some person demonstrating an impressive act of charity or loyalty or kindness or compassion or forgiveness or sacrifice for others or sincere service to others..." Participants rated their response on a scale from one (*very unlike me*) to seven (*very much like me*). Sample items for Moral Beauty include "I notice moral beauty in human beings," "When perceiving an act of moral beauty I find that I desire to become a better person," and "When perceiving an act of moral beauty I feel changes in my body, such as a lump in my throat, an expansion in my chest, faster heart beat, or other bodily responses." Each of the items is scored and summed together to create a subscale score, where higher scores indicate a greater tendency to perceive experiences as morally beautiful and to experience associated elevation.

With regard to reliability, Diessner et al. (2008) found the EBS to have strong internal consistency ($\alpha = .90$ to $.91$) and adequate test-retest reliability ranging from $.79$ to $.85$ for the overall scale. Each subscale also demonstrated strong internal consistency (Natural Beauty $\alpha = .80$; Artistic Beauty $\alpha = .87$ to $.88$; Moral Beauty $\alpha = .85$ to $.89$) and adequate test-retest reliability ($r = .85$ for the total scale; $r = .84$ for the Natural Beauty subscale, $r = .77$ for the Artistic Beauty subscale, and $r = .61$ for the Moral Beauty

subscale.). Cronbach's alpha for the Moral Beauty subscale in the present study was .77 for the overall sample, .84 for the trafficked sample, and .74 for the college sample.

In addition, the EBS has demonstrated convergent and predictive validity (Diessner et al., 2008). The EBS correlates highly with the Appreciation for Beauty and Excellence subscale of the Values In Action Inventory of Strength (VIA-IS; Peterson & Park, 2009; Peterson & Seligman, 2004), a measure of a related construct ($r = .80$; Diessner et al., 2008). The EBS is also strongly correlated with measures that would be expected to share some variance (e.g., gratitude) and has demonstrated predictive validity by distinguishing between students who choose to participate in activities that engaged them with beauty and students who chose not to participate (Diessner, Rust, Solom, Frost, & Parsons, 2006).

Implicit moral purity. An Implicit Association Test (IAT; Greenwald, Nosek, & Banaji, 2003) is an automatic or implicit measure of identity which reduces effects of self-monitoring and social desirability; the idea was originally developed by Greenwald, McGhee, & Schwartz (1998). The IAT requires participants to pair concepts together quickly so that he or she responds with an initial, implicit or less conscious association. An IAT was used in the present study to measure the strength of association between the self-concept in memory and between target words (in this case, purity-related words) and the self-concept in memory (Teachman, Marker, & Smith-Janik, 2008). The IAT was administered on the computer via E-Prime 2.0 (Psychology Software Tools, 2012) and recorded the reaction time for the participant to categorize stimuli as associated with the self or with others, depending upon the instructions. Time (milliseconds) was recorded for the pairing of categories that align with self-schemas versus the time it takes for the

participant to pair stimuli with paired categories that do not align with self-schemas.

Participants are typically able to pair stimuli (i.e., process information) with categories more quickly when they align with self-schemas than when they do not.

Modelled after Greenwald et al. (1998)'s original concept, the IAT in the present study specifically examined the participants' tendency to associate the self with words describing moral purity or goodness (i.e., "pure," "moral," "virtuous," "upstanding"), versus with words describing moral dirtiness or disgust (i.e., "impure," "unclean," "dirty," "disgusting"). Each of these exemplar words have been supported by previous research as being highly associated with their intended dimensions (Graham et al., 2011; Erickson et al., 2012). Before participants are instructed to pair either moral or dirty words with the self, they were given the opportunity to practice using a brief IAT block with 20 trials (e.g., 20 stimuli will appear on the computer screen individually to be categorized by the participant) as is typical of a brief IAT (Sriram & Greenwald, 2009). Following the practice block, participants completed two separate blocks with 32 trials each (e.g., again as indicated by researchers for brief IATs). One of these blocks instructed the participant to pair self-related words with purity stimuli that appear on the screen, while the other block instructed the participant to pair self-related impurity words that appear. The difference in the response time taken to associate the self with each of these different categories provides an implicit measure of the perception of the self as either morally pure and clean versus morally unclean or disgusting. In the present study, if a participant took longer than 10,000 milliseconds or less than 300 milliseconds to respond to a trial within a block, that trial was deleted as suggested by Greenwald et al. (2003), as this may indicate compromised performance.

Previous studies have demonstrated reliability of the IAT (e.g., $\alpha = .78$; Cunningham, Preacher, & Banaji, 2001). Hofmann, Gawronski, Gschwender, Le, and Schmitt (2005) conducted a meta-analysis reporting internal consistencies of the IAT as $r = .79$ on average. Test-retest reliabilities for the IAT ranged from .25 to .69 (Wittenbrink & Schwarz, 2007, p. 70).

Subjective psychological well-being. The PERMA-Profilier (Butler & Kern, 2016) is a measure of Seligman (2011)'s PERMA theory which captures the five independent but related constructs of well-being or “flourishing”: positive emotion (P), engagement (E), positive relationships (R), meaning (M), and accomplishment (A). Positive emotion captures an individual's experience of positive emotion. Engagement measures an individual's tendency to become absorbed into activities that promote a sense of “flow”—the pleasant sense of being absorbed in an activity (Cziksenti-mihalyi, 1997). The relationship subscale measures satisfaction with relationships. The meaning subscale captures the individual's sense of direction and purpose in life, and the accomplishment subscale measures an individual's perceived sense of moving in the direction of his or her goals. The PERMA-Profilier is a 23-item self-report measure, with three items in each of the five domains of well-being and an additional three items measuring physical health, one measuring loneliness, and three measuring negative emotion. Items are ranked on an 11-point Likert scale from 0 (*not at all*) to 10 (*completely*). Subscale scales can be derived by obtaining the mean score for the appropriate items while PERMA overall scores can be derived by averaging the scores from all of the positive emotion, engagement, relationship, meaning, and accomplishment subscale items. Sample PERMA items include: "In general, to what extent do you lead a

purposeful and meaningful life"; "How much of the time do you feel you are making progress towards accomplishing your goals"; and "To what extent do you receive help and support from others when you need it?" Cronbach's alpha for the present study was .92 for the overall sample, .93 in the trafficked sample, and .90 in the college sample).

Butler and Kern (2015) conducted several large sample studies in order to develop and validate the PERMA-Profilier; they developed items out of a large item bank, examined test-retest reliability, and tested the measure in several different demographics. Test-retest reliability was demonstrated to be strong across a period of two weeks, ranging from $r = .78$ to $.86$ for each of the subscales. Exploratory and confirmatory analyses were conducted and show that the 15 PERMA items load onto five factors as originally described in the PERMA theory. While researchers will need to conduct further studies to determine discriminant and predictive validity of the PERMA-Profilier, the thorough studies completed thus far suggest that it is a psychometrically valid measure.

Drop-In center program evaluation questions. I began interviews of women in the sex-trafficked sample with five questions in order to obtain qualitative feedback about their experiences at the drop-in center, incidental to my study hypotheses. These questions were created as a way to assist drop-in center staff in evaluating their services and were requested to be a part of the process by the staff. Sample questions included: "What are some things about [the drop-in center] that you find helpful?" and "What do you feel has the largest effect on you at the [the drop-in center] (e.g., staff/volunteers, programming, atmosphere, safety/security of [the drop-in center], basic needs provided, et cetera)?" In order to provide feedback to the drop-in center, outside of qualitative

analyses, these items were coded based on which categories a response fell into. These codes were based on emerging responses using an exploratory approach. A simple frequency count was conducted to show the most common response categories (e.g., resources at drop-in center; specific person identified). Afterwards, I provided informal feedback to drop-in center management (these results not presented here).

Qualitative interview. A total of 12 questions were asked of participants in order to contextualize the subjective questionnaire data that was obtained and to gather qualitative information about the hopes and goals of participants. Four of these interview questions were relevant to the present study, and thus coded:

- 1) “What sorts of things are you thankful for?” (gratitude)
- 2) “When people see someone else doing something good, they often report feeling inspired and uplifted and having feelings such as warmth in the chest or a lump in the throat. What sorts of things or people inspire you to pursue your goals?” (moral elevation)
- 3) “Sometimes people report feeling unclean or impure. What sorts of things make you feel unclean?” (moral impurity)
- 4) “What sorts of things make you feel clean or pure?” (moral purity)

These future-oriented and positive questions were designed to serve as a mood-enhancing transition after trauma-related questions, as well as to provide detailed examples of emotional experiences of trafficked women. This is particularly useful because so little research has been conducted in this population.

Questions tapping into moral elevation and moral purity were coded based on categories developed in moral emotions research (e.g., Erickson et al., 2012). The question addressing moral impurity was coded into categories consistent with previous research on elicitors of various forms of disgust, including physical contaminants, sexual transgressions, and perceived failures of moral character (Tybur, Lieberman, & Giskevicius, 2009). Responses to this interview question were assigned the following *a*

priori behavior codes: pathogens (physical contaminants), sex, hostility, arrogance, laziness, dishonesty and lying, social comparison, alcohol and substance use, overeating, poor health behaviors (e.g., lack of self-care), materialism, and verbal profanity. When participants described a relevant process without specifying the behavior, we used general codes including generic selfish behavior, not living up to standards of self, and not living up to standards of others.

We coded moral elevation and purity responses based on *a priori* categories informed by existing research on elicitors of elevation (e.g., Algoe & Haidt, 2009), on theories of the function of physical and moral purity cognitions (Schnall, 2001) and on factors that might be the opposite of impurity elicitors (e.g., whereas antisocial behavior may seem impure, prosocial behavior may appear pure). These codes included hygiene behaviors, health behaviors (e.g., taking medicine), helping or kindness behaviors, affiliation or generic socializing, perseverance, religious or spiritual engagement, introspective activities, appreciating beauty (art or nature). Generic living up to standards of self and generic living up to others' standards general categories were coded when participants reported living up to standards without specifying specific behaviors. Emergent codes that were developed during coding included having autonomy or choice, honesty/truthfulness, and having a good attitude/gratitude.

Finally, question four tapped into what the women in the sex-trafficked sample were thankful for. Responses were coded based on Grouzet et al. (2005)'s empirically validated list of values; *a priori* codes included the following: affiliation, physical health, spirituality, safety, community connection, self-acceptance, financial success, and

popularity. For each of the four questions, we dropped *a priori* codes if no responses were given in the respective category.

Interview responses were unitized, or broken down into the smallest complete thought that was still codable. Thus, interview responses for all participants ranged, in total, from 40 to 70 units of thought. Additionally, multiple codes were permitted for each thought unit. Units were determined to be not codable or in an unknown coding category (i.e., unclear) if the underlying function of the thought unit was undeterminable based on the context of the interview questions.

Several graduate level students and one SPU faculty member contributed to content coding. The first 25% of unit responses to each question were coded together to establish consistent coding styles and to discuss and troubleshoot more complex units of data; the remaining data were coded separately in order to examine the coding reliability. I calculated Cohen's kappa using SPSS to obtain interrater reliability; the calculation is based on a subsample of the data for each variable (see Table 1). According to Cohen (1960)'s guidelines, interrater reliability was almost perfect between the two raters for coding of responses related to interview questions about moral elevation, moral purity, and gratitude. Interrater reliability was determined to be substantial for moral impurity.

Table 1. Kappa Values for Coded Items

Item	Construct	<i>N</i> units	<i>K</i>
1	Gratitude	47	0.95
2	Moral Elevation	47	0.95
3	Moral Impurity	31	0.69
4	Moral Purity	59	0.84

Chapter III:

Results

Brief Review of Hypotheses

The present study examined three series of hypotheses, including descriptive and quantitative analyses of group differences between sex-trafficked women and college women including, quantitative prediction of well-being, and qualitative exploration of sex-trafficked women's responses upon interview. Analyses were conducted using the Statistical Package for the Social Sciences (IBM SPSS 23).

Preliminary Analyses

Prior to analyses, data were screened for out-of-range values, normality, and for missing values. The missing value analysis showed that across the combined sample, the percentage of missing data in the overall sample (trafficked and college samples) was low (1.05%). Multiple imputation procedures were used to manage missing data, producing parameter estimates based upon five pooled data imputations. Data analyses with and without multiple imputation showed a similar pattern of results, but results are reported based on imputed data for completeness. Additionally, descriptive analyses indicated that none of the variables were significantly skewed or kurtotic in either sample.

Analyses

Descriptive analyses of sample demographics. Women from the trafficked sample ranged in terms of length of time in the life of sex-trafficking from 1 to 37 years ($M = 9.47$, $SD = 9.66$). All 16 participants indicated a history of sexual abuse or trauma. Their full trauma histories were not queried, but during the interview, each woman identified an index trauma associated with some aspect of their experience in the life of

sex trafficking. Index traumas identified were typically categorized as crime victimization, sexual abuse, or physical abuse. Scores on the PCL-5 ranged from 15 to 68 ($M = 45.44$, $SD = 18.53$), with the average score well above the clinical cut score of 38, which suggested potential clinical levels of PTSD symptoms. Although 11 of the women had PCL-5 scores above the cut score of 38, only 10 of them formally met full criteria for PTSD according to the ADIS-5.

College sample participants identified index traumas including the following: learning about a serious event that happened to a loved one ($n = 16$), physical abuse (4), crime victimization (4), sexual abuse (3), transportation accident (1), or other type of serious accident (1). Eighteen participants chose to talk about a generally stressful event (not qualifying as a trauma) and three participants did not identify any traumatic or stressful event. An event was determined to be stressful but not traumatic if it did not fit *DSM-5* Criterion A for a traumatic event or did not fit into one of the categories listed on the ADIS-5 interview. Overall, five participants endorsed experiencing sexual traumas, although only three chose to talk about it as the index trauma. Scores on the PCL-5 ranged from zero to 50 ($M = 15.90$, $SD = 12.10$). Six participants met criteria for PTSD on the ADIS-5 interview.

Between-group comparisons. I ran independent samples *t*-tests to compare the two samples in terms of ratio-level demographic variables. When examining the group differences in terms of mean age, Levene's test of homogeneity was statistically significant; therefore, I used *t*-test results which did not assume equal variances between the samples. Those in the sex-trafficked women's sample were statistically significantly

older in age (see Table 2) than those in the control sample, with a large effect size.¹

I also ran an independent samples *t*-test to compare the two samples in terms of PCL-5 scores. Levene's test of homogeneity was violated again, so I referred to *t*-tests that did not assume equal variances. As predicted, the sex-trafficked women's sample had statistically significantly higher scores on the PCL-5 than did those in the control sample, with a relatively large effect size.

The proportion of PTSD in both samples was not equal; specifically, the proportion of women with PTSD in the trafficked sample was 62.5%, whereas the proportion of women with PTSD in the college sample was 13.6%. Therefore, I conducted a chi-square analysis on frequency counts of positive diagnosis to examine the relation between group and PTSD diagnosis. The relation between these variables was significant and had a large effect size, $\chi^2(1, N = 66) = 16.83, p < .001, \Phi = .51$. In other words, as expected, participants in the sample of trafficked women were more likely to meet diagnostic criteria for PTSD than were participants in the sample of college students.

Analyses of group differences. Table 2 shows independent samples *t*-tests results conducted to test for group differences in average age, PTSD symptom (PCL-5) scores, psychological well-being (PERMA total), well-being subscales (positive emotions, engagement, relationships, meaning, and accomplishment), negative emotions, gratitude (GQ6), moral elevation (EWBS), and implicit moral purity (IAT) for the trafficked and college samples. Independent samples *t*-tests for PERMA total and EWBS did not

¹ Because groups differed on age, I also analyzed controlling for age. Overall, the pattern of the results was the same, with the exception of gratitude ($p = .054$) and moral elevation ($p = .016$) slightly shifting from nonsignificant to marginally significant and marginally significant to significantly, respectively.

assume equal variances, based on significant Levene's tests. Table 2 includes means, standard deviations, p -values, and effect sizes (d) for both samples. The magnitude of between group differences can be determined using Cohen's d , where $d = .02$ is considered a small effect size, $d = .05$ is a medium effect size, and $d = .08$ is a large effect size (Cohen, 1988, p.25).

Table 2. Independent T -tests

Variable	Trafficked Sample Mean (SD)	College Sample Mean (SD)	p	d
Age	28.38 (8.58)	19.62 (1.73)	.001	1.28
PCL-5 Scores	45.44 (18.53)	15.9 (12.10)	<.001	1.72
Positive emotions	5.95 (2.87)	7.50 (1.22)	.035	.60
Engagement	6.81 (2.36)	7.34 (1.25)	.392	.25
Relationships	6.80 (2.40)	7.34 (1.40)	.394	.25
Meaning	7.54 (1.87)	7.63 (1.26)	.867	.05
Accomplishment	7.09 (1.80)	7.40 (1.23)	.534	.18
Negative emotions	5.72 (2.25)	4.27 (1.48)	.016	.69
PERMA total	105.94 (34.71)	119.34 (16.15)	.135	.56
EWBS	33.75 (7.85)	35.48 (4.24)	.399	.24
GQ6	34.63 (5.94)	37.18 (4.58)	.071	.31
IAT d	.49 (.84)	0.09 (0.66)	.052	.56

As predicted, findings show that the PERMA subscale for positive emotions scores were significantly lower for sex-trafficked women than for the college sample, with a medium effect size. Additionally, as predicted, the PERMA subscale for negative emotions scores was significantly higher for sex-trafficked women than for the control

sample, with a medium effect size. Sex-trafficked women's scores were marginally lower on the gratitude questionnaire (GQ6) than the scores of those in the control sample as expected, but with a small effect size. Finally, sex-trafficked women demonstrated marginally higher implicit moral purity than the college sample, contrary to the hypothesis, with a medium effect size. In contrast to hypotheses, there were no significant group differences for proneness to elevation (EWBS scores) and PERMA subscales of engagement, relationships, meaning, and accomplishment, or with total PERMA (well-being) scores.

Multiple regression analyses. Core hypotheses were tested via multiple regression using the PROCESS macro in SPSS (Hayes, 2012). Prior to examining effects of moderator variables, both predictors were centered (i.e., their mean scores were subtracted), then entered simultaneously into the model along with their interaction term, with psychological well-being as the outcome variable. Specifically, a series of separate analyses were completed with models testing PTSD symptoms interacting with moderator variables including gratitude, elevation, and implicit purity. Each moderation model was tested separately in the full sample as well as the subsamples of sex-trafficked women and students to examine themes and differences.

Multiple regression results for gratitude (See Table 3). As hypothesized, in the model examining PTSD symptoms and gratitude as predictors of psychological well-being in the overall sample, results indicated that PTSD symptoms predicted lower well-being. Also congruent with hypotheses, higher levels of gratitude significantly predicted higher well-being in the overall sample. However, counter to predictions, the interaction effect between gratitude and PTSD symptoms on well-being was not significant.

In a model examining PTSD symptoms and gratitude as predictors of psychological well-being in the sex-trafficked women's sample, the main effect of gratitude was not significant; however, this effect was in expected direction. As hypothesized, the main effect of PTSD symptoms was significant, with higher PTSD symptoms predicting lower psychological well-being. Contrary to expectations, the interaction between gratitude and PTSD symptoms was not significant.

As expected, in the model examining PTSD symptoms and gratitude as predictors of well-being in the student sample, results indicated a significant main effect of gratitude on well-being, with higher levels of gratitude predicting higher levels of well-being. PTSD symptom scores did not significantly predict psychological well-being. Counter to hypotheses, the interaction effect between PTSD symptoms and gratitude on psychological well-being was not significant.

Multiple regression results for moral elevation (See Table 4). In the model examining PTSD symptoms and moral elevation as predictors of psychological well-being in the overall sample, results indicate that higher PTSD symptoms predicted significantly lower well-being scores; this was as expected. Additionally, moral elevation had a marginal effect on well-being: as moral elevation levels increased, participants trended toward higher well-being. Finally, in the overall sample, the interaction between moral elevation and PTSD symptoms was significant. Simple slopes analysis suggested that at low level of proneness to moral elevation (1 *SD* below the mean = 29.74), PTSD predicted lower psychological well-being, $b = -.78$, $SE = .19$, $p < .001$. In contrast, at high levels of moral elevation (1 *SD* above the mean = 40.38), PTSD symptoms did not

predict well-being, $b = -.21$, $SE = .19$, $p = .26$, suggesting a buffering effect of elevation; this was in line with hypotheses (see Figure 5).

Table 3. Gratitude as a moderator

Sample	Model	b	SE	t	p	LLCI	ULCI
Overall	Gratitude	2.57	0.48	5.34	0.00	1.61	3.54
	PTSD symptoms	-0.34	0.12	-2.83	0.01	-0.58	-0.10
	Gratitude x PTSD	-0.02	0.02	-0.85	0.40	-0.07	0.03
College	Gratitude	3.04	0.35	8.62	0.00	2.33	3.75
	PTSD symptoms	-0.06	0.12	-0.47	0.64	-0.31	0.19
	Gratitude x PTSD	-0.04	0.02	-1.64	0.11	-0.09	0.01
Trafficked	Gratitude	1.56	1.37	1.14	0.28	-1.42	4.54
	PTSD symptoms	-1.05	0.49	-2.12	0.06	-2.12	0.03
	Gratitude x PTSD	0.04	0.09	0.42	0.68	-0.15	0.23

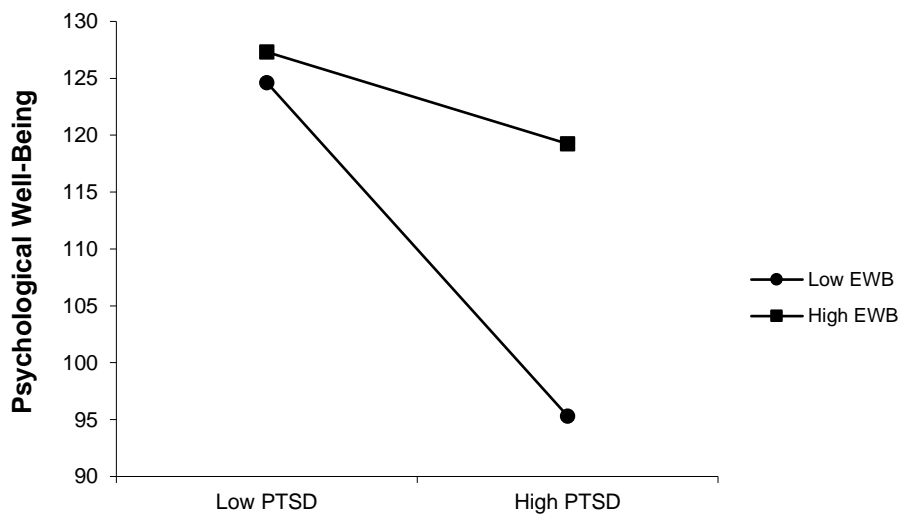


Figure 5. Moral elevation buffers the effects of PTSD on psychological well-being.

As hypothesized, the model examining PTSD symptoms and moral elevation as predictors of psychological well-being in the sex-trafficked women's sample indicated a significant effect of moral elevation, with higher levels of moral elevation predicting higher levels of psychological well-being. Additionally, as predicted, the main effect of PTSD symptoms was significant, with higher PTSD symptoms predicting lower levels of psychological well-being. The interaction effect between moral elevation and PTSD was marginally significant and followed the same pattern as in the total sample, $b = .09$, $SE = .05$, $p = .09$; this fit with my hypotheses.

In a model examining PTSD symptoms and moral elevation as predictors of psychological well-being in the student sample, results suggested a trend with higher elevation predicting marginally higher psychological well-being. Similarly, the PTSD symptoms did not significantly predict lower well-being but trended in this direction. Contrary to hypotheses, the interaction between moral elevation and PTSD symptoms in predicting psychological well-being in the student sample was not significant, meaning that the impact of trauma on well-being was not significantly buffered by higher moral elevation.

Multiple regression results for implicit moral purity (See Table 5). As hypothesized, in the model examining PTSD symptoms and implicit moral purity as predictors of psychological well-being in the overall sample, results again indicated a significant unique effect of PTSD symptoms on well-being. Implicit moral purity did not predict psychological well-being. In the overall sample, results indicated a significant interaction between implicit moral purity and PTSD symptoms. Specifically, simple slopes analyses indicated that at low levels of implicit moral purity (1 *SD* below the mean

= -0.55), higher PTSD symptoms predicted lower psychological well-being: $b = -1.05$, $SE = .20$, $p < .001$. However, at high levels of implicit moral purity (1 SD above the mean = 0.87), this relationship was not significant: $b = -0.09$, $SE = .19$, $p = .64$. This suggests that when the implicit tendency to view the self as unclean or morally impure is lower, PTSD symptoms may be less predictive of psychological well-being.

Table 4. Moral elevation as a moderator

Sample	Model	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	LLCI	ULCI
Overall	Moral elevation	1.25	0.44	2.83	0.01	0.37	2.14
	PTSD symptoms	-0.50	0.12	-4.07	0.0001	-0.74	-0.25
	Moral elevation x PTSD	0.05	0.03	2.00	0.05	0.0001	0.11
College	Moral elevation	1.77	0.50	3.57	0.00	0.77	2.77
	PTSD symptoms	-0.25	0.17	-1.49	0.14	-0.59	0.09
	Moral elevation x PTSD	0.02	0.04	0.44	0.66	-0.06	0.10
Trafficked	Moral elevation	2.36	1.03	2.29	0.04	0.11	4.61
	PTSD symptoms	-1.16	0.36	-3.19	0.01	-1.95	-0.37
	Moral elevation x PTSD	0.09	0.05	1.82	0.09	-0.02	0.21

Contrary to expectations, in a model examining PTSD symptoms and implicit moral purity as predictors of psychological well-being in the sex-trafficked women's sample, the main effect of implicit moral purity was not significant. In line with hypotheses, the main effect of trauma was significant, suggesting that those with higher levels of PTSD symptoms had a reduced sense of implicit moral purity. The interaction between implicit moral purity and PTSD symptoms was not significant; this was contrary to hypotheses, but trending in the expected direction.

Table 5. Implicit moral purity as a moderator

Sample	Model	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	LLCI	ULCI
Overall	Implicit moral purity	0.78	3.36	0.23	0.82	-5.93	7.49
	PTSD symptoms	-0.57	0.13	-4.52	<0.001	-0.82	-0.32
	Implicit moral purity x PTSD	0.68	0.22	3.16	<0.001	0.25	1.11
College	Implicit moral purity	-5.58	3.62	-1.54	0.13	-12.86	1.70
	PTSD symptoms	-0.40	0.19	-2.11	0.04	-0.77	-0.02
	Implicit moral purity x PTSD	0.73	0.33	2.22	0.03	0.07	1.40
Trafficked	Implicit moral purity	12.97	10.54	1.23	0.24	-9.99	35.93
	PTSD symptoms	-0.96	0.43	-2.25	0.04	-1.88	-0.03
	Implicit moral purity x PTSD	0.71	0.43	1.63	0.13	-0.24	1.66

In a model examining PTSD symptoms and implicit moral purity as predictors of psychological well-being in the student sample, the main effect of implicit moral purity was not significant. The main effect of PTSD symptoms on well-being was significant. In addition, the interaction was significant. For individuals at low implicit moral purity scores (1 SD below mean, -0.54), as PTSD symptoms increased, well-being significantly decreased, $b = -.86$, $SE = .32$, $p < .01$ (see Figure 6). There was no effect of PTSD on well-being at high levels (1 SD above mean, 0.74) of implicit moral purity, $b = .07$, $SE = .24$, $p = .77$.

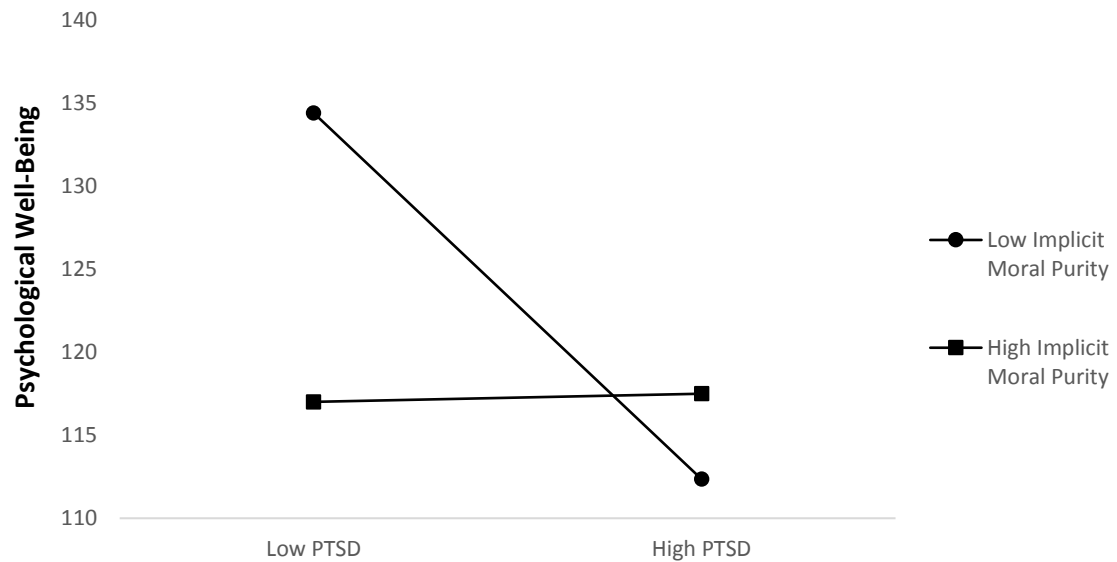


Figure 6. Implicit moral purity buffers the effects of PTSD on psychological well-being.

Qualitative analyses. The present study also included qualitative analyses of participants' open-ended responses to interview questions pertaining to moral emotions, in order to complement quantitative analyses of these constructs. For the purpose of my research, I conducted qualitative analyses for the sex-trafficked women's sample only, to further characterize psychological experiences and well-being of these women.

Responses to the interview questions were coded based on relevant theories. The raw frequency of codes assigned for each question is reported in bar graph form to provide information about the types of experiences that made the women feel grateful, that elevated or inspired them, or that triggered feelings of moral purity or impurity. Figures 1 through 4 show frequencies of coding categories for each of the coded items; some of the codes that were included in the coding schemes were never assigned to a response because they were not relevant to the theoretically defined categories, and therefore are not included in Figures 7 through 10 (e.g., quiet, introspective activities).

The women in the sex-trafficked sample typically tended to respond to the question, “What sorts of things are you thankful for?” with answers in the following coded categories: affiliation (e.g., “My family,” “My son,” “Genesis Project.”), physical health (e.g., “Being alive,” “Sobriety,” “Not starving.”) and spirituality (e.g., “Church, God, everything,” “Being alive because so many times God chose for me to live.”). They also reported gratitude for safety, community feeling (opportunities to help others), and self-acceptance. These responses all represent intrinsic values according to self-determination theory (Kasser, 2002). See Figure 7 for a graphic depiction of response code-types.

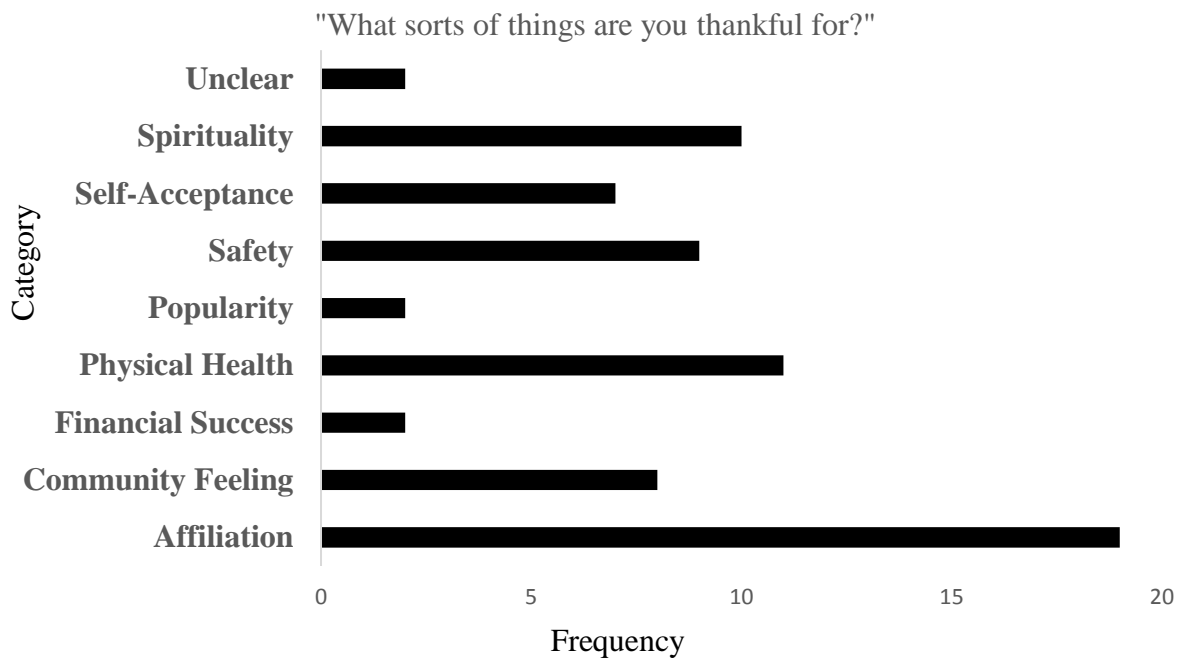


Figure 7. Frequency of response categories for gratitude in sex-trafficked women.

The women most typically responded to the elevation question with responses coded with the helping/kindness category (e.g., “When I see someone who’s been through the life who’s giving back. I want to give back, inspires me,” “People are

suffering and still go out of their way to help someone.”), generic socializing (e.g., “Genesis Project,” “My mom I admire for a lot of things,” “[My] daughter keeps me going, reminds me there is good in the world.”), and autonomy (e.g., “My tribe...inspire[s] me [because they are their] own government, sovereign, independent,” “An ability to live a normal life.”) categories. Indeed, it appears that, as imagined, the most common response type, by far, captured the participant having witnessed a kind or helping behavior; additionally, some participants went on to mention how witnessing this type of behavior made them want to give back themselves. Thus, these findings are in line with the theory of moral elevation. Furthermore, the fact that the next most common responses were generic socializing and autonomy code types fits with the values we might expect these women to identify as important most fundamental to well-being, according to self-determination theory. See Figure 8 for the associated bar graph of responses.

In response to the question “What sorts of things make you feel unclean?” the sex-trafficked women’s sample most commonly endorsed responses in the following categories: Sex (e.g., “Guys,” “When men look at me,” “Touching a computer,” “Seeing men look at me or stare or turn.”), hostility (e.g., “Violence,” “Hatred, resentment,” “Usually my own anger.”), arrogance (e.g., “When my family is judgmental,” “Attitudes.”), and alcohol or substance use (e.g., “Drugs made me feel that way, I was emotionally detached, catatonic,” “Seeing people at my mom’s house do drugs.”). These responses align with Tybur et al. (2009)’s identification of the triggers for disgust, with the most common response being in the sex code category, by far, and then the next most common being in the hostility category (to include violence and crime). The one response

type that was more surprising, but which makes sense, was the arrogance code; the women likely have a heightened awareness of and experience of judgment by others when considering the lifestyle of sex trafficking. See Figure 9 for the related bar graph of response types for this question.

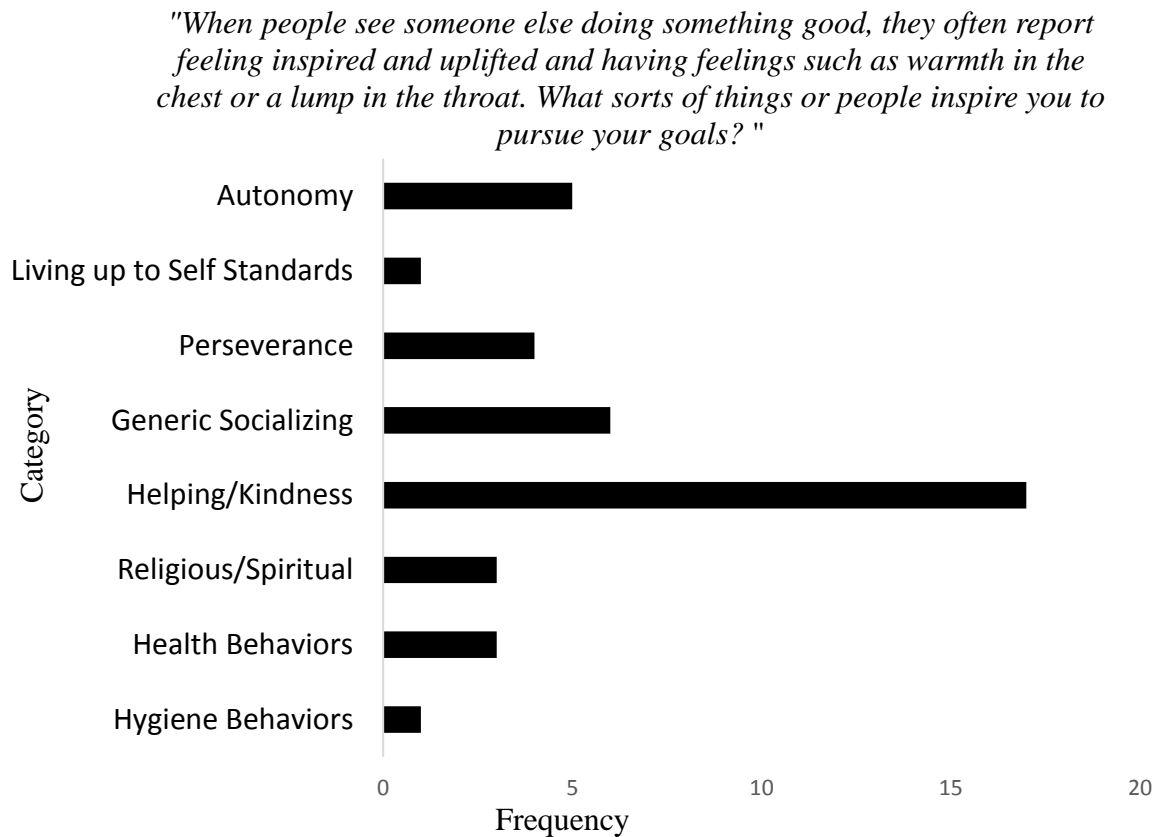


Figure 8. Frequency of response categories for moral elevation in sex-trafficked women.

Finally, upon examining the most frequent response codes for the question, “What sorts of things make you feel clean or pure?”, sex-trafficked women endorsed the following: helping/kindness (e.g., “Being there for people,” “Helping people [as a] program aid,” “Genesis Project.”), religious/spiritual behaviors (e.g., “Going to church,” “Prayer,” “God.”), and generic socializing (e.g., “My kids,” “Meeting new people who are gonna [sic] be a positive influence in your life,” “Real relationships, [they are]

empowering.”). Each of the categories that emerged as most common in response to the question of what makes one feel clean all have an underlying theme of connection with others and many of the responses specifically mention other people within them. Even references to God can be considered a form of interpersonal connection.

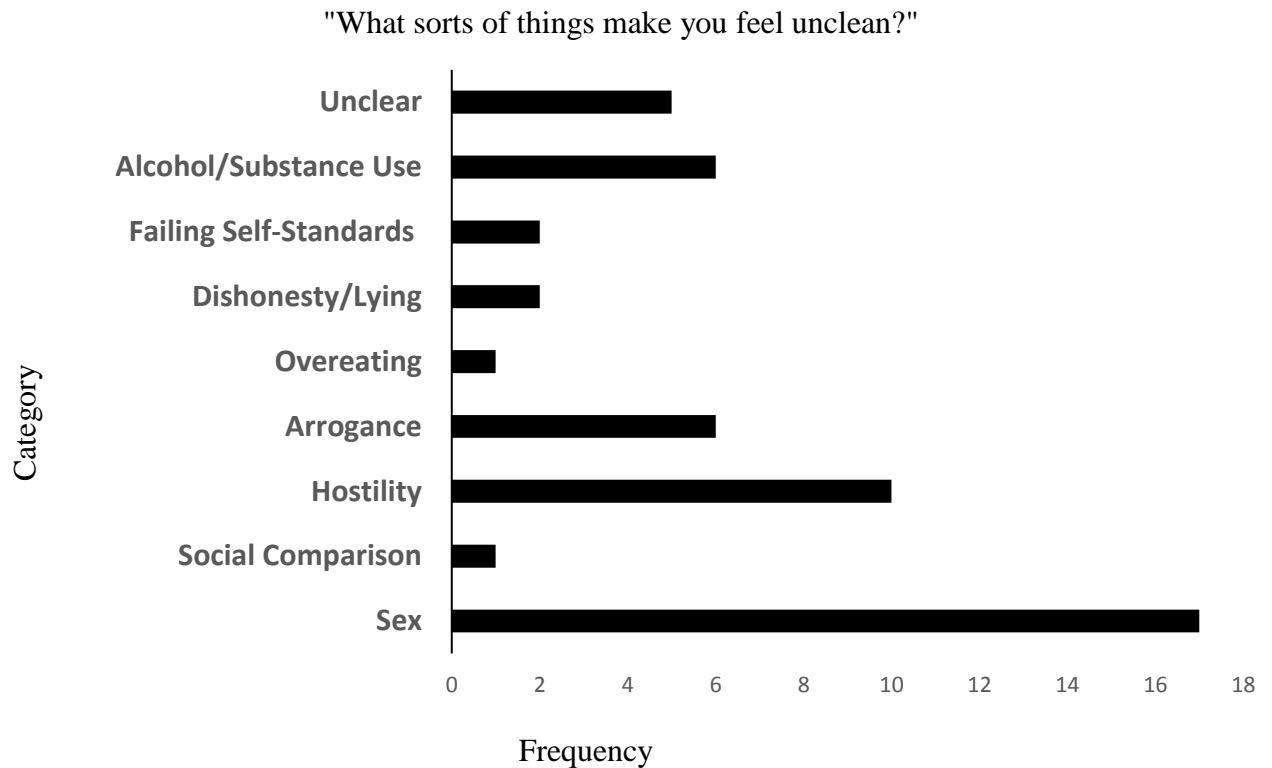


Figure 9. Frequency of response categories for moral impurity in sex-trafficked women.

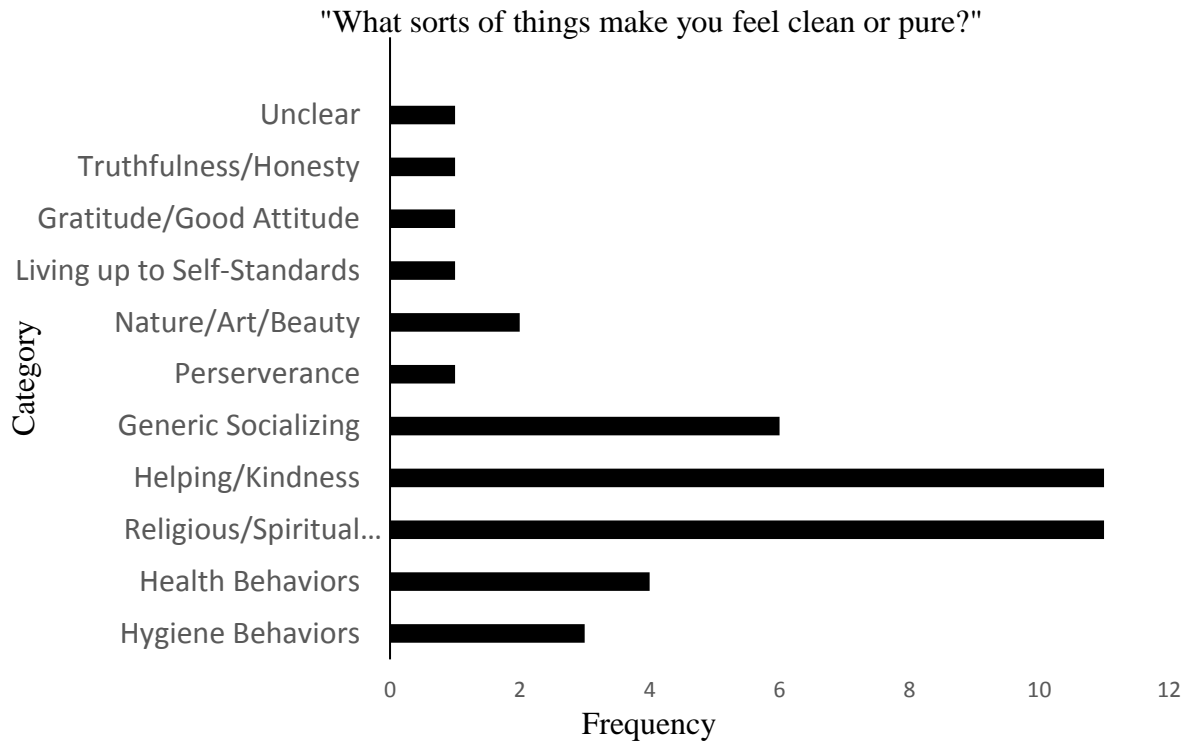


Figure 10. Frequency of response categories for moral purity in sex-trafficked women.

Chapter IV:

Discussion

The purpose of the present research study was to examine the relationship between trauma and psychological well-being in concert with the effects of several potential moderators to the relationship, including trait gratitude, moral elevation, and implicit moral purity, in sex-trafficked and control samples. In addition, I aimed to gain nuanced detail about the types of experiences that might elicit moral emotions in women trafficked for sex, via qualitative interviews. Given that more individuals are currently living as slaves than ever before (Skinner, 2008), understanding these relationships and processes is important, with over an estimated three million trafficked persons in the world (Schauer & Wheaton, 2006). Recent United States estimates of National Human Trafficking Hotline calls identified 31,659 cases from 2007 to 2016, with 73% of these cases falling under the category of sex trafficking (Hotline Statistics, n.d.). Little research exists to inform a deeper understanding of mental health and well-being in women who have been through sex-trafficking (e.g., Yakushko, 2009). Existing research has found that trauma has a negative impact on psychological well-being in other populations (e.g., Kashdan, Uswatte, & Julian, 2006; Zatzick, 1997); however, this effect has yet to be examined in the population of women who have been trafficked for sex. Furthermore, virtually no studies have examined the strengths or positive emotional experiences of women in the life.

PTSD

PTSD prevalence. As hypothesized, sex-trafficked women were more likely to meet diagnostic criteria for PTSD and had higher levels of PTSD at the symptom level

than did those in the control sample. In the present study, 10 of the 16 women in the sex-trafficked sample, 62.5%, met ADIS-5 criteria for PTSD and 11 of the 16, 68.75%, had symptom severity scores suggesting probable diagnosis. These percentages are comparable to that of previous literature. For instance, one study cited 77% of women and girls trafficked for sex to meet criteria for probable diagnosis (Hossain et al., 2010). Farley et al. (2003) found that 68% of women involved in prostitution in nine different countries met criteria for PTSD. Rimal and Papadopoulos (2016) found a much lower prevalence of 29.7% in a sample of female Nepalese survivors of sex trafficking; however, the prevalence in the present study is more consistent with estimates from the other studies. Furthermore, the present study found similar symptom severity scores as well. Women trafficked for sex had an average score of 45.44 in terms of PTSD symptom severity in the present study, comparable to, or higher than, that of Iraqi and Afghanistan combat veterans with problem-drinking behavior (Keane et al., 2014), women with chronic intimate partner violence histories (Minshew & D'Andrea, 2015), and recent sexual assault victims (Nickerson, Steenkamp, Aerka, Salters-Pedneault, Carper, Barnes, & Litz, 2013) suggesting that the severity of PTSD within the population of women trafficked for sex is indeed substantial.

In the control sample, two of the 50 (4%) college females had symptom scores suggesting probable diagnosis with an average score of 15.90, though six (12%) formally met ADIS-5 criteria for PTSD. Previous literature has found similar PTSD symptom severity in a sample of self-identified college students who had experienced a very stressful life event (Blevins, Weathers, Davis, White, & Domino, 2015). As one would expect, the prevalence of PTSD in the present sample is somewhat lower than that in a

student sample after a school shooting (Vieselmeyer, Holguin, & Mezulis, 2017) and general lifetime prevalence rates (8.7%; APA, 2013).

Index traumas. In the present study, women trafficked for sex reported traumas consistent with the nature of sex trafficking as typically described in previous literature including crime victimization, sexual assault, and physical abuse. All 16 women in the sample endorsed sexual trauma or abuse at one time or another, generally of a repeated nature. Stark and Hodgson (2003) describe sex trafficking to include control tactics and social isolation, physical, sexual, and psychological abuse and violence including repeated rape. For those in the college student sample, the most commonly identified trauma was either witnessing or hearing about a serious event happening to a loved one or a more general stressful, but not necessarily traumatic, event. Five college women endorsed sexual trauma and of those, three chose to discuss this for part of their interview. This is lower than the national reported average 16.7% of women who have experienced an attempted or completed rape at some point in their lifetime (National Institute of Justice & Centers for Disease Control & Prevention, 1998). Rape being only one form of sexual assault, it would be expected that the prevalence rates of more broad sexual assault may be higher in the control sample. It may be the nature of the interview that removes some level of anonymity from the participant, causing them to be less open; it may also be the nature of the specific control sample which identifies primarily as Christian and seeking higher education, and is not necessarily representative of the general population.

PTSD predicted lower well-being. As expected, PTSD consistently predicted lower well-being across sex-trafficked, control, and overall samples, which replicates

findings indicating that trauma has a negative impact on psychological well-being in other populations (e.g., Ford, 2002; Zatzick, 1997). Specifically, PTSD predicted lower well-being in the full sample without moderators (i.e., gratitude, moral elevation, implicit moral purity) included in the statistical model; the relationship was still significant when moderators were included in the model. This was also the case in the sex trafficked sample. However, in the student sample PTSD only predicted lower well-being when implicit moral purity was included in the model and not when gratitude or moral elevation were included. One hypothesis for this may be that PTSD, the moderator variables, and well-being share statistical variance, making PTSD a less consistent unique predictor of well-being in the student sample. There was also less variability in PTSD symptom scores in the student sample compared to the sex-trafficked sample, which is likely due to a lower prevalence rate of PTSD in this sample, thereby reducing potential covariance and, possibly, statistical power to find an effect of PTSD on well-being.

Psychological well-being subscale measures captured negative and positive emotions as well as engagement, relationships, meaning, and achievement. Women trafficked for sex endorsed significantly more negative emotions and less positive emotions than did college students, as predicted. However, these women did not have significantly lower psychological well-being scores than did controls on other variables (i.e., engagement, relationships, meaning, achievement, and overall well-being), contrary to hypotheses, though differences trended in the predicted direction. This lack of group differences on these variables may suggest that women who have been in the life may be more resilient than expected and have positive experiences despite significant trauma history. However, it may also be due to a lack of statistical power to find these group

differences because of the small sample size, so future studies must examine such questions in larger samples. Nonetheless, the study was adequately powered to detect some of the larger between-group effects and provides a contribution to the sparse literature on this population.

Investigation of Strengths as Predictors and Moderators

Gratitude. When comparing trait gratitude across samples, women trafficked for sex had marginally lower levels of trait gratitude than did college women. While both the trafficked and college samples identified as predominately Christian, a faith where gratitude is often emphasized (e.g., Vo, 2014; Aquinas, ca. 1273/1964), many of the women in the trafficked sample reported that they were raised Christian or used to identify as Christian and were recently returning to the faith. Additionally, the student sample had less variance than the trafficked sample, leading to possible problems of homogeneity of variance and range restriction.

When examining gratitude as a predictor, high levels of gratitude predicted higher levels of psychological well-being in the overall and control samples, but not in the sex-trafficked sample, contrary to hypotheses. Originally, I had hypothesized that gratitude would broaden one's thinking and expand cognitive flexibility to therefore reduce cognitive inflexibility associated with PTSD. Additionally, Dunn and Schweitzer (2005) found that gratitude predicted increased levels of trust for individuals even when they do not know the giver or benefactor. However, it appears that this was not the case here; in fact, it may be that PTSD within sex-trafficked women prevents gratitude from exerting its typical effects. Specifically, it may be more difficult to experience gratitude if a victim of sex-trafficking has difficulty trusting others or has had negative experiences where

they have received something in the past and been forced to do something in return (“bait and switch” technique; Reid, 2016). Research has begun to examine traits that can inhibit the development of gratitude, one of which is cynicism or a lack of trust (Solom, Watkins, McCurrach, & Scheibe, 2017); without the ability to trust in the ‘goodness of the giver’, an individual is not likely to feel grateful towards that person (McCullough et al., 2002). In other words, if one believes that something was done or given for an ulterior motive, such as for sex in return, gratitude is less likely to follow (Watkins, Scheer, Ovnicek, & Kolts, 2006). Another explanation may simply be the small sample size in the sex-trafficked sample.

Additionally, gratitude did not buffer the relationship between trauma and well-being in the overall, control, and sex-trafficked samples, contrary to predictions, although it trended in the expected direction for the control sample. However, this is again potentially related to the small sample size and therefore reduced power, as it is contrary to previous research which suggests that gratitude is associated with lower levels of depression, anxiety, and envy (McCullough, et al., 2002), as well as with lower PTSD in veterans (Kashdan, 2006).

While gratitude did not predict well-being in the sex-trafficked sample, women in this sample still identified several areas in life for which they were thankful, including affiliation (relatedness) with others, their physical health, and their spirituality. Several of the most frequent responses represented intrinsic values, in line with the theory that such values promote well-being (Kasser, 2002). Sex-trafficked women often stated that simply “being alive” was something they were thankful for. One participant even stated: “Maybe people need to experience something horrible to live life.” This specific answer appears

to fit with the construct of “posttraumatic growth,” or the theory that positive changes can happen after adverse experiences, even increasing functioning (Tedeschi & Calhoun, 1996). Specifically, this participant’s response encapsulates the meaning-making stage of posttraumatic growth which follows the trajectory that during a trauma an individual loses meaning and afterwards may work towards searching for meaning and then finding new meaning (e.g., Vanhooren, Leijssen, & Dezutter, 2017). In other words, posttraumatic growth is a developmental phase which likely alters the individual’s views of the world in order to accommodate their traumatic experiences.

Moral elevation. In the overall, student, and sex-trafficked samples, trait proneness to moral elevation predicted higher well-being. While little research thus far has examined the effect of moral elevation on psychological well-being, there is research to suggest that moral elevation has a positive impact on variables associated with well-being, such as increased feelings of closeness with others, reduced interpersonal conflict, and reduced anxiety and dysphoria (Erickson & Abelson, 2012), as well as a possible increase in cognitive flexibility associated with the broaden-and-build theory (Pohling & Diessner, 2016).

Further, there was a significant interaction between moral elevation and trauma on well-being in the overall and sex-trafficked samples, suggesting that higher levels of moral elevation may buffer or reduce the impact of trauma on psychological well-being as predicted. This was also the trend for the student sample. While it is not possible to confirm because data was not collected on cognitive styles and attention, one hypothesis may be that it is due to the effect moral elevation potentially has on cognitive processes, wherein directing attention to morally positive actions of others (Algoe & Haidt, 2009).

This is the opposite of how PTSD affects ones' attention, causing one to hone in on potential threat. It is also interesting to note that the moderating effect was not significant within the student sample. While both the student and sex-trafficked samples were predominantly Christian, it could be that across these samples there is a subtle, nuanced difference related to spirituality. Moral elevation has been hypothesized to function as the primary driver of religiously-based prosocial behavior as seen in depictions of saints and other good-doers (Palmer, Begley, & Coe, 2013), and those with a Christian background may tend to view prosocial actions as having a spiritual nature. Further, Rubin, and Peplau (1973) found that the just world belief, or the belief that good things happen to good people and bad things happen to bad people, was stronger in those who believed in God. It may be that the college students continue to ascribe to the just world belief (Lerner & Miller, 1978) associated with their faith, while women trafficked for may be less likely to ascribe to the just world belief within their faith, due to the fact that they have experienced atrocities such as sexual assault and crime victimization due to no wrong-doing of their own, directly challenging the just world hypothesis. Another hypothesis could be that these findings are due to homogeneity of variance and range restriction.

In answering what uplifts and inspires them, women trafficked for sex responded with answers falling in the helping and kindness, generic socializing, and autonomy coded categories. It is notable how some of the spontaneous answers closely portrayed the concept of moral elevation; for instance, one participant stated: "When I see someone who's been through the life who's giving back...I want to give back... [it] inspires me." Another stated: "People are suffering and still going out of their way to help someone."

These responses were in line with moral elevation theory (Haidt, 2001); specifically, witnessing another person or persons engage in a rare act of kindness or prosocial behavior appears to instill a desire in the witness to replicate such behavior, help others, or become a better person (Haidt, 2003b; Schnall, Roper, & Fessler, 2010).

Implicit moral purity. The main effect of implicit moral purity was not significant in the overall, student, or sex-trafficked samples, contrary to hypotheses. This could plausibly be due to small sample sizes; it may be that a direct effect on well-being is relatively small, particularly when PTSD symptoms are simultaneously entered in the model. There was a significant interaction effect between implicit moral purity and trauma symptoms in the overall sample, suggesting that for individuals with an implicit tendency to view the self as morally clean, PTSD symptoms were less predictive of psychological well-being. Inversely, implicit moral impurity significantly amplified the effect of trauma on psychological well-being in the student sample, in line with research showing that moral injury may catalyze the development of PTSD (Stein et al., 2012; Jinkerson, 2016).

Surprisingly, college students were more likely to view themselves as morally unclean or impure than sex-trafficked women were. This was contrary to hypotheses which supposed that women trafficked for sex would tend to view themselves as unclean, based upon previous studies in which the effect of sexual trauma suggested an increase in reported feelings of dirtiness (e.g., Fairbrother & Rachman, 2004) or mental pollution (e.g., Olantunji, Elwood, Williams, & Lohr, 2008). Because sex-trafficked women encounter physical, sexual, and moral pollutants on a daily basis (Dovydaitis, 2010), it was predicted that they would see themselves as potentially morally unclean or impure;

however, extant studies linking trauma to perceived dirtiness have not examined samples of women with chronic and pervasive sexual trauma. It is possible that these daily events could potentially have a numbing or habituating effect. It may be that repeated daily exposure to these experiences and contaminant leads individuals in the life to be less aware of an incongruence with their daily life and their moral values. As in war, combat veterans have witnessed and participated in behavior that was likely incongruent with their ethical or moral values prior to war, but which soon become commonplace or “normal” (e.g., Currier, Holland, Dresher, & Foy, 2015). This sort of situation may be similar for women who have been sex-trafficked. Repeated exposure to events that are incongruent with their natural values may cause what is known as “moral injury,” where one’s morals and values are repeatedly denied. It may also be that the women in this sample could be externalizing the concept of moral dirtiness to the individuals who are buying sex for money and to their pimps. These women could have learned to compartmentalize different areas of their lives over time, or perhaps on the more extreme end, dissociated the experience from the rest of their autobiographical stories. This would therefore allow them to see themselves as morally pure or clean. Additionally, it is important to consider the nature of the control sample, which was predominately Christian young women less likely to have trauma histories relative to the trafficked women. While the trafficked sample identified as predominately Christian as well, again, it is likely to be less at the forefront of this sample’s mind. It is likely that individuals within the control sample have internalized Christian cultural beliefs leading towards a bias to view the self as sinful in nature and, therefore, unconsciously as morally unclean,

whereas these beliefs may not have been as at the forefront in the women trafficked for sex.

Participants were also asked what makes them feel unclean; in response, the most common answers were sex, hostility, arrogance, and alcohol and substance use. Considering how sex and drug use are core to the nature of “the life” of sex trafficking and prostitution (e.g., Hom & Woods, 2010), these answer categories are reasonably associated with past stressors and therefore may trigger feelings of disgust and uncleanliness both physically and morally. Responses are also congruent with the evolutionary theory of disgust which posits that this emotion exists as a sensitivity to not only physical pathogens but also sexual and moral violations (Tyber, Lieberman, & Griskevicius, 2009). In response to the question of what makes them feel clean or pure, participants most commonly answered with helping or kindness behaviors, general social engagement, and religious or spiritual activity. In light of the responses to the question about what makes them feel dirty, these answers make sense because these behaviors are typically the opposite of those that make a person feel unclean and may have an undoing effect. These responses also fit with Haidt’s (2003) theory about the moral dimension of social cognition which runs from perceived moral goodness (associated with being “high” in social space and thereby near God or the divine) to moral impurity, which is often described as low in social space, near the ground, where filth and rubbish are likely to lie. Thus, despite the fact that “living the life” in the “dirty” streets made these women feel unclean at times, they reported feeling cleansed by positive contact with God and with other people.

Integrating the Findings

Resiliency. Examining the findings as a whole, the women in the sex-trafficked sample appear to be much more resilient than perhaps expected after having experienced such severe and repeated trauma. Specifically, it was found that there were no significant differences between the women and the control sample on several of the well-being subscales including engagement, relationships, meaning, and achievement. In addition, the differences between the women and controls on gratitude was relatively small. Further, the women are readily able to identify what they are thankful for and note what inspires them. Although these women have experienced some significant traumatic events, as some of them have identified, it may be that they are indeed stronger for it and some of them may even now be in the meaning-making stages of posttraumatic growth. Despite being much more likely to meet diagnostic criteria for PTSD and have more severe levels of symptoms related to traumatic experiences, they still report positive states and hopefulness. Anecdotally, not only did some of the women report wanting to emulate prosocial behaviors they have witnessed, but several of them are now involved in anti-trafficking efforts to help women who are in similar situations to those that they were once in (e.g., volunteering at the drop-in center, working at a homeless women's shelter); this represents moral elevation's action-tendency to the fullest extent. Such experiences of moral elevation not only appear to provide the women with a deeper purpose in life, but it acts as a buffer against the effect of PTSD on well-being as well, as hypothesized, despite high levels of trauma-related symptoms.

Treatment implications. Indeed, the findings of the present study provide further understanding of sex-trafficking related trauma and its sequelae. This research may

prompt clinicians to explore habituation to moral injury in women recently escaping sex trafficking or sex work, or the effect that forced engagement in behavior incongruent with morals and values has on their psychological well-being. Due to moral injury, it is likely that there is initial blame and shame to process, also known as manufactured (or secondary) emotions in some cognitive theories of PTSD (e.g., Cognitive Processing Therapy; Resick, 2001).

Additionally, from this research we can identify areas that are particularly triggering for women in this line of work. These include sex, men, intimacy, drugs, and hostile behavior, among others. A therapist could explore with these individuals how this impacts their life and values; for example, if they used to want a meaningful romantic relationship and now they are avoiding all intimate relationships this is likely impacting their psychological well-being. Further, it may be valuable to explore what it means to value life in a different way post-trauma, as part of the posttraumatic growth cycle. For instance, if a patient identifies that she is simply thankful to be alive, what might it mean to “be alive?” Is this simply literal survival, or might there be very specific areas of her life that she can work on to increase meaning and connection to values?

Finally, the experience of moral elevation was shown to buffer the impact of trauma for sex-trafficked women in the present study. Therefore, it would be important to increase opportunities to experience moral elevation in one’s life as well as to identify ways that this emotion can be induced in a therapy session, whether through videos as in several research studies thus far or *in vivo*. *In vivo*, this may look similar to exposure therapy in which the patient and the clinician work together to create a list of experiences that might elicit relevant trauma-related emotions, except in this case that morally

elevating stimuli, exemplars, or stories would be selected to elicit this positive emotion. Alternatively, perhaps the patient could join a volunteer organization in order to increase exposure to others who are engaging in prosocial behaviors.

Furthermore, it is important to consider the role of gratitude in these women's lives. It appears that gratitude, which occurs as a result of someone receiving some sort of benefit, may be more difficult to cultivate for women who have been through "the life" of sex trafficking because of a damaged ability to trust others who may genuinely want to help them. This certainly could come up in the context of therapy; the clinician naturally wants to help a female client with a history of sex trafficking, but the woman is likely to experience difficulty trusting and therefore may be less likely to open up in treatment. If the clinician assesses for such trust difficulties and client expectancies going into the therapeutic endeavor, he or she may be particularly attentive to the therapeutic alliance from the outset. Attentiveness to creating and maintaining a consistent therapeutic alliance with such women may, over time, rebuild trafficked women's capacity for interpersonal trust, and thereby their capacity for gratitude. In this way, it may be that therapy can enhance the potential for gratitude to exert its typical beneficial effects on well-being, which have been documented in non-trafficked samples. Of course, such speculations must be tested directly in future research.

Limitations

As with all research, there are several limitations to the present study. Most notably, due to the nature of the population of sex-trafficked women, and despite considerable recruitment efforts at several sites in the Puget Sound regions, it was difficult to obtain a large sample size. The small sample size in the present study reduces

the ability to detect statistical relationships that may actually exist within the population, due to a reduced level of statistical power. Even though I had contacted and networked with virtually all of the rescue and resource agencies in the region, it took approximately three years to obtain interviews with the 16 women included in the trafficked sample. In addition, women would often utilize multiple organizations and become “double-booked” for a second interview, which suggests that we had likely made interviews available to most of the women who were interested in interviewing, and had saturated the Seattle-area organizations with information about opportunities to partake in the study. A control sample was added in order to address some of the concerns of having such a small sample size in the trafficked sample; however, this can only assist in increasing the overall sample size and still does not address the issue of finding additional participants to engage in the study as part of the trafficked sample and to assist in further characterizing the psychological well-being of sex-trafficked women. Future studies may be able to address this problem if researchers in different regions were to pool samples to obtain a larger sample, as well as more balanced samples.

A related limitation is that the women in the present study, both in the sex-trafficked and student samples, may not be fully representative of the general population. The sex-trafficked women who engaged in interviews almost all identified as Christian (fifteen out of the sixteen women), which is not representative of the general population of sex-trafficked women (who come from all faith backgrounds). Additionally, the women who chose to be in the study are likely different than those who did not choose to be in the study in various ways; for instance, these women may tend to be more outgoing, help-seeking, or hopeful than those who either did not volunteer to partake or who do not

seek out rescue agencies. Similarly, the college women in the control sample nearly all identified as Christian as well, which is not representative of the general population. Additionally, they had a significantly lower mean age than those in the sex-trafficked women's sample and were not matched controls in that regard, despite matching on gender and religious traditions.

Another limitation that was difficult to manage was the lack of consistency in terms of interview environment. The present study required a significant deal of flexibility in terms of when and how to administer interviews and measures in order to obtain data, and therefore, at times participants would have children present with them in interview. In particular, two individuals had a case manager present in order to allow them to feel safe in the presence of an unknown researcher. These limitations were taken into consideration; however, I was aware that these women are often the caretakers of small children and/or have been through extremely traumatic situations that require some level of flexibility and scaffolding to build a level of trust. Given the context, these adjustments were permitted upon interview, but do have some impact on standardization of interview and measure administration.

Further, the measure used to rate psychological well-being used in the present study, the PERMA, is still relatively new and emerges from the positive psychology literature, particularly Seligman (2011)'s multidimensional well-being theory. While initial research has been conducted and shown to support the validity of the PERMA in terms of its ability to predict psychological well-being and its higher-order factor structure (Coffey, Wray-Lake, Mashek, & Branand, 2016), it is still in its early stages of psychometric validation and exploration.

Similarly, the brief IAT that was used in the present study to measure implicit moral purity was created during the study and used for the first time. While the IAT was created based on the theoretical underpinnings of moral purity research (e.g., Schnall, Benton, & Harvey, 2008) and created and interpreted drawing upon standard IAT protocols (e.g., Greenwald et al., 2003), the specific construct of purity has not been measured previously via IAT. Psychometric properties can be extrapolated from previous research related to the psychometric properties of other brief IATs (Sriram & Greenwald, 2009), but further research is warranted on this particular application.

Future Research

Drawing upon the limitations of the present study, it is apparent how further research could be of benefit in better understanding the population of sex-trafficked women and their mental health needs. First and foremost, a larger sample size would be ideal; it may be possible to obtain a larger sample size by reducing the overall burden of involvement in the study (e.g., administering a brief electronic survey upon admission to local agencies or organizations), increasing participation compensation slightly, or pooling samples across sites/regions, as noted above. Additionally, further studies would need to examine a more representative sample of sex-trafficked women who do not nearly all identify as Christian; as awareness of the problem of sex-trafficking continues to increase, availability and diversity of resources will continue to increase and likely make this more possible. Also, direct targeting of a broader sample via networking with agencies in particular subcultures (e.g., social services in highly Muslim communities) may yield greater generalizability. Similarly, if examining a control alongside the sample of interest, drawing the controls from a more general resource, such as online or in the

local community, rather than at a predominantly Christian university would allow the sample to be more representative of the general population as well.

It would also be useful to examine the effect of sex-trafficking-related traumas on psychological well-being at multiple time points (i.e., longitudinal research) and to administer various interventions, such as those that may increase state gratitude (e.g., daily gratitude journals, gratitude letters), moral elevation (e.g., elevating viral video clips), or moral purity (e.g., random assignment of vignettes used to manipulate feelings of purity versus disgust). Moreover, it may be worthwhile to test whether an interview such as the one in the present study is an intervention in itself, as simply talking about a traumatic or shameful experiences can reduce their impact, as in exposure therapy and shame reduction exercises; additionally, talking through sources of gratitude and inspiration may be therapeutic. However, this was not measured in the present study. An area that may be particularly useful to examine in future research would be to examine what has been helpful for the women who are seeking help at local agencies and organizations, including what has been helpful in both escaping from, and staying out of, the life of sex-trafficking. While related themes emerged within the present study, these questions were not directly and could be useful in identifying ways to help women to move out of the life. Finally, because of the prevalence of substance use in the population of sex-trafficked women, it would be beneficial to include related measures in future research.

In conclusion, the present study examined the relationship between trauma symptoms associated with sex trafficking and psychological well-being, as well as the moderating effects of trait gratitude, moral elevation, and implicit moral purity on this

relationship. It appears that, while sex-trafficked women have experienced repeated, horribly traumatic experiences, often of a physically or sexually abusive nature, these women generally continue to push forward and prove to have astounding levels of resilience and may even experience positive emotional states and traits that facilitate such resilience and posttraumatic growth.

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