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Abstract

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Sex trafficking is a hidden crime that affects many vulnerable groups such as women and children. Prior research has demonstrated that individuals currently or formerly engaged in sex trafficking experience heightened levels of depression, anxiety, posttraumatic stress disorder (PTSD), and other mental health concerns. Most of these studies relied on structured interviews and, to date, no empirical studies have evaluated the psychological difficulties of sex trafficking victims with an empirically valid measure. The Minnesota Multiphasic Personality Inventory-3 (MMPI-3; Ben-Porath & Tellegen, 2020a) is a personality assessment measure widely used to assess sexual abuse survivors, substance abusers, and various inpatient and outpatient psychiatric populations. The current study investigated the psychological difficulties of a sex-trafficked sample (N = 76) through examination of their MMPI-3 score patterns. Participants consisted of formerly sex-trafficked women currently receiving services in North America. The sample's mean T score was at least one standard deviation over the normative mean (i.e., in the 60-64 range) on a broad range of 17 substantive scales measuring dysregulated emotional, behavioral, cognitive, somatic, and interpersonal functioning. The Anxiety-Related Experiences (ARX) scale reached the clinical cut score of 65. Comparisons were conducted between survivors of sex trafficking who first engaged in sex trafficking as a minor versus as an adult, those with the presence versus absence of prior sexual abuse, prior physical abuse, involvement with the child welfare system, history of mental health

diagnosis, history of drug use, and legal history, and based on length of time involved in sex trafficking and length of time since exiting sex trafficking. Multivariate and univariate analyses of variance (MANOVA, ANOVAs) indicated significant differences in scores between (a) women who entered sex trafficking as a minor versus as an adult on two scales, (b) women with and without a sexual abuse history on 11 scales, (c) women with and without a physical abuse history on one scale, (d) women with and without a prior involvement in the child welfare system on one scale, (e) women with and without a mental health diagnosis on five scales, (f) women with and without a drug use history on six scales, (g) women with and without a legal history on twelve scales, (h) women involved in sex trafficking for nine or fewer years and those involved 10 or more years on six scales, and (i) women who had exited sex trafficking for two or fewer years and those who had exited for three or more years on three scales. Correlations between MMPI-3 and Dispositional Resilience Scale-15 (DRS-15) scale scores showed significant associations in the expected direction. Stepwise multiple regression analysis revealed Emotional/Internalizing (EID), Stress (STR), and Helplessness/Hopelessness (HLP) scales collectively accounted for 50% of the variance in total resilience. Contributions of this study include providing preliminary empirical data on the MMPI-3 score patterns of sex-trafficked women utilizing a North American sample, furnishing evidence of greater psychological disturbance in subgroups of sex-trafficked women with greater adverse life experiences, and showcasing the inverse relationship between psychological difficulties and resilience. Limitations of this study includes its small sample size and reduced statistical power. Future studies should obtain a larger sample, utilize longer versions of the DRS, and conduct longitudinal studies.

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Chapter 1: Introduction

Human Trafficking

Human exploitation occurs in many forms, such as sexual abuse, domestic violence, and rape. One form of exploitation is human trafficking, a form of modern-day slavery that impacts every country globally (International Labour Organization, 2017). Violations of human rights, social justice, and public health occur through physical, sexual, and emotional abuse, fraud, and coercion (Lutnick, 2016). Multiple forms of exploitation incorporate labor and sex trafficking, which includes forms of sexual exploitation such as pornography, prostitution, and any activity involving the exchange of monetary value (Lutnick, 2016). Often, people operate as mediators or traffickers, introducing vulnerable individuals to trade sex for profit and implementing tactics such as grooming, force, coercion, and manipulation. Traffickers target those who have experienced adverse life events such as trauma, familial difficulties, economic struggles, and prior abuse. The victims are left powerless in their decision to participate and often assume they did so of their own volition (Lutnick, 2016).

The United States serves as both a destination and a route of transportation for the trafficking of women, children, men, and transgender people (United States Department of State, 2017). Despite the lack of accurate estimates concerning the frequency of sex trafficking, the locations where sex trading occurs are well known. Sex trafficking is common in places with high volumes of traffic such as truck stops, military bases, conventions, sporting events, and tourist hotspots, as well as street-based prostitution and sex trading sites in private residences, motels, massage parlors, spas, nail salons, and strip

clubs in the United States (Miller-Perrin & Wurtele, 2017; Polaris Project, 2019; Trasatti & Miller, 2019).

Defining Human Trafficking

As reported by the United States Department of State (2021), any activity that involves one person forcing another into compelled service, also known as modern-day slavery or forced labor, has been described under the umbrella term of human trafficking. Multiple terms have been used to refer to sex trafficking, such as prostitution, sex trading, minor sex trafficking, commercial sexual exploitation, commercial sex acts, transactional sex, sex work, survival sex, and modern-day slavery. The terms confuse and create challenges in identifying individuals who engage in these sexual acts as multiple terms describe the same crime. A universal term for sex trafficking is necessary to avoid any misunderstanding.

The Palermo Protocol, adopted by the United Nations in 2000, is the most widely acknowledged and internationally accepted definition of human trafficking. In the Protocol, the United Nations (UN) defines human trafficking as follows:

> (a) "Trafficking in persons" shall mean the recruitment, transportation, transfer, harboring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation. Exploitation should include, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation,

> forced labour or services, slavery or practices similar to slavery, servitude or the removal of organs;
>
> (b) The consent of the victim of trafficking in persons to the intended exploitation set forth in subparagraph (a) of this article shall be irrelevant where any of the means set forth in subparagraph (a) have been used;
>
> (c) The recruitment, transportation, transfer, harboring or receipt of a child for the purpose of exploitation shall be considered "trafficking in persons" even if this does not involve any of the means set forth in subparagraph (a) of this article;
>
> (d) "Child" shall mean any person under eighteen years of age. (UN, 2000).

The U.S. approved the Trafficking Violence Protection Act (TVPA) in the same year, which defines human trafficking as:

> (a) sex trafficking in which a commercial sex act is induced by force, fraud, or coercion, or in which the person induced to perform such act has not attained 18 years of age; or
>
> (b) 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 (8 U.S.C, § 1101). (Clawson & Dutch, 2008).

Worth noting, the TVPA states that when a minor is involved, no force, fraud, or coercion is necessary to meet the sex trafficking criteria and that, while human trafficking frequently includes the transportation of people, an individual does not have to be physically moved for the crime to be classified as human trafficking (Clawson & Dutch, 2008).

Prevalence of Sex Trafficking

Sex trafficking is a multibillion-dollar business, thriving without providing survivors with the necessary support services (Kometiani, 2019). Because individuals participating in sex trafficking may have vanished or been murdered, precise data are impossible to obtain (Crawford, 2017; Miller-Perrin & Wurtele, 2017). As a result, the numbers are greatly underreported. However, sexual exploitation is the most well-known form of human trafficking, with commercial sex trafficking earning $99 billion each year (International Labour Organization, 2014; United Nations Office on Drugs and Crime 2018). According to recent estimates, approximately 40 million people are enslaved worldwide, with 4.8 million subjected to forced sexual exploitation; over 70% of the enslaved are women (International Labour Organization, 2017). Male survivors of sex trafficking make up about half of all victims, although they are frequently concealed, underreported, and neglected when seeking post-trafficking care (United States Department of State, 2017).

Interestingly, during the COVID-19 pandemic in 2020, the rates of human trafficking remained consistent, proving that it is extremely adaptable (Polaris Project, 2020). For example, 10,836 victims of sex trafficking were identified, and 7,648 situations of sex trafficking were reported in the United States in 2020 (Polaris Project, 2020). The usual routes to sex trading decreased (e.g., foster homes, strip clubs, and schools), but internet recruitment increased (Polaris Project, 2020). Specifically, Facebook and Instagram were the top sites for recruiting new victims into trafficking, as the rates increased by 120% (Polaris Project, 2020). Compared to the previous year,

recruitment through Facebook increased by 125%, and through Instagram, recruitment increased by 95% (Polaris Project, 2020).

Researchers and advocates often focus on minors who are victims of sex trafficking, as the average age of entry is 14 (Fedina et al., 2019; Gerassi, 2015; Shared Hope International, 2017). Globally, about 2 million children are sexually exploited (United States Department of State, 2010), with the industry of commercial sexual exploitation of children estimated to be worth billions of dollars (Cole, 2009; McClain & Garrity, 2011; United States Department of State, 2021). According to current estimates, children account for a quarter of all enslaved persons, with over 1 million children sex trafficked (International Labour Organization, 2017). Previous studies have found that adults who were sexually exploited as minors experience higher rates of posttraumatic stress disorder, depression, and anxiety (Abas et al., 2013; Farley et al., 2004; Hossain et al., 2010; Lederer & Wetzel, 2014; Oram et al., 2015; Zimmerman et al., 2008).

The Minnesota Multiphasic Personality Inventory (MMPI) and its revisions (MMPI-2/MMPI-2-RF/MMPI-3) are well-established personality instruments used in forensic settings to assess an individual's mental health and personality adjustment. These assessments have been conducted on various populations including child sexual abuse survivors, survivors of interpersonal violence, individuals with a history of substance use, and many others. Although the literature on sex trafficking is growing, there is still a dearth of published empirical studies examining the psychological consequences of sex trafficking with empirically supported measures. To date, no published study has evaluated MMPI-3 score patterns of sex trafficking survivors. Examining the personality characteristics of sex-trafficked victims is vital for understanding the full range of their

psychological difficulties. More information is also needed to examine differences within the sex trafficking population and their overall distress. This study examined these gaps in the literature using a North American sample of women with a history of sex trafficking.

Chapter 2: Review of the Literature

The crime of sex trafficking is a global pandemic that often preys on the most vulnerable individuals and has long-lasting consequences for its victims. The susceptibility to sex trafficking is not primarily determined by a single factor. Various external factors influence the intersectionality between personality characteristics and personal life history, so risk factors and pathways to sexual exploitation cannot be measured linearly (Sidun & Flores, 2020). The interaction between social settings and personal relationships, environment, trends in the economy, government regulations, and cultural factors that affect the local community are all part of the multilayered system (Sidun & Flores, 2020), which globalization and international policies influence (American Psychological Association [APA], 2014; Crawford, 2018).

Risk Factors for Exploitation

Researchers heavily emphasize childhood risk factors and pathways to sexual exploitation. Several risk factors that have been the focus of sex trafficking research include poverty, involvement in the child welfare system, homelessness, mental health concerns, substance abuse, childhood sexual abuse, and other traumas. However, it is unclear to what degree these often co-occurring events are genuinely antecedents to sex work (Fedina et al., 2019). Homelessness, for example, may drive some adolescents to participate in "survival sex," but having acquaintances who engage in sex trading may lead some youth to be recruited and coerced into trading sex (Fedina et al., 2019). Child sex trafficking is also linked to childhood sexual abuse, emotional abuse, and being raped (Fedina et al., 2019). Strong links between child sex trafficking and having friends who

purchased sex and family members who engage in sex work were also found (Fedina et al., 2019).

Researchers have also examined impediments to the well-being of adolescents by first looking at their family structure to examine risk factors. Children and adolescents are more vulnerable to human trafficking in cases of unsafe environments, family dysfunction, substance abuse, parent absence or desertion, participation with the child welfare system, or the death of a parent (APA, 2014; Miller-Perrin & Wurtele, 2018; Reid, 2011; Walker & Quraishi, 2014). Also, childhood physical and sexual abuse and neglect are common in human trafficking (APA, 2014; Farley et al., 2004; Miller-Perrin & Wurtele, 2018; Walker & Quraishi, 2014). Prior research has found that 55% to 90% of individuals engaging in sex trading have a history of childhood sexual abuse, with many reporting that their childhood sexual abuse had influenced their entry into sex trafficking (Farley et al., 2004).

A qualitative distinction between the sex trafficking of minors and the sex trafficking of adults is arbitrary; it obscures the substantial and long history of trauma that is frequent in the sex trade industry as the torture and replication of trauma they have experienced continues (Farley et al., 2004). Women who started trading sex as adolescents may have aspects of themselves that are dissociatively divided into the place and time of a much younger self (Farley et al., 2004). Consequently, adolescents who are sexually abused are 28 times more likely to trade sex than their same-aged peers who were not sexually abused (Walker & Quraishi, 2014).

The Polaris Project (2021) highlighted the top five risk factors for sex trafficking: recent migration or relocation (54%), mental or physical health concerns (10%),

substance abuse (9%), unstable housing (8%), and runaway or homeless youth (7%). When children face adverse life events, their last resort for a more stable life is to run away from home. Once on the streets, they are exposed to risks associated with street life (Shaw et al., 2017), such as substance misuse, violence, unstable living conditions, and poverty. With no other way to provide for themselves, they turn to sex trafficking to earn money.

Pathways Toward Exploitation

Foster Care. Many children who experience adverse life events such as poverty, family dysfunction, violence, and neglect are involved in the foster care system and are more likely to be sexually exploited. Many women and children who have been sexually abused express feelings of isolation and a lack of resources and personal relationships, which are often blamed on the child welfare system, foster care placements, and abandonment (Farley, 2004; Ugarte et al., 2004). Much of the literature on sex trafficking has focused on the child welfare system, as 80% of child sex trafficking victims have been involved in the child welfare system (Walker & Quraishi, 2014). The association between involvement in the child welfare system and engagement in sex trafficking appears to be because they share many of the same vulnerabilities traffickers look for when recruiting individuals (i.e., physical, emotional, and sexual abuse, neglect, housing insecurity; Gerassi, 2015; Walker & Quraishi, 2014). Other factors that put these individuals at an increased risk of being sexually exploited include restricted development and socialization and being a part of the criminal justice system (Gerassi, 2015; Walker & Quraishi, 2014). Youth transitioning out of foster care face many challenges because they are less likely to complete high school, enroll in college, and find

jobs that provide livable wages (Gerassi, 2015; Walker & Quraishi, 2014). Many youths who are not protected by a guardian resort to trading sex to meet their basic needs since they have no other option (Gerassi, 2015; Walker & Quraishi, 2014). Individuals with a history of sexual abuse who age out of foster care are even more likely to engage in transactional sex and are at a higher risk of sex trafficking (Ahrens et al., 2012; Gerassi, 2015). The establishment of proper boundaries in many children may be hindered due to sexual abuse, and they may no longer feel that their bodies are their own (Walker & Quraishi, 2014). They may relate expressions of affection to recurrent sexual assault and not be concerned when their exploiters demand that they have sex with others, continuing the cycle of abuse and exploitation (Stoltz et al., 2007). To escape further abuse, these youth run away and get entangled in sex trafficking as their only option for survival.

Elopement and Homelessness. A recurrent theme in the sex trafficking literature is that individuals who have experienced domestic violence, family instability, sexual, emotional, and physical abuse, poverty, and many other traumatic events will run away, or "elope," to escape further maltreatment. The National Center for Missing and Exploited Children (2022) reported that one in six runaway children is sexually exploited. With no other way to fend for themselves, they engage in "survival sex" to obtain money, food, drugs, and shelter (Ennett et al., 1999; Tyler et al., 2004). To investigate the risk factors of child sex trafficking, Fedina et al. (2019) studied 273 individuals between the ages of 16 and 66. In their sample, 115 participants were currently or formerly sex trafficked (Fedina et al., 2019). In comparison, 158 participants entered the sex trading industry as adults who were not influenced or forced into sex trade (Fedina et al., 2019). Their results showed that running away as a child was significantly connected with child

sex trafficking, with 62.6% running away as a child compared to 27.2% of the non-trafficked adult sample (Fedina et al., 2019). Also, housing stability is a major concern for sexually exploited women as many have experienced homelessness at some point in their lives (Farley et al., 2004). Relatedly, in a study of 81 pregnant women receiving drug-related treatment, women who experienced recent homelessness were found to have a 4.74 increased risk of trading sex than women who were not homeless (Brown et al., 2012). This shows that homelessness negatively impacts their mental health and is a major risk factor for sex work (Brown et al., 2012). Therefore, running away and experiencing homelessness strongly influence sex work as housing stability is one of the most frequently expressed needs of sexually exploited women.

Recruitment. Although much of the media depicts human trafficking as kidnapping involving multiple schemes to lure children and women away from safety, the vast majority of recruitment occurs by people the victims know and trust. According to Polaris Project (2020), family members and intimate partners had a prominent role in all types of human trafficking in 2020. Among the 4,142 documented recruiting relationships, the number of individuals recruited by a family member or caregiver increased by 47%, from 21% of all victims in 2019 to 31% in 2020 (Polaris Project, 2020). Intimate partner recruitment grew by 21% from 22% in 2019 to 27% in 2020 (Polaris Project, 2020). Additionally, 42% of the 2,448 victims whose recruitment was known in sex trafficking or sex and labor trafficking settings were lured into trafficking by a family member, and 39% were recruited through a romantic relationship or marriage proposal (Polaris Project, 2020).

Relatedly, prior research has found that one in five women reported that their traffickers knew their family, and some perceived their later engagement in sex trafficking as a betrayal by their family (Zimmerman et al., 2008). Reid et al. (2015) investigated the motivations for family commercial sexual exploitation and discovered that financial gain was the most common cause of the exploitation. Mothers were the most prevalent recruiters, accounting for 63% of all family recruitment, while 37% of family recruiting was perpetrated by cousins, uncles, and fathers (Reid et al., 2015). O'Brien et al. (2017) noted that interpersonal relationships might lead to sexual victimization, offer protection from exploiters, or provide a source of survivor resiliency that helps them overcome the challenges of sexual exploitation, so looking at all the aspects of the relationships is important.

Interpersonal Violence. Sex trafficking and interpersonal violence are often linked as they involve similar forms of abuse, force, and coercion tactics. At the core of these behaviors is the creation of a power imbalance that allows an abuser to dominate a victim and cause the victim to feel powerless and worthless (Farley et al., 2004; Reid et al., 2020). Because of the parallels in control methods employed by traffickers and batterers, as well as the health, psychological, and social implications of both forms of violence and exploitation, sex trafficking and intimate partner violence have been labeled "sister oppressions" (Farley et al., 2004; Hossain et al., 2010; Stark & Hodgson, 2004). Human trafficking has been related to children witnessing violence between their caregivers and being part of families with high levels of adversity (Reid et al., 2017). Seeing interpersonal violence as a child fosters dysfunctional interpersonal relationships and reinforces the cycle of exploitation and perpetuation (Whitfield et al., 2003).

Witnessing or hearing violent conduct, psychological abuse, and coercive control are all forms of exposure to interpersonal violence (MacMillan & Wathen, 2014). Exposure in any manner leads to a child's understanding that interpersonal violence is occurring among caregivers, even without being overtly seen or heard (MacMillan & Wathen, 2014). The relationship between childhood exposure to interpersonal violence and later interpersonal victimization is frequently explained by a variety of theoretical approaches (Reid et al., 2020). The "cycle of violence" perspective states that one's early experiences with caregivers creates the blueprint for all future relationships (Reid et al., 2020). Therefore, youth who witness or endure violence in their families are more likely to accept violence as a natural consequence of personal interactions, increasing their risk of domestic abuse in their relationships (Alexander et al., 1991).

To examine the connection between interpersonal violence and sex trafficking, Zimmerman et al. (2008) conducted a study with 207 women aged 15 to 45 from 14 countries (four European Union member states, six other European nations, and four non-European states). Almost 89% of their sample had been engaging in sex trafficking for more than 1 month, 10% for more than 2 years, and 11% for less than 1 month (Zimmerman et al., 2008). Sixty percent of their sample claimed having been subjected to some form of violence before being sex trafficked, with 32% reporting sexual abuse, 50% reporting physical abuse, and 22% reporting both (Zimmerman et al., 2008). In examining the overall trauma they experienced, 95% of the women reported physical or sexual abuse, with 76% having experienced sexual assault (Zimmerman et al., 2008). Comparatively, of 586 women engaging in sex work in Miami, Florida, 76.3% reported childhood physical abuse, and 51.9% reported childhood sexual abuse (Kurtz et al.,

2005). Additionally, of 361 sex-trading youth in Canada, 73% reported experiencing physical abuse and 32.4% reported experiencing sexual abuse (Stoltz et al., 2007). Therefore, physical and sexual abuse are common violent experiences for sex-trafficked individuals. Zimmerman et al. (2008) further found that being kicked when pregnant, burnt with cigarettes, dragged by their hair, punched in the face, and abused with bats or other items were all examples of the physical abuse they endured. Thirty percent of women reported being harmed or threatened with a knife, pistol, or another weapon (Zimmerman et al., 2008). These reports are comparable to Farley et al. (2004) findings as 12% of their 854 women participants reported injuries that were a direct result of violence, such as broken ribs, bruises, and abrasions that resulted from beatings and sexual assaults. In addition, 89% of women reported being threatened with beatings, and 82% disclosed that the threats were carried out (Zimmerman et al., 2008).

Similarly, according to Farley et al.'s (2004) research of 854 women, 64% reported that they had been threatened with a weapon, 71% had been physically assaulted, and 63% had been raped as an adult. When the four types of violence commonly experienced by individuals involved in sex trafficking were classified (childhood sexual abuse, childhood physical abuse, rape in sex trading as an adult, and physical assault in sex trading as an adult), 51% of the participants reported three or four forms of violence in their lifetime, 36% reported one or two acts of violence, and 13% did not report experiencing these forms of violence (Farley et al., 2004). Moreover, Zimmerman et al. (2008) further found that 57% of women in their sample have sustained injuries that still produce problems or pain. When individuals accept violence

and exploitation as natural, they accept the force, coercion, and control of their traffickers and are more likely to engage in sex trafficking.

Substance Abuse. Substance abuse has been linked to sex trafficking since it can increase a trafficked person's vulnerability, be used as coercion, or used to cope with the physical and emotional horrors of being trafficked (Lederer & Wetzel, 2014; Shaw et al., 2017; Stoklosa et al., 2017). According to a study of 102 sex-trafficked women in the United States, 84.3% engaged in substance abuse, with 59.8% of the sample reporting using alcohol (Lederer & Wetzel, 2014). Specifically, Lederer and Wetzel (2014) found that 50% of respondents used alcohol, marijuana, or cocaine, and 22.3% used heroin. Relatedly, in Canada, 32.4% to 93% of sex trading youth reported using drugs (Stoltz et al., 2007). Comparatively, Kurtz et al. (2005) found that out of their 586 women participants, 76.1 reported alcohol use, 73.4% reported using crack cocaine, 59% reported marijuana use, 42% reported using other kinds of cocaine, 19.5% reported heroin use, and 13.5% reported using other injectable drugs. Additionally, across nine countries (N = 854), 48% reported using drugs while 52% reported using alcohol, signifying that all of the participants in the study had a history of drug use (Farley et al., 2004). These findings suggest that survivors of sex trafficking are driven to engage in drug and substance abuse, either by force or by their distressing situations, to deal with the repetitive and intense violence they suffer (Lederer & Wetzel, 2014). More than a quarter of participants (27.9%) stated that forced substance misuse was a component of their trafficking victimization (Lederer & Wetzel, 2014). Opioids are an effective coercion tool for traffickers because they numb both emotional and physical pain; they have been noted as

links between the current U.S. opioid epidemic and trafficking (Stoklosa, 2016). Therefore, substance abuse is a route for victims of sex trafficking.

Impacts of Sex Trafficking

Sex trafficking is a public health issue that includes physical and behavioral complications. Victims and survivors are frequently subjected to sexual, physical, and physiological abuse, which can place their health at risk. As a result of their multiple traumatic experiences, many sexually exploited individuals suffer physical diseases, medical complications, and mental health disorders. Some of these health conditions may lead to death.

Health Consequences. The physical consequences of sex trafficking are severe and may have deadly consequences. One of the most reported medical implications survivors of sex trafficking endorse is sexually transmitted infections and diseases (STI/STD). Lederer and Wetzel (2014) examined the health consequences of sex trafficking victims and survivors in the United States. Of their 107 female participants, 67.3% reported contracting an STD or STI. This finding is comparable to a study by Johnson et al. (1996), which found that STIs were more common among those who engaged in commercial sex than those who did not (58% vs. 22%, $p < 0.001$). Additionally, Lederer and Wetzel (2014) found that 39% contracted chlamydia, 26.9% contracted gonorrhea, and 15.4% contracted Hepatitis C. Similarly, Kurtz et al. (2005) reported that of a sample of 586 women engaged in sex work, 22.4% tested positive for HIV, 38.5% tested positive for Hepatitis A, 53.3% tested positive for Hepatitis B, and 29.6% tested positive for Hepatitis C. Other common gynecological symptoms reported

in Lederer and Wetzel's 2014 study were painful sex (46.2%), urinary tract infections (43.8%), and vaginal discharge (33.3%).

Unfortunately, another reported medical consequence of sex trafficking is pregnancy-related complications. In Lederer and Wetzel's study, 71.2% of the 66 participants who answered the responses reported at least one unwanted pregnancy during their exploitation, and 21.2% reported five or more pregnancies. Pregnancy has long been used to control and pressure a woman into remaining with her sex trafficker and continuing to engage in sex work (Stanley et al., 2016). Similarly, out of 64 respondents, 54.7% reported at least one miscarriage, and 29.7% had more than one miscarriage (Lederer & Wetzel, 2014). In terms of abortions, 55.2% of the 67 participants who answered the questions reported having at least one abortion, and 29.9% said they had several abortions, with half of those who had an abortion saying they were forced to have at least one of them (Lederer & Wetzel, 2014). In addition to experiencing abortions and miscarriages with little, if any, clinical attention, trafficking survivors may lack access to prenatal health care and may get pregnancy-complicating sexually transmitted illnesses such as HIV (Stanley et al., 2016; Willis et al., 2002).

Physical illnesses and poor physical health are also regularly reported physical health problems of this population as their capacity to seek medical assistance is restricted (Muftić & Finn, 2013). Zimmerman et al. (2008) indicated that 69% of these women reported back pain, 81% reported headaches, 71% reported dizzy spells, and 50% reported chest or heart pain. Among 462 sex-trafficked women interviewed in Nigeria, repetitive stress injuries (75.4%) and inadequate rest (66.4%) were reported (Abdulraheem & Oladipo, 2010). Additionally, of 120 sex-trafficked women in Moldova,

61.7% reported experiencing headaches, 60.9% reported stomach pain, 44.2% reported memory problems, 42.5% reported back pain, 35% reported a loss of appetite, and 35% reported experiencing tooth pain (Oram et al., 2012). Therefore, victims of sex trafficking experience a wide range of physical health consequences.

Psychological Impacts. Even though there is limited research involving the mental health concerns of sexually exploited people, research shows that they are more likely to suffer from anxiety, depression, and post-traumatic stress disorder (PTSD; Farley et al., 2004; Lederer & Wetzel, 2014; Zimmerman et al., 2008). Traumatic stressors involved in sex trafficking often include an actual or threatened death or serious injury (Farley et al., 2004). PTSD is likely to be especially severe or long-lasting when humans plan and implement the stressor, and in response, an individual may experience emotional numbing and emotional/psychologic hyperarousal (Farley et al., 2004).

In Farley et al.'s (2004) study, 854 survivors of sex trafficking from nine countries (Canada, Colombia, Germany, Mexico, South Africa, Thailand, Turkey, the United States, and Zambia) were interviewed to examine the psychological impacts of sex trafficking. Their participants ranged in age from 12 to 68 years old, and they completed the PTSD Checklist (PCL) to measure their PTSD symptoms (Farley et al., 2004). Almost 97% of participants endorsed 8 of the 17 items on the PCL, and 68% of them met the PTSD criteria (Farley et al., 2004). The severity of their PTSD symptoms was strongly positively correlated with the sexual and physical violence that they experienced ($r = .33$, $p = .001$; Farley et al., 2004). Without specific queries about mental health, 17% described severe emotional problems: depression, suicidality, flashbacks of

child abuse, anxiety and extreme tension, terror regarding relationships with their traffickers, extremely low self-esteem, and mood swings (Farley et al., 2004).

Similarly, Zimmerman et al. (2008) studied 207 women between the ages of 15 and 45 from 14 countries (four European Union member states, six additional European nations, and four non-European states). They examined the symptoms endorsed by their participants that would put them at risk for developing PTSD (Zimmerman et al., 2008). Fifty-six percent of women endorsed sufficient symptoms suggestive of PTSD, with recurrent thoughts or memories of terrifying events reported as the most frequent symptom (75%; Zimmerman et al., 2008). The second most frequently reported symptom of PTSD was psychological arousal, such as feeling jumpy or easily startled and having trouble sleeping, with both being separately endorsed by 67% of women (Zimmerman et al., 2008). Women also reported difficulty concentrating (52%) and feeling irritable or experiencing outbursts of anger (Zimmerman et al., 2008). Other symptoms reported were being unable to feel emotion (44%) and an inability to remember parts of the traumatic events (63%; Zimmerman et al., 2008).

As violence experienced by sexually exploited women is widespread, this may have contributed to their vulnerability to trafficking and increased their likelihood of developing mental illnesses in the future (Hossain et al., 2010). Hossain et al. (2010) conducted research with 204 women between the ages of 15 and 45 from Belgium, Bulgaria, the Czech Republic, Italy, Moldova, Ukraine, and the United Kingdom to investigate the mental health of trafficked women. The participants completed the Brief Symptom Inventory (Derogatis, 1993) and the Harvard Trauma Questionnaire (Hossain et al., 2010; Mollica et al., 1996). Among these participants, 57% were comorbid for

anxiety, depression, and PTSD symptoms, with 55% meeting the criteria for high levels of depressive symptoms, 48% meeting the criteria for high levels of anxiety symptoms, and 77% potentially having PTSD (Hossain et al., 2010). Zimmerman et al. (2008) found that the two most endorsed symptoms of depression were "depression/feeling very sad" (95%) and "feelings of worthlessness" (78%). Women frequently associated their depression with their loneliness (88%), and 38% of them reported suicidal ideation. Within the anxiety domain, 84% to 91% of women reported feeling nervous, fearful, or tense. Furthermore, 61% of the women reported feelings of terror or panic, and 67% of women reported feeling restless (Zimmerman et al., 2008).

Hossain et al. (2010) found that individuals within their sample with greater mental health problems were more likely to report trafficking-related experiences. Physical violence was linked to anxiety symptoms, whereas sexual violence during trafficking was linked to PTSD. The researchers discovered that participants who engaged in sex trafficking for at least six months had twice the odds of having greater amounts of depression and anxiety symptoms than those who were involved in sex trafficking for a lesser period. Participants who had left the trafficking scenario at least three months before they participated in the study showed a lower risk of depression and anxiety than those who had left more recently. The risk of anxiety was shown to rise when they reported that their freedom was restricted while they were trafficked, and the risk of PTSD was found to increase when sexual assault was involved in their trafficking experience (Hossain et al., 2010).

Thus, the psychological consequences of sex trafficking are severe, wide-ranging, and universal. Many sex trafficking survivors experience nightmares, flashbacks, low

self-esteem, and endorse feelings of shame or guilt (Farley et al., 2004; Lederer & Wetzel, 2014; Zimmerman et al., 2008). Comorbid and psychophysiological symptoms experienced by victims relating to anxiety or depression include headaches, body pains, back pain, stomach discomfort, dizziness, nausea, and vision problems (Hossain et al., 2010; Lederer & Wetzel, 2014; Zimmerman et al., 2008). Hence, the psychological impact of sex trafficking is widespread, with many factors involved.

Overview of the MMPI, MMPI-2, MMPI-2-RF, and MMPI-3

Minnesota Multiphasic Personality Inventory (MMPI). The MMPI (Hathaway & McKinley, 1943) and its revised editions, the MMPI-2 (Butcher et al., 2001), MMPI-2-RF (Ben-Porath & Tellegen, 2008), and MMPI-3 (Ben-Porath & Tellegen, 2020) are the most widely used personality instruments in psychological assessment (Duckworth & Anderson, 1995). The MMPI was published in 1943 to aid in diagnostic screening and consisted of 566 items, all of which were True or False responses. The first edition of the MMPI utilized three validity scales and 10 standard clinical scales. The validity measures were developed to help distinguish between test records produced by guarded or biased test-takers who engaged in a range of response style aberrations such as portraying themselves as being either more or less adjusted than was true, and who had difficulty comprehending or reading the test items (Friedman et al., 2015; Graham, 1990). The three validity scales of the MMPI were the Lie (L) scale, a 15-item measure used to identify exaggeration of personal morality and self-portrayal in a positive light; the Infrequency (F) scale, a 64-item scale used to identify exaggeration of problems; and the Correction (K) scale, a 30-item scale used to identify defensiveness and the minimization of reported problems (Butcher, 2010; Graham, 1990). Additionally, the Cannot Say (?)

raw score showed the total number of answers left unanswered, including those marked as both true and false (Colligan, 1985). Two other validity scales were often used with the original MMPI to measure underreporting of problems. The Positive Malingering (Mp) scale (Cofer et al., 1949) encompassed 33 items and was similar to the L scale in assessing the denial of personal flaws and concerns (Greene, 2011). The Wiggins Social Desirability (Sd) scale (Wiggins, 1959) comprised of 40 items assessed overreporting of favorable attributes (Friedman et al., 2015).

The clinical scales were created primarily to determine the nature and severity of mental illnesses. The clinical scales provide a methodical way to gauge therapy outcomes and other alterations in the state of patients' conditions throughout their treatment by comparing their scores to the scores of nonpatients (Ben-Porath & Tellegen, 2008; Friedman et al., 2015). The 10 core clinical scales were developed to assist the examiner in determining the existence, nature, and level of psychopathology indicated by the examinee through their responses and were named after the clinical group they represented: Scale 1 Hypochondriasis (Hs), a measure of one's preoccupation with physical ailment and concern for their body; Scale 2 Depression (D), a measure of hopelessness, passivity, guilt, melancholy, and depression; Scale 3 Hysteria (Hy), a measure of repression and denial of emotional, psychological, and somatic difficulties; Scale 4 Psychopathic Deviate (Pd), which assessed an individual's aggressiveness and nonconformity; Scale 5 Masculinity-Femininity (Mf), which gauged adherence to traditional male or female gender roles; Scale 6 Paranoia (Pa), a measure of interpersonal sensitivity or suspiciousness; Scale 7 Psychasthenia (Pt), a measure of anxiety and discomfort; Scale 8 Schizophrenia (Sc), which assessed the presence of odd cognitive

patterns and other hallmarks of schizophrenia; Scale 9 Hypomania (Ma), a measure of hypomanic or manic episodes frequently associated with mood elevations and psychomotor excitement; and Scale 0 Introversion (Si), which measured interpersonal comfort and a desire for social contacts (Colligan, 1985).

To further aid in the interpretation of the 10 core clinical scales, several subscales, content scales, and supplementary scales were created. The Harris-Lingoes subscales (Harris & Lingoes, 1955) consisted of 28 homogeneous subscales of the clinical scales that reflected a single trait or feature (Graham, 1990). The clinical scales that they were grouped into were 2 (Depression), 3 (Hysteria), 4 (Psychopathic Deviate), 6 (Paranoia), 8 (Schizophrenia), and 9 (Mania; Graham, 1990). To further provide interpretive information, Wiggins (1966) developed a set of 13 content scales (e.g., Manifest Hostility, Poor Health, Organic Symptoms, etc.; Friedman et al., 2015; Hathaway & McKinley, 1989). Furthermore, with increased utilization of the MMPI, Welsh's Anxiety (A) and Welsh's Repression (R) scales were developed as supplementary scales that measured primary factorial dimensions (Graham, 1990).

Minnesota Multiphasic Personality Inventory-2 (MMPI-2). The MMPI was revised to the MMPI-2 (Butcher et al., 1989) with a primary focus on updating the earlier outdated norms. MMPI-2 norms were based on a more diverse and ethnically balanced national representative sample (Greene, 2011). The revision to the MMPI-2 also served as an opportunity for modernizing test items and developing a standard set of content and supplementary scales and subscales (Graham, 1990).

To ensure continuity with the original MMPI, the revised MMPI-2 consists of 567 items with minimal changes to the composition of the original three validity scales and 10

standard clinical scales (Friedman et al., 2015). Additionally, new content scales were developed to evaluate modern clinical concerns, and as a result, new items replaced numerous seldom scored or outmoded items (Graham, 1990). Three validity scales added to the revised MMPI-2 included the Variable Response Inconsistency scale (VRIN), a measure to detect inconsistent responding; the True Response Inconsistency scale (TRIN), a measure to detect biased responding in the true or false direction; and the F-Back scale (FB), a measure similar to the F scale to detect random and biased responding in the latter half of the questionnaire (Graham, 1990; Hathaway & McKinley, 1989). Three additional validity scales, the Infrequent-Psychopathology scale (Fp), a measure to detect the overreporting of psychopathology; the Fake Bad Scale (FBS), a measure to detect the overreporting of psychological problems; and the Superlative (S) scale, a measure to detect the defensiveness and excessive positive self-portrayal, were added to the MMPI-2 after it was published (Ben-Porath & Tellegen, 2008; Graham, 1990).

The MMPI-2 maintained and made minimal revisions to the Positive Malingering (Mp) scale, Social Desirability (Sd) scale, 10 standard clinical scales, and the original set of 28 Harris-Lingoes subscales (Friedman et al., 2015; Hathaway & McKinley, 1989). The new additions to the MMPI-2 consisted of 15 content scales, a standard set of 15 supplementary scales, the Personality Psychopathology Five (PSY-5) scales, and nine restructured clinical (RC) scales (Ben-Porath & Tellegen, 2008; Friedman et al., 2015). The new content scales for the MMPI-2 were developed by Butcher et al. (1990) to assess the main content dimensions of the instrument (Duckworth & Anderson, 1995). The MMPI-2 content scales assessed symptomatic behavior, personality factors, externalizing behavior, negative self-view, and clinical problem areas (Duckworth & Anderson, 1995).

The supplementary scales consisted of several original research-derived scales on the MMPI, with the addition of new substance abuse related scales (Graham, 1990). A new set of five Personality Psychopathology (PSY-5) scales were later released to model the disordered personality domain: Aggressiveness (AGGR) scale, Psychoticism (PSYC) scale, Disconstraint (DISC) scale, Negative Emotionality/Neuroticism (NEGE) scale, and Introversion/Low Positive Emotionality (INTR) scale (Harkness et al., 1995). Finally, in 2003, the restructured clinical (RC) scales were developed to improve the measurement of the core constructs of the core clinical scales by correcting the co-variation and item overlap found on the original version of the instrument (Ben-Porath & Tellegen, 2008; Friedman et al., 2015). The nine RC scales consisted of Demoralization (RCd), Somatic Complaints (RC1), Low Positive Emotions (RC2), Cynicism (RC3), Antisocial Behavior (RC4), Ideas of Persecution (RC6), Dysfunctional Negative Emotions (RC7), Aberrant Experiences (RC8), and Hypomanic Activation (RC9) (Ben-Porath & Tellegen, 2008).

Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF). Further adjustments to the MMPI-2 were made following the establishment of the Restructured Scales (RC) scales in 2003 (Ben-Porath, 2012). The MMPI-2-RF (Ben-Porath & Tellegen, 2008) was created as a supplement to, but not a replacement for, the MMPI-2 (Ben-Porath, 2012). The MMPI-2-RF retains 338 items from the previous 567-item instrument, causing a reduction in test duration and test administration time (Friedman et al., 2015). The MMPI-2-RF includes nine validity scales, three higher-order scales, 23 specific problem scales, two interest scales, and the revised PSY-5 (PSY-5-r) scales, in addition to the RC scales (Ben-Porath, 2012).

A new validity scale was added to the MMPI-2-RF, the Infrequent Somatic Responses (Fs) scale, to detect overreporting of somatic difficulties (Ben-Porath & Tellegen, 2008). The other seven validity scales maintained from the MMPI-2 were revised into the VRIN-r, TRIN-r, F-r, Fp-r, FBS-r, L-r, and K-r scales (Ben-Porath, 2012). Three higher-order scales were developed to organize the nine RC scales into clinical dimensions (Ben-Porath, 2012). These higher-order scales consist of the Emotional/Internalizing Dysfunction (EID) scale, a measure of emotional and internalizing difficulties; the Thought Dysfunction (THD) scale, a measure of difficulties related to thought dysfunction; and the Behavior/Externalizing Dysfunction (BXD) scale, a measure of behavioral problems (Ben-Porath, 2012; Friedman et al., 2015).

A set of Specific Problems (SP) scales were created to highlight essential features related to, but not directly addressed by, the RC scales (Ben-Porath, 2012; Ben-Porath & Tellegen, 2008; Friedman et al., 2015). The SP scales are divided into four categories: Somatic/Cognitive, Internalizing, Externalizing, and Interpersonal (Ben-Porath, 2012; Ben-Porath & Tellegen, 2008). Two new Interest scales – Aesthetic-Literary Interests and Mechanical-Physical Interests – were generated from Clinical Scale 5, Masculinity/Femininity (Ben-Porath, 2012; Ben-Porath & Tellegen, 2008). Minor revisions were made to the PSY-5 scales, such as removing 22 items from the original PSY-5 scales and adding 30 new items, creating the PSY-5-r (Friedman et al., 2015). The revised PSY-5-r scales consist of the AGGR-r, PSYC-r, DISC-r, NEGE-r, and INTR-r (Ben-Porath, 2012; Ben-Porath & Tellegen, 2008). Furthermore, as prior research found nonsignificant differences between men and women, non-gendered norms were adapted

to the MMPI-2-RF (Ben-Porath, 2012; Ben-Porath & Tellegen, 2008). The MMPI-2-RF continues to be in use currently.

Minnesota Multiphasic Personality Inventory-3 (MMPI-3). The MMPI-2-RF (Ben-Porath & Tellegen, 2008) served as a prototype for developing the next edition of the test, the MMPI-3 (Ben-Porath & Tellegen, 2020). The main objectives for MMPI-3 development were to update the test norms and increase the item pool (Ben-Porath & Tellegen, 2020a). An expanded version of the MMPI-2-RF (MMPI-2-RF-EX) was used to collect data for constructing the MMPI-3 (Ben-Porath & Tellegen, 2020a). The test contains the original 338 MMPI-2-RF items and 95 trial items that were potential additions to the updated inventory (Ben-Porath & Tellegen, 2020a). Thirty-nine of the 338 MMPI-2-RF items were revised to fix problematic phrasing and simplify content (Ben-Porath & Tellegen, 2020a). Given that the MMPI-2-RF-EX was used to validate the MMPI-3, the discovery that the psychometric qualities of the MMPI-3 scale scores are psychometrically identical to those obtained from the MMPI-2-RF-EX is crucial (Ben-Porath & Tellegen, 2020a). In addition, the MMPI-3's Technical Manual confirms the validity and reliability of the test in terms of its psychometric properties (Ben-Porath & Tellegen, 2020b).

The MMPI-2-RF's comparability across racial and ethnic groups, education levels, and age has been shown through research assessing the validity of the test outcomes in various demographic groups (Ben-Porath & Tellegen, 2020a). Additionally, the MMPI-2-RF-EX was used to create new English and Spanish-speaking normative samples (Ben-Porath & Tellegen, 2020a). A diverse sample that was brought together to reflect demographic forecasts for the 2020 U.S. Census Bureau's updated norms for the

MMPI-3 furthered the test's usefulness for the different populations of the United States and other English-speaking countries (Ben-Porath & Tellegen, 2020a). Additionally, a Spanish translation of the MMPI-3, for which independent norms have been developed, further demonstrates the effectiveness of the MMPI instruments in various cultures and countries (Ben-Porath & Tellegen, 2020a). Because previous studies have shown minimal differences between gendered and nongendered norms on the MMPI-2, the MMPI-3 uses non-gendered norms similar to the MMPI-2-RF (Ben-Porath & Forbey, 2003).

The MMPI-3 maintains most of the substantive scales of the MMPI-2-RF and continues using the MMPI-2-RF's three-tiered hierarchical structure (Ben-Porath & Tellegen, 2020a). The substantive scales address five domains of personality and psychological difficulty: Somatic and Cognitive Dysfunction, Emotional Dysfunction, Thought Dysfunction, Behavioral Dysfunction, and Interpersonal Functioning (Ben-Porath & Tellegen, 2020a). The Combined Response Inconsistency scale (CRIN), as well as updated versions of the VRIN, TRIN, F, Fp, Fs, FBS, RBS, L, and K scales—all of which have the same item composition as the MMPI-2-RF—are the 10 Validity scales used to evaluate the test's validity (Ben-Porath & Tellegen, 2020b). The three Higher-Order (H-O) scales examine three types of dysfunction: Emotional/Internalizing Dysfunction (EID), Thought Dysfunction (THD), and Behavioral/Externalizing Dysfunction (BXD). The eight Restructured Clinical (RC) scales, 26 Specific Problems (SP) scales, and supplemental PSY-5 scales are included under these Higher-Order scales. The eight RC scales are updated versions of their corresponding MMPI-2-RF scales. The four subsets of the Specific Problems scales—Somatic/Cognitive, Internalizing, Externalizing, and Interpersonal scales—are narrow-band measurements of

areas relating to or complementing the RC scales (Ben-Porath & Tellegen, 2020a). The PSY-5 scales, which reflect an extensively studied model of personality disorders, are used in addition to these measurements (Ben-Porath & Tellegen, 2020a). Descriptions of the MMPI-3 scales are provided in Table 1.

(continues)

Table 1

MMPI-3 scales

Scale	Description
Validity Scales	
Cannot Say (CNS)	Omitted or double marked responses
Combined Response Inconsistency (CRIN)	Variable and fixed response inconsistencies
Variable Response Inconsistency (VRIN)	Inconsistent or random responding
True Response Inconsistency (TRIN)	Fixed true or False responding
Infrequent Responses (F)	Infrequent responses by the general sample
Infrequent Psychopathology Responses (Fp)	Symptom exaggeration
Infrequent Somatic Responses (Fs)	Infrequent endorsement of somatic complaints by the medical population
Symptom Validity Scale (FBS)	Endorsement of noncredible symptoms
Response Bias Scale (RBS)	Overreporting memory complaints
Uncommon Virtues (L)	Inconsistent responding to moral virtues and attributes
Adjustment Validity (K)	Defensiveness marked by reporting a high level of psychological adjustment
Higher-Order (H-O) Scales	
Emotional/Internalizing Dysfunction (EID)	Emotional and internalizing difficulties
Thought Dysfunction (THD)	Difficulties related to thought dysfunction
Behavioral/Externalizing Dysfunction (BXD)	Behavioral problems
Restructured Clinical (RC) Scales	
Demoralization (RCd)	General unhappiness and life dissatisfaction
Somatic Complaints (RC1)	Physical health complaints
Low Positive Emotions (RC2)	Lack of positive emotional experiences
Antisocial Behavior (RC4)	Antisocial behaviors and familial conflict

(cont.)

Table 1 (cont.)

Scale	Description
Restructured Clinical (RC) Scales (cont.)	
Ideas of Persecution (RC6)	Persecutory beliefs involving suspicion and mistrust of others
Dysfunctional Negative Emotions (RC7)	Negative emotional experiences involving anger, anxiety, and fear
Aberrant Experiences (RC8)	Unusual perceptual experiences and disordered thinking
Hypomanic Activation (RC9)	High level of energy, racing thoughts, heightened mood, impulsivity, excitement-seeking, and aggression
Specific Problem (SP) Scales	
Somatic/Cognitive Scales	
Malaise (MLS)	Overall sense of physical debilitation and poor health
Neurological Complaints (NUC)	Neurological problems including dizziness, weakness, and loss of balance
Eating Concerns (EAT)	Problematic eating behaviors
Cognitive Complaints (COG)	Memory problems, confusion, trouble concentrating
Internalizing Scales	
Suicidal/Death Ideation (SUI)	Direct reports of suicidal ideation and recent attempts
Helplessness/Hopelessness (HLP)	Belief that goals cannot be reached, or problems solved
Self-Doubt (SFD)	Lack of confidence, feelings of uselessness
Inefficacy (NFC)	Belief that one is indecisive and inefficacious
Stress (STR)	Problems involving stress and nervousness
Worry (WRY)	Excessive worry and preoccupation

(cont.)

Table 1 (cont.)

Scale	Description
Specific Problem Scales (cont.)	
Compulsivity (CMP)	Engaging in compulsive behaviors
Anxiety-Related Experiences (ARX)	Multiple anxiety-related experiences such as catastrophizing, panic, dread, and intrusive ideation
Anger Proneness (ANP)	Becoming easily angered, impatient with others
Behavior-Restricting Fears (BRF)	Fears that inhibit normal activity
Externalizing Scales	
Family Problems (FML)	Conflictual family experiences
Juvenile Conduct Problems (JCP)	Difficulties at school and at home, stealing
Substance Abuse (SUB)	Current and past misuse of alcohol or drugs
Impulsivity (IMP)	Poor impulse control and nonplanful behavior
Activation (ACT)	Heightened excitation and energy level
Aggression (AGG)	Physically aggressive behavior
Cynicism (CYN)	Non-self-referential beliefs that others are bad and not to be trusted
Interpersonal Scales	
Self-Importance (SFI)	Beliefs related to having special talents and abilities
Dominance (DOM)	Being domineering in relationships with others
Disaffiliativeness (DSF)	Disliking people and being around them, preferring to be alone
Social Avoidance (SAV)	Not enjoying and avoiding social events
Shyness (SHY)	Feeling uncomfortable and anxious in the presence of others

(cont.)

Table 1 (cont.)

Scale	Descriptors
Personality-Psychopathology Five (PSY-5) Scales	
Aggressiveness (AGGR)	Instrumental, goal-directed aggression
Psychoticism (PSYC)	Disconnection from reality
Disconstraint (DISC)	Under-controlled behavior
Negative Emotionality/Neuroticism (NEGE)	Anxiety, fear, insecurity, and worry
Introversion/Low Positive Emotionality (INTR)	Social disengagement and anhedonia

Note. Adapted from Ben-Porath & Tellegen, 2020a

MMPI Research on Victims of Sexual Exploitation

Research on the MMPI with victims of sex trafficking is limited. Therefore, because sex trafficking may be conceptualized as sexual exploitation, examining the MMPI's utility with survivors of sexual assault may provide us with valuable information regarding the personality of individuals that have experienced sexual assault, abuse, molestation, and rape.

In one of the first and only studies examining the psychological characteristics of sex workers with the original MMPI, Exner et al. (1977) differentiated 95 sex workers into five categories based on their mode of sex work (e.g., street-based sex work and sex work conducted in businesses). Each group was matched with its own control group consisting of women with various occupations (e.g., lawyers, waitresses, homemakers, etc.; Exner et al., 1977). The MMPI configurations of sex workers that worked from their homes (Class 1) or in established businesses (Class 2) were within normal limits, suggesting they were not significantly different from their matched control group (Exner et al., 1977). The street-based sex workers (Class 3) were significantly different from

their control group on scales L, K, Hy, Pd, and Si, with the highest elevations on scales Hy and Pd (Exner et al., 1977). The greatest psychopathology was shown by the Class 4 women who engaged in sex trading for a few hours on an average of two days per week as they endorsed several symptoms of schizophrenia (Exner et al., 1977). They displayed notably high scores on scales F, Hs, D, Pd, Mf, Pt, Sc, Ma, and Si (Exner et al., 1977). The Class 5 women who were coping with addiction and relied on solicitors to bring clients to them also displayed psychopathology, with significantly elevated scores on scales F, Hs, Hy, Pd, Pt, and Ma, with the largest elevations on the 1, 3, and 4 composite (Exner et al., 1977).

In a cross-cultural replication of Exner et al.'s (1977) study, De Schampheleire's (1990) study used a sample of 41 sex workers from Brussels, Belgium who completed the Belgian MMPI in either French or Flemish. The participants demonstrated significant elevations on the F scale, similar to Exner et al.'s (1977) Class 4 and Class 5 groups. The participants also showed significant elevations (T score $\geq$ 60) on the Hs, Pd, Mf, Pa, Pt, Sc, and Ma scales. These elevations were also similar to the Class 4 and Class 5 groups in Exner et al.'s (1977) study, with the Class 4 women's MMPI elevations most closely resembling the sex workers in this study. De Schampheleire (1990) further examined the MMPI configurations on the Wiggins (1966) content measures and found that, except for SOC and FEM, all the scales showed significant elevations. Interestingly, the study found that sex workers scored low on the Femininity scale (T < 45; De Schampheleire, 1990).

These two studies with sex-trafficked women show marked elevations on the F scale and clinical scales such as D, Pt, Sc, and Si, among others. These studies help examine the negative consequences of sex trafficking on women's mental health and

illustrate that they may demonstrate more pathology than those who have not been trafficked.

Further MMPI research pertaining to sexual abuse victims is available and may be used to examine the possible impacts of sex trafficking. To examine the psychological distress experienced by victims of father-daughter sexual abuse in two separate age groups, Scott and Stone (1986a) compared the MMPI profiles of 31 adult women and 27 adolescent girls who were receiving outpatient treatment for their childhood sexual assault by a father or stepfather (Scott & Stone, 1986a). The researchers found elevated Pd and Sc scores ($T > 70$) in both groups, with greater elevations in the adult group (Scott & Stone, 1986a). The Sc scale was the only elevation found in the adolescent group, which also had a moderate Ma elevation ($T = 69$; Scott & Stone, 1986a). These findings were similar to previous research that found Pd and Sc elevations in the profiles of child sexual assault survivors (Scott & Stone, 1986b; Tsai et al., 1979). Moreover, to explore the various variables that influence psychosexual functioning, Tsai et al. (1979) analyzed data from three groups of 30 women. Two of their groups consisted of women who had experienced childhood sexual abuse, most of which had been committed by their fathers, and only one group received psychotherapy. The control group consisted of women who were not sexually assaulted. In the group receiving treatment, the F, Hs, D, Pd, Pa, Pt, Sc, and Si scales were significantly higher than the other two groups, although only the Pd and Sc scales had T scores above 70. All of the scales were within normal limits ($T < 70$) in the profiles of the group that was not receiving psychotherapy services, and there were no significant differences from those of the control group (Tsai et al., 1979).

Examining F scale elevations may be important in individuals with a history of sexual abuse. Individuals with high levels of trauma, depression, or other heightened personality features may have a higher F scale on their MMPI profile (De Schampheleire, 1990; Exner et al., 1977; Flitter et al., 2003). The variation in F might be explained by a variety of true clinical indications of distress and psychopathology that are regularly reported in child sexual assault victims (Flitter et al., 2003), such as poor family functioning, which may also contribute to the increased distress experienced in child sexual abuse victims (Farley et al., 2004).

MMPI research with individuals with a history of sexual abuse continued after the publication of the MMPI-2. Flitter et al. (2003) administered the MMPI-2 to 88 women receiving care for their child sexual abuse symptoms to examine if F elevations in clinical samples of adult victims of child sexual abuse represent genuine trauma-related distress and psychopathology or if symptoms were inflated or fabricated (Flitter et al., 2003). The participants completed self-report assessments of dissociation (Dissociative Experiences Scale; DES; Carlson & Armstrong, 1994), PTSD (Impact of Event Scale; IES; Horowitz et al., 1979), depression (Beck Depression Inventory; BDI; Beck et al., 1988), and family environment (Family Environment Scale; FES; Moos & Moos, 1994) to evaluate their associations with the F scale (Flitter et al., 2003). A multiple regression analysis of the linear combination of significant variables indicated that these predictors collectively explained 40% of the variation in the F scale ($R^2 = .40$), $F\ (4, 65) = 11.01$, $p < .001$; Flitter et al., 2003). Dissociation was shown to be the most powerful predictor of this variation ($\beta = .45$; Flitter et al., 2003). This finding compares to the studies from Exner et

al. (1977) and De Schampheleire (1990), as they all showcase the occurrence of F scale elevations in individuals who have endured trauma such as sexual exploitation.

Similarly, Elhai et al. (2001b) evaluated elevations on Scale 8 of the MMPI-2 in women survivors of child sexual abuse to see if the evaluations were caused by PTSD, depression, or dissociation. The Beck Depression Inventory (BDI), Dissociative Experiences Scale (DES), and Impact of Events Scale (IES) were administered to 73 women seeking outpatient therapy for their child sexual abuse symptoms (Elhai et al., 2001b). Regression analysis revealed that BDI and DES scores accounted for 59% of the variation in Scale 8 scores, with the BDI being the greatest predictor (Elhai et al., 2001b). Their findings imply that depression and dissociation contribute the most to Scale 8 scores and that their presence together was more effective at predicting Scale 8 scores than PTSD (Elhai et al., 2001b). Prior research has found that difficulties such as social alienation and diminished cognitive and emotional mastery, rather than schizophrenia, impact Scale 8 elevations (Briere & Elliot, 1997). These characteristics are frequently related to depressive symptoms. Some of Scale 8's content areas include difficulty concentrating, poor self-worth, and social exclusion (Greene, 2011). Furthermore, many of the MMPI-2 Depression content scale items overlap with Scale 8 (Greene, 2011). Because these challenges qualify as negative symptoms of schizophrenia and other psychotic illnesses, child sexual abuse survivors may be diagnosed as psychotic based on their MMPI-2 scores (Elhai et al., 2001b).

Because many studies that employ the MMPI include a comparison group, Follette et al. (1997) chose to investigate if psychological profiles that allow clinically relevant distinctions among women who endorsed a history of child sexual abuse might

be established. Follette et al. (1997) evaluated the MMPI-2 content scale scores associated with cluster membership and the extent to which other psychological symptoms changed between clusters using the BDI and the Symptom-Checklist-90-Revised (Derogatis, 1983). The three measures were administered to 85 women seeking treatment at a university psychological treatment center for child sexual abuse. Five subgroups emerged from the cluster-analytic technique utilized in their study, lending credence to the hypothesis that the group of women who report having been sexually exploited as children is not homogenous. Out of five of their clusters, more than half of the participants were in the two most psychologically maladjusted clusters: Cluster 2, which had elevations on the Sc, Pt, D, Si, and Pd scales; and Cluster 4, which had elevations on the F, Sc, Pt, D, Pd, Hs, Hy, Pa, and Si scales. The T scores for these elevations were greater than 65 (Follette et al., 1997). Elhai et al. (2001a) revealed similar results as they obtained comparable profile configurations, albeit their elevations differed from Follette et al.'s (1997) study. Three clusters were found to show the most maladjustment in child sexual abuse survivors: Cluster 1 had elevations on the F, Hs, D, Hy, Pd, Pa, Pt, Sc, Mt, and Si scales; Cluster 2 had elevations on the F, D, Pd, Pa, Pt, Sc, and Si scales; and Cluster 4 had elevations on the F, Hs, D, Hy, Pd, Pa, Pt, and Sc scales (Elhai et al., 2001a). Therefore, these findings suggest that groups should not be treated as homogenous, and examining subgroups in populations may give us important information.

Studies with sexual abuse victims have also incorporated other trauma groups to examine differences in their profiles. Kirz et al. (2001) compared the MMPI-2 profiles of male combat veterans and female sexual assault victims. Both groups were comprised of

adults who experienced trauma in adulthood, and childhood trauma was excluded (Kirz et al., 2001). When the groups were compared on their MMPI-2 scores, multiple statistically significant differences were found. For instance, the Hs, D, Hy, and Pd scales were elevated in the sexual trauma group, demonstrating that compared to combat veterans, sexual assault survivors may be more depressed and more likely to somaticize their symptoms (Kirz et al., 2001). Sexual assault survivors had less pathology than combat veterans and seemed more inclined to internalize negative emotions through depression, somatic complaints, and anxiety (Kirz et al., 2001). Similarly, Elhai et al. (2000) investigated variations in symptom patterns of two distinct trauma samples consisting of 64 adults with PTSD who sought outpatient treatment for their child sexual abuse. One hundred and twenty-two male combat veterans seeking outpatient therapy for combat-related PTSD were also included (Elhai et al., 2000). They discovered that males and females with a history of childhood sexual abuse scored higher on Pd, whereas male war veterans scored higher on the ANG content scale (Elhai et al., 2000). However, after adjusting for age, virtually all variances vanished; the only difference that remained was on the ANG scale (Elhai et al., 2000).

Gregg and Parks (1995) hypothesized that an abused group would have a considerably higher mean score on the D, Pd, Sc, and PS scales than a non-abused group. They also hypothesized that the scales could help predict group membership. During their intake at a private psychiatric clinic, 47 sexually abused women and 43 non-abused women completed the MMPI-2. The results revealed a significant difference between the abused and non-abused groups on several mean scores ($F = 4.986$, $df = 4.85$, $p = .001$. Specifically, between the abused and non-abused groups, significant differences were

found in the mean T-score values for the D scale ($F = 13.666$, $df = 1.88$, $p = .003$), Pd scale ($F = 8.895$, $df = 1.88$, $p = .004$), Sc scale ($F = 8.99$, $df = 1.88$, $p = .004$), and PS scale ($F = 13.666$, $df = 1.88$, $p < .001$. The PS scale was shown to be a significant predictor variable in differentiating between the two groups (beta =.40, $T = 4.099$, $p = .001$), indicating an elevated risk of PTSD among sexually abused women (Gregg & Parks, 1995). The D scale was the sole significant predictor variable from the D, Pd, and Sc scales (beta =.312, $T = 3.077$, $p = .003$; Gregg & Parks, 1995). The Pd and Sc scales also showed significant elevations in the sexually abused group, which is consistent with earlier MMPI studies (Gregg & Parks, 1995; Scott & Stone, 1986; Tsai et al., 1979). According to Griffith et al. (1997), women with histories of childhood sexual abuse had considerably higher T scores on the Hs, D, Pd, Pa, Pt, and Ma scales, with the Sc and Pd scales reflecting the largest elevations.

In examining MMPI-2-RF studies with sexual trauma, McManus et al. (2018) analyzed the MMPI-2-RF profiles of 33 U.S. veterans seeking treatment at a Department of Veterans Affairs specialty clinic to assess the psychological and personality features linked with Military sexual trauma. The results show that the F-r, Fp-r, Fs, Symptom Validity, and RBS validity scales were elevated, indicating an over-endorsement of their symptoms (McManus et al., 2018). Most individuals produced clinical elevations ($T \geq 65$) on somatic symptoms such as RC1 and four Somatic/Complaints scales: Malaise, Gastrointestinal Complaints, Neurological Complaints, and Cognitive Complaints, which reflect the prevalence of widespread somatic concerns. The EID, RCd, RC2, AXY, SUI, DSF, and SAV scale scores were also elevated, indicating worries about their mood, anxiety, and interpersonal connections (McManus et al., 2018).

In another study by Gottfried et al. (2016), the MMPI-2-RF was administered to 212 female inmates to investigate the influence of PTSD symptoms and self-reported physical and sexual abuse on the MMPI-2-RF. To examine their social history, participants completed the MMPI-2-RF as well as the Physical and Sexual Abuse (PSA) and Posttraumatic Symptomology scales, which were both developed using items from Giannetti's (1994) Quickview Social History Clinical Version (Gottfried et al., 2016). The PSA scale was strongly related to the posttraumatic symptomatology scale ($r = .48$, $p < .001$). The PSA scale had clinically significant correlations ($r \geq .20$) with the EID, BXD, RC4, GIC, JCP, FML, DSF, and DISC-r scales, with only RC4 being a strong predictor of physical and sexual abuse. The posttraumatic symptomology scale had clinically significant correlations with EID, RCd, RC4, RC7, RC8, SFD, NFC, STW, AXY, and BRF. The posttraumatic symptomology scale was also substantially positively associated with RC1, GIC, HPC, NUC, COG, JCP, FML, DSF, and DISC-r, which was not predicted (Gottfried et al., 2016). Demoralization and internalizing dysfunction were linked to PTSD symptoms. PTSD symptoms and abuse were linked with MMPI-2-RF scores related to behavioral and externalizing difficulties, conduct problems, anxiety, anger, stress, fear, remorse, odd beliefs, somatic problems, ineffectiveness, family conflicts, and social exclusion (Gottfried et al., 2016).

Chapter 3: Rationale and Purposes

Sex trafficking is a global crisis that affects women, children, and men in more than 130 countries. Sex trafficking violates human rights by depriving individuals of their freedom and leaving them vulnerable to harm. Victims of sex trafficking generally experience multiple prior adverse life events that, on their own, may cause trauma and other psychological consequences. These include homelessness, substance abuse, family instability, childhood sexual assault, physical and emotional abuse, involvement in the child welfare system, and many more adverse experiences that increase their vulnerability to becoming sex-trafficked victims. Across North America, organizations are actively working to prevent human trafficking, such as the human trafficking taskforces in each state, which receive funding and rely on current data and research to help drive their advocacy movements.

Unfortunately, victims of sex trafficking are an understudied population, even though it is a matter of considerable importance. Thus far, the health and mental health literature focused on this population has largely been based on interviews or diagnoses provided through structured interviews, and hardly any psychological testing has been conducted on the sex trafficking population. The MMPI-3, like the earlier editions of the MMPI, is a broadband measure that can provide us with a comprehensive assessment of the emotional, behavioral, social, and psychological difficulties associated with sex trafficking experiences. With the recent publication of the MMPI-3, there is a new mechanism to understand the psychological impacts of sex trafficking with this empirically supported test measure. The current research study provides empirical data

that may strengthen the advocacy work of organizations that offer services to sex-trafficked women.

Prior research has found that traumatic experiences can result in considerable psychological disturbance but may also drive personal growth. Research indicates that while traumatic experiences have an adverse impact on most individuals, approximately 75% demonstrate resilience, whereas roughly 25% experience chronic psychological difficulties (Bonano, 2004; Southwick & Charney, 2012). When overcoming hardships, resilient individuals change their perception of themselves from "victims" to "survivors" after enduring adversity (Tsai et al., 2017). Therefore, it is important to examine not only the psychological difficulties survivors of sex trafficking endured but also the inner strength they experience.

The first purpose of this study was to examine the MMPI-3 mean score patterns of a sex-trafficked sample. This served as reference group data that would enable a better understanding of the psychological difficulties experienced by this victim group.

The second purpose of the study was to compare MMPI-3 substantive scale scores of subgroups of sex. trafficking victims based on their age status upon entry into sex trafficking, and presence or absence of sexual abuse history, physical abuse history, history of being involved in the child welfare system, history of a mental health diagnosis, drug use history, legal history, length of time in drug trafficking, and length of time since exiting drug trafficking. Based on research findings suggesting that individuals who started engaging in sex trafficking at an earlier age, experienced sexual abuse, experienced physical abuse, were involved in the child welfare system, experienced mental health concerns, engaged in substance abuse, had a legal history, engaged in sex

trafficking for a longer period of time, and recently exited sex trafficking demonstrate worse psychological outcomes, it was hypothesized that the individuals who have experienced these situations will generally have higher MMPI-3 mean scores than their subgroup counterparts.

The third purpose of the study was to examine the relationship between MMPI-3 scale scores and Dispositional Resilience Scale-15 scores. This was undertaken through correlations to determine the specific areas of psychological difficulty assessed by the MMPI-3 that are significantly inversely related to resilience, followed by a stepwise multiple regression analysis with MMPI-3 scale scores as predictors of resilience. In the absence of prior research on this topic, the correlational analysis was undertaken in an exploratory manner.

Chapter 4: Methods

Participants

Participants for this study consisted of 76 adult women in North America who had experienced sex trafficking. Participants were included if they were adult women 18 years and older with a history of sex trafficking who provided written informed consent, produced a valid MMPI-3 profile, and completed the DRS-15. Determining MMPI-3 protocol validity was based on the test's Administration and Scoring Manual (Ben-Porath & Tellegen, 2020a) guidelines. Specifically, women who produced a Cannot Say (?) raw score of ≤ 15 that demonstrated minimal response omissions, and CRIN, VRIN, and TRIN scores of ≤ 80, ensuring response consistency, were included. One participant was excluded from analyses due to an invalid MMPI-3 profile related to a TRIN score of 120, reflecting biased responding in the affirmative direction, bringing the final sample to N = 76. Participants in this sample were between the ages of 20 and 65 (M = 40.66, SD = 12.87) and predominantly identified as Caucasian (n = 52; 68.4%). Most participants identified entering sex trafficking as a minor (n = 47; 61.8%), with the age of entry being between birth and 45 years (M = 16.67, SD = 9.12). Nearly all participants reported having a trafficker (n = 75; 98.7%), with 31.6% identifying the trafficker as a family member, 52.6% as a romantic partner, 27.6% as a friend or acquaintance, and 26.3% as a stranger. Of the one that denied having a trafficker (N = 1), her entry point was through survival sex as a runaway minor. The length of time involved in sex trafficking was between 0.75 and 43 years (M = 11.94, SD = 10.76), and the length of time out of sex trafficking was between 0.08 and 44 years (M = 11.35, SD = 11.23). Nearly all participants reported experiencing sexual abuse (n = 65; 85.5%) and physical abuse (n =

57; 75%) as children, with some having a history of being in the child welfare system (*n* = 18; 23.7%). Most participants reported having a prior mental health diagnosis (*n* = 61; 80.3%) and receiving mental health services (*n* = 69; 90.8%). Most participants reported a history of drug use (*n* = 59; 77.6%). More than half of the participants reported a prior legal history (*n* = 55; 72.4%), with most reporting having a legal history as an adult (*n* = 32; 42.1%). Table 2 presents additional percentage data regarding the sample.

Table 2
Sex-trafficked sample demographics

	Sex-Trafficked sample (*N* = 76)	
Demographic variable	*n*	Percent
Ethnicity		
Caucasian	52	68.4%
Black	15	19.7%
Hispanic	5	6.6%
Native American	2	2.6%
Middle Eastern	1	1.3%
Biracial	1	1.3%

(cont.)

Table 2 (cont.)

	Sex-Trafficked sample (N = 76)	
Demographic variable	*n*	Percent
State of Residence		
Alaska	1	1.3%
Arizona	11	14.5%
California	7	9.2%
Colorado	2	2.6%
Florida	13	17.1%
Georgia	4	5.3%
Illinois	2	2.6%
Indiana	1	1.3%
Maryland	2	2.6%
Massachusetts	1	1.3%
Michigan	4	5.3%
Minnesota	1	1.3%
Missouri	2	2.6%
Montana	1	1.3%
Nebraska	1	1.3%
Nevada	1	1.3%
North Carolina	1	1.3%
Ohio	2	2.6%
Pennsylvania	5	6.6%
Rhode Island	1	1.3%
South Carolina	3	3.9%
Tennessee	4	5.3%
Texas	3	3.9%
Virginia	1	1.3%
West Virginia	1	1.3%
Outside United States		
Ontario, Canada	1	1.3%

(cont.)

Table 2 (cont.)

	Sex Trafficking sample ($N = 76$)	
Demographic variable	*n*	Percent
Age status at entry into sex trafficking		
Minor	47	61.8%
Adult	29	38.2%
Length of time involved in sex trafficking		
≤9 years	39	51.3%
≥10 years	37	48.7%
Length of time out of sex trafficking		
≤2 years	24	31.6%
≥ 3 years	52	68.4%
Had a trafficker		
Yes	75	98.7%
No	1	1.3%
Nature of trafficker*		
Family member	24	31.6%
Romantic partner	40	52.6%
Friend/acquittance	21	27.6%
Stranger	20	26.3%
Experienced sexual abuse		
Yes	65	85.5%
No	11	14.5%
Experienced physical abuse		
Yes	57	75.0%
No	19	25.0%
Involved in child welfare system		
Yes	18	23.7%
No	58	76.3%
Reason for involvement*		
Due to sexual abuse	5	6.6%
Due to physical abuse	3	3.9%
Due to delinquency	3	3.9%
Due to running away	4	5.3%
Due to a parent in prison	2	2.6%
Due to family addiction	4	5.3%

(cont.)

Table 2 (cont.)

	Sex Trafficking sample ($N = 76$)	
Demographic variable	*n*	Percent
Diagnosed with Mental Disorder		
Yes	61	80.3%
No	15	19.7%
Type of Diagnosis*		
Post-Traumatic Stress Disorder/	46	60.5%
Depression	30	39.5%
Anxiety	24	31.6%
Bipolar Disorder	21	27.6%
Borderline Personality Disorder	11	14.5%
Attention-deficit/hyperactivity Disorder	9	11.8%
Obsessive Compulsive Disorder	3	3.9%
Oppositional Defiant Disorder	1	1.3%
Schizophrenia Disorder	5	6.6%
Conversion Disorder	1	1.3%
Dissociative Disorder	3	3.9%
Autism Spectrum Disorder	1	1.3%
Sleep Disorder	2	2.6%
Body Dysmorphia	1	1.3%
Eating Disorder	3	3.9%
Received mental health services		
Yes	69	90.8%
No	7	9.2%
History of Drug use		
Yes	59	77.6%
No	17	22.4%

(cont.)

Table 2 (cont.)

	Sex Trafficking sample ($N = 76$)	
Demographic variable	*n*	Percent
Drug Type*		
Cocaine	43	56.6%
Cannabis	32	42.1%
Meth	20	26.3%
Lysergic Acid Diethylamide (LSD)	11	14.5%
Ecstasy	10	13.2%
Opioids	15	19.7%
Inhalant	2	2.6%
Alcohol	20	26.3%
Mushrooms	3	3.9%
Depressants	4	5.3%
Phencyclidine (PCP)	1	1.3%
Amphetamines	1	1.3%
Pills	8	10.5%
Legal History		
Yes	55	72.4%
No	21	27.6%
Age at Legal History		
Minor	6	7.9%
Adult	32	42.1%
Both	17	22.4%
Type of legal charge*		
Prostitution	30	39.5%
Drug	28	36.8%
DUI	8	10.5%
Domestic violence	7	9.2%
Breaking and Entering or Trespassing	7	9.2%
Theft	15	19.7%
Possession of weapon	3	3.9%
Juvenile	6	7.9%
Obstruction of justice	2	2.6%
Failure to appear	1	1.3%
Failure to protect	1	1.3%
Rape conspiracy	1	1.3%
Violation of probation	1	1.3%
Murder	1	1.3%
Disorderly conduct	3	3.9%
Vandalism	1	1.3%
Public lewdness	1	1.3%

*The sample size and percentage data are based on participants who answered in the affirmative to the preceding question and also reflects endorsement of multiple categories.

Instruments

MMPI-3 (Ben-Porath & Tellegen, 2020a)

The MMPI-3 was the primary instrument of this study. The MMPI-3's technical manual for the test provides extensive psychometric findings that support the MMPI-3's validity and reliability as a measure of personality and psychopathology (Ben-Porath & Tellegen, 2020b). Test data from the MMPI-3 normative sample and a community mental health sample, among others, were utilized to evaluate the psychometric characteristics of the test (Ben-Porath & Tellegen, 2020b). Based on the MMPI-3's normative sample, test-retest reliability coefficients for women ranged from .53 to .87 for the Validity scales, .81 to .94 for the H-O and RC scales, .76 to .90 for the Somatic/Cognitive and Internalizing scales, .73 to .92 for the Externalizing and Interpersonal scales, and .79 to .92 for the PSY-5 scales (Ben-Porath & Tellegen, 2020b). Therefore, these findings indicate that test results have considerable temporal stability. Standard errors of measurement (SEM) ranged from 3 to 6 in women across all scales, indicating acceptable limits of systematic error (Ben-Porath & Tellegen, 2020b).

In terms of internal consistency reliability, Cronbach's alpha coefficients for women, the Validity scales had alpha coefficients ranging from .36 to .78, the H-O and RC scales had alpha coefficients ranging from .71 to .92, the Somatic/Cognitive and Internalizing scales had alpha coefficients ranging from .42 to .85, the Externalizing and Interpersonal scales had alpha coefficients ranging from .54 to .81, and the PSY-5 scales had alpha coefficients ranging from .68 to .88 (Ben-Porath & Tellegen, 2020b). Following relevant scale sets, the items that make up the MMPI-3 scales are sufficiently

intercorrelated (Ben-Porath & Tellegen, 2020b). SEMs varied from 3 to 8 for women across scales, indicating that error rates were acceptable (Ben-Porath & Tellegen, 2020b).

Associations between the MMPI-3 and MMPI-2-RF versions of these measures were utilized to demonstrate the test score validity of the MMPI-3 validity scales (Ben-Porath & Tellegen, 2020b). Intercorrelations for the MMPI-3 Validity scales were found to be in the predicted directions and functioned similarly to their MMPI-2-RF equivalents (Ben-Porath & Tellegen, 2020b). The MMPI-3 CRIN, VRIN, and TRIN scales were shown to be equivalent predictors of inconsistent responding compared to the MMPI-2-RF VRIN-r and TRIN-r scales (Ben-Porath & Tellegen, 2020b). In the identification of over-reporting of difficulties, the revised F, Fp, and Fs scales were found to be interchangeable with the F-r, Fp-r, and Fs scales on the MMPI-2-RF (Ben-Porath & Tellegen, 2020b). In addition, the L and K scales work similarly to the L-r and K-r scales of the MMPI-2-RF and are useful in identifying under-reported response patterns (Ben-Porath & Tellegen, 2020b).

Data examining the MMPI-3's construct validity were established through external correlates of the MMPI-3 substantive scales for a variety of samples such as community outpatient mental health, prison inmates, disability claimants, college students, private practice outpatient, spine surgery/spinal cord stimulator candidate, and police candidate samples (Ben-Porath & Tellegen, 2020b). The empirical correlates strongly support the convergent and discriminant validity of the MMPI-3 Substantive Scales across a wide range of settings where this test is frequently used (Ben-Porath & Tellegen, 2020b). The study's outcomes also support the construct validity of the MMPI-3 Substantive Scales (Ben-Porath & Tellegen, 2020b). The empirical correlations of the

MMPI-3 substantive scales show that they are virtually interchangeable with their MMPI-2-RF equivalents (Ben-Porath & Tellegen, 2020b).

Dispositional Resilience Scale-15 (DRS-15; Bartone, 1995)

The DRS-15 is a 15-item self-report questionnaire designed to measure hardiness, also referred to as resilience, and its three subcomponents: Commitment, which assesses pursuing and engaging in opportunities as opposed to avoiding them; Control, reflecting having confidence in one's ability to control their future rather than feeling powerless; and Challenge, which involves believing that change may be a source of growth rather than resenting hardships or threats (Bartone et al., 1989). The DRS-15 was derived from the 30-item DRS (Bartone, 1995), which was created from the original 45-item DRS (Bartone et al., 1989). The internal consistency reliability of the DRS-15 was established using a sample of 700 Army reservists in the Gulf War (Bartone, 1995). Bartone (1995) reported strong alpha coefficients of .83 for the total hardiness scale and alpha coefficients ranging from .70 to .77 for the three subscales. Using a sample of 104 undergraduate students at the U.S. Military Academy, the test-retest reliability coefficient across three weeks was .78 for the overall hardiness measure and reliability coefficients of .75, .58, and .81 for the Commitment, Control, and Challenge subscales, respectively (Bartone, 2007).

Procedure

This study began after receiving approval from the Florida Institute of Technology's Institutional Review Board (IRB) and the Doctoral Research Project committee. The participants were recruited from organizations in various states that work with the sex trafficking population. These organizations included the North Star

Initiative, Elevate Academy, The Secret Place, Victim Services of Central Florida, and Naomi's House. These organizations advertised the study using an information flyer provided by the researcher. To be sensitive to the participants' need for privacy and autonomy, they were given the opportunity to contact the researcher to set up an appointment for testing. The participating organizations worked with participants to ensure they had access to a private room and computer to complete the study. Before participating in the study, all participants were asked to provide informed consent through documentation signed electronically using DocuSign. Appendix A contains the informed consent form.

The Q Global online platform of Pearson Assessments was used to administer the MMPI-3, with virtual monitoring using the Zoom platform. A brief demographic questionnaire, shown in Appendix B, was administered electronically through the Qualtrics online survey platform. The DRS-15 was also administered virtually through Qualtrics. Both documents were prepared to allow participants to enter their responses into the virtual document. Following informed consent, all participants' identifying information and test data were protected and kept confidential. To guarantee the anonymity of test scores, participants were only identified in the IBM Statistical Package for the Social Sciences (SPSS) database using an alpha-numerical code. SPSS was used for all data analysis. As an incentive for participating in the study, all participants were given a $20 Walmart or Amazon gift card.

Data Analyses

Preliminary data analyses consisted of generating descriptive statistics, including means/standard deviations and percentages, to describe the sample's demographics. The

means and standard deviations of MMPI-3 test scores were also computed separately for each subgroup.

Central analyses were directed towards examining differences in MMPI-3 scores between (1) survivors of sex trafficking first engaging in sex trafficking as a minor and as an adult, (2) survivors of sex trafficking that experienced sexual abuse and those who did not, (3) survivors of sex trafficking that experienced physical abuse and those who did not, (4) survivors of sex trafficking with a history of being a part of the child welfare system and those who did not, (5) survivors of sex trafficking with a mental health diagnosis and those without a diagnosis, (6) survivors with and without a history of drug use, (7) survivors of sex trafficking with and without a legal history, (8) survivors with shorter (≤9 years) versus longer (≥10 years) length of time in sex trafficking, and (9) survivors with a shorter (≤2 years) versus longer (≥3 years) length of time since exiting sex trafficking. These analyses consisted of multivariate analyses of variance (MANOVAs) followed by a series of univariate analyses of variance (ANOVAs). Cut points for length of time in sex trafficking and length of time since exiting sex trafficking were selected through examination of the frequency distribution of these data for the sample as well as application of a conceptual viewpoint of what would meaningfully constitute shorter and longer periods.

A Pearson product moment correlation was conducted between MMPI-3 scales and Dispositional Resilience Scale-15 scores to determine MMPI-3 scale scores that are most strongly correlated, positively or inversely, with resilience scale scores. A stepwise multiple regression analysis was conducted with the MMPI-3 scores most correlated with

resilience as the predictor variables and resilience scores as the outcome variable, to determine the amount of variance in resilience scores explained by MMPI-3 scores.

Chapter 5: Results

Preliminary analyses consisted of deriving means and standard deviations of the MMPI-3 scale scores for the sex-trafficked sample, shown in Table 3.

Table 3

Means and standard deviations of MMPI-3 scale scores for the sex-trafficked sample

	Sex-Trafficked sample ($N = 76$)	
Scale	*M*	*SD*
Validity Scales		
Cannot Say (CNS)	.14	.45
Combined Response Inconsistency (CRIN)	53.25	9.25
Variable Response Inconsistency (VRIN)	52.26	8.62
True Response Inconsistency (TRIN)	57.66	7.45
Infrequent Response (F)	**67.79**	18.73
Infrequent Psychopathology Responses (Fp)	**62.05**	16.82
Infrequent Somatic Responses (Fs)	**67.01**	17.58
Symptom Validity Scale (FBS)	**62.26**	14.70
Response Bias Scale (RBS)	**63.45**	15.35
Uncommon Virtues (L)	49.01	8.37
Adjustment Validity (K)	45.22	8.93
Higher-Order (H-O) Scales		
Emotional/Internalizing Dysfunction (EID)	59.34	11.50
Thought Dysfunction (THD)	**62.38**	14.34
Behavioral/Externalizing Dysfunction (BXD)	**61.67**	12.43

(cont.)

Table 3 (cont.)

Scale	Sex-Trafficked sample (N = 76)	
	M	*SD*
Restructured Clinical (RC) Scales		
Demoralization (RCd)	59.12	11.55
Somatic Complaints (RC1)	**62.59**	14.89
Low Positive Emotions (RC2)	54.34	11.27
Antisocial Behavior (RC4)	**62.28**	10.09
Ideas of Persecution (RC6)	**61.07**	13.62
Dysfunctional Negative Emotions (RC7)	**60.67**	14.03
Aberrant Experiences (RC8)	**62.92**	15.61
Hypomanic Activation (RC9)	57.43	14.85
Specific Problems (SP) Scales		
Somatic Scales		
Malaise (MLS)	54.79	13.80
Neurological Complaints (NUC)	**62.53**	14.23
Eating Concerns (EAT)	56.80	12.70
Cognitive Complaints (COG)	**60.29**	14.17
Internalizing Scales		
Suicidal/Death Ideation (SUI)	**61.42**	14.12
Helplessness/Hopelessness (HLP)	50.22	11.51
Self-Doubt (SFD)	58.16	12.09
Inefficacy (NFC)	57.07	12.15
Stress (STR)	58.84	10.66
Worry (WRY)	59.71	11.30
Compulsivity (CMP)	57.51	11.36
Anxiety-Related Experiences (ARX)	**67.88**	13.35
Anger Proneness (ANP)	54.51	11.12
Behavior-Restricting Fears (BRF)	**63.12**	16.64
Externalizing Scales		
Family Problems (FML)	**61.80**	11.63
Juvenile Conduct Problems (JCP)	**60.72**	11.17
Substance Abuse (SUB)	58.79	10.95
Impulsivity (IMP)	56.42	12.57
Activation (ACT)	57.41	13.15
Aggression (AGG)	57.03	13.99
Cynicism (CYN)	50.79	10.76

(cont.)

Table 3 (cont.)

Scale	Sex-Trafficked sample ($N = 76$)	
	M	*SD*
Interpersonal Scales		
Self-Importance (SFI)	51.62	11.33
Dominance (DOM)	50.13	10.87
Disaffiliativeness (DSF)	57.95	11.74
Social Avoidance (SAV)	57.18	11.93
Shyness (SHY)	54.72	11.85
Personality Psychopathology Five (PSY-5) Scales		
Aggressiveness (AGGR)	51.70	12.08
Psychoticism (PSYC)	**61.41**	14.88
Disconstraint (DISC)	**60.72**	11.45
Negative Emotionality/Neuroticism (NEGE)	**61.49**	11.93
Introversion/Low Positive Emotionality (INTR)	56.91	12.04

Note. Mean scores in bold are at least one standard deviation above the normative mean. Mean scores that are underlined are at least one-half standard deviation above the normative mean.

Table 3 data showed that 16 of the 42 substantive scales reached a T score of 55, that is, one-half standard deviation above the normative mean. Seventeen substantive scale scores reached a T score of 60, that is, one standard deviation above the normative mean. One (i.e., ARX) of the substantive scales reached the clinical cut score of 65.

A one-way MANOVA was conducted to determine if there was an overall significant difference in MMPI-3 substantive scale scores between subgroups of sex trafficking victims based on their entry status, sexual abuse history, physical abuse history, history of being involved in the child welfare system, history of a mental health diagnosis, drug use history, legal history, length of time involved in sex trafficking, and length of time since they exited sex trafficking. The MANOVA result was statistically significant for drug use history, Wilk's $\lambda = .30$, $F(1, 74) = 1.88$, $p = .032$, partial $\eta^2 = .71$.

MANOVA result was also statistically significant for legal history, Wilk's $\lambda = .25$, $F(1, 74) = 2.36$, $p = .006$, partial $\eta^2 = .75$. Because the primary interest of this study was to examine MMPI-3 scale score differences for each sex trafficking variable of interest, a series of ANOVAs were conducted for all subgroup comparisons. Significant ANOVA results for each subgroup are presented in Tables 4-12.

Table 4

Significant ANOVA results for MMPI-3 scale scores of participants who entered sex trafficking as a minor versus as an adult

Scale	Trafficked as a minor ($N = 47$)		Trafficked as an adult ($N = 29$)		$F(1,74)$	p	η^2
	M	SD	M	SD			
SUI	64	14	57	13	4.595	.035	.058
SUB	57	11	62	11	4.203	.044	.054

Note. Only scales that reached statistical significance ($p<.05$) are listed in this table.

Individuals trafficked as a minor produced a significantly higher mean SUI score than those trafficked as an adult. Conversely, individuals trafficked as an adult produced a significantly higher mean SUB score than those trafficked as a minor.

Table 5

Significant ANOVA results for MMPI-3 scale scores of participants with and without a sexual abuse history

Scale	Sexual abuse history ($N = 65$)		No sexual abuse history ($N = 11$)		$F(1,74)$	p	η^2
	M	SD	M	SD			
EID	60	11	53	11	4.718	.033	.060
RC2	56	11	47	8	6.130	.016	.077

(cont.)

Table 5 (cont.)

Scale	Sexual abuse history (N = 65)		No sexual abuse history (N = 11)		F(1,74)	p	η^2
	M	SD	M	SD			
MLS	56	14	47	11	4.599	.035	.059
STR	60	10	53	11	4.566	.036	.058
ARX	69	13	61	12	4.042	.048	.052
DOM	49	10	59	11	9.541	.003	.114
DSF	59	11	51	11	4.597	.035	.058
SAV	59	11	49	13	6.658	.012	.083
SHY	56	12	47	10	6.588	.012	.082
NEGE	63	11	55	13	4.559	.036	.058
INTR	58	112	48	8	7.837	.007	.096

Note. Only scales that reached statistical significance (p<.05) are listed in this table.

Those with a sexual abuse history produced significantly higher mean scores on EID, RC2, MLS, STR, ARX, DSF, SAV, SHY, NEGE, and INTR scales than those without a sexual abuse history. Conversely, those without a sexual abuse history produced a significantly higher mean DOM score than those with a sexual abuse history.

Table 6

Significant ANOVA results for MMPI-3 scale scores of participants with and without a physical abuse history

Scale	Physical abuse history (N = 57)		No physical abuse history (N = 19)		F(1,74)	p	η^2
	M	SD	M	SD			
DSF	60	2	53	3	4.306	.041	.055

Note. Only scales that reached statistical significance (p<.05) are listed in this table.

Individuals with a physical abuse history produced a significantly higher mean DSF score than those without a physical abuse history.

Table 7

Significant ANOVA results for MMPI-3 scale scores of participants with and without a history of involvement in the child welfare system

Scale	Child welfare history (N = 18)		No child welfare history (N = 58)		$F(1,74)$	p	η^2
	M	SD	M	SD			
JCP	67	3	59	1	6.940	.010	.086

Note. Only scales that reached statistical significance (p<.05) are listed in this table.

Those with a child welfare involvement history produced a significantly higher mean JCP score than those without a history of being involved in the child welfare system.

Table 8

Significant ANOVA results for MMPI-3 scale scores of participants with and without a psychiatric diagnosis

Scale	Diagnosed (N = 61)		Not diagnosed (N = 15)		$F(1,74)$	p	η^2
	M	SD	M	SD			
SFD	60	2	52	3	4.54	.036	.058
NFC	59	2	51	3	5.14	.026	.065
FML	64	1	54	3	8.47	.005	.103
SUB	60	1	53	3	5.96	.017	.075
CYN	52	1	45	3	4.81	.031	.061

Note. Only scales that reached statistical significance (p<.05) are listed in this table.

Those with a psychiatric diagnosis produced significantly higher mean scores on SFD, NFC, FML, SUB, and CYN scales than those without a diagnosis.

Table 9

Significant ANOVA results for MMPI-3 scale scores of participants with and without a drug use history

Scale	Drug use history ($N = 59$)		No drug use history ($N = 17$)		$F(1,74)$	p	η^2
	M	SD	M	SD			
BXD	65	1	52	3	17.09	<.001	.188
RC4	65	1	53	2	23.03	<.001	.237
MLS	53	2	62	3	6.52	.013	.081
JCP	62	1	55	3	5.88	.018	.074
SUB	62	1	47	2	34.58	<.001	.319
DISC	64	1	51	2	21.32	<.001	.224

Note. Only scales that reached statistical significance ($p<.05$) are listed in this table.

Those with a drug use history produced significantly higher mean BXD, RC4, JCP, SUB, and DISC scores than those without a drug use history. Conversely, those without a drug use history produced a significantly higher MLS mean score than those with a drug use history.

Table 10

Significant ANOVA results for MMPI-3 scale scores of participants with and without a legal history

Scale	Legal history ($N = 55$)		No legal history ($N = 21$)		$F(1,74)$	p	η^2
	M	SD	M	SD			
EID	57	2	64	2	5.58	.021	.070
BXD	65	2	54	2	14.75	<.001	.166
RCd	57	2	64	2	6.21	.015	.077
RC4	65	1	54	2	22.95	<.001	.237
MLS	52	2	61	3	6.83	.011	.084
SFD	56	2	64	3	8.30	.005	.101
ARX	65	2	74	3	7.35	.008	.090
JCP	63	1	56	2	6.24	.015	.078
SUB	62	1	51	2	16.69	<.001	.184
AGG	59	2	52	3	4.29	.042	.055
SHY	53	2	60	3	5.24	.025	.066
DISC	64	1	53	2	18.07	<.001	.196

Note. Only scales that reached statistical significance ($p<.05$) are listed in this table.

Individuals with a legal history produced significantly higher mean scores on BXD, RC4, JCP, SUB, AGG, and DISC scales than those without a legal history. Conversely, individuals without a legal history produced significantly higher EID, RCd, MLS, SFD, ARX, and SHY mean scores than individuals with a legal history.

Table 11

Significant ANOVA results for MMPI-3 scale scores of participants who were involved in sex trafficking for nine or fewer years and those involved for ten or more years

Scale	Involved for ≤9 years (N = 39)		Involved for ≥10 years (N = 37)		$F(1,74)$	p	η^2
	M	SD	M	SD			
RC7	64	2	57	2	5.30	.024	.067
EAT	60	2	54	2	4.41	.039	.056
WRY	62	2	57	2	4.25	.043	.054
ANP	58	2	51	2	6.96	.010	.086
IMP	60	2	53	2	7.24	.009	.089
NEGE	64	2	58	2	5.17	.026	.065

Note. Only scales that reached statistical significance (p<.05) are listed in this table.

Those involved in sex trafficking for nine or fewer years produced significantly higher RC7, EAT, WRY, ANP, IMP, and NEGE mean scores than those who were involved in sex trafficking for ten or more years.

Table 12

Significant ANOVA results for MMPI-3 scale scores of participants who have been out of sex trafficking for two or fewer years and those who have been out for three or more years

Scale	Exited for ≤2 years (N = 24)		Exited for ≥3 years (N = 52)		$F(1,74)$	p	η^2
	M	SD	M	SD			
RC6	66	3	59	2	4.42	.039	.056
HLP	54	2	48	2	4.01	.049	.051
CYN	56	2	48	1	9.29	.003	.112

Note. Only scales that reached statistical significance (p<.05) are listed in this table.

Individuals who have exited sex trafficking for two or fewer years produced significantly higher RC6, HLP, and CYN mean scores than those who have exited sex trafficking for three or more years.

The descriptive statistics of the DRS-15 subscales and total scale scores for the sex-trafficked sample are shown in Table 13.

Table 13

Descriptive statistics of DRS-15 scale scores for the sex-trafficked sample

Scale	Sex-Trafficked sample (N = 76)			
	M	*SD*	*Median*	*Range*
Commitment	10.12	3.03	10	2 - 15
Control	11.47	2.80	11	5 - 15
Challenge	7.93	3.10	8	1 - 15
Total Resilience	29.50	6.76	29	16 - 42

Note. The possible range of scores are 0-15 for Commitment, Control, and Challenge subscales and 0-45 for the Resilience total score. Lower scores reflect lower levels of the measured characteristic.

The correlations between the MMPI-3 scale scores and the DRS-15 subscale and total scores are shown in Table 14.

Table 14

Pearson correlation results between DRS-15 and MMPI-3 scales among the sex-trafficked sample

MMPI-3 Scales	Commitment	Control	Challenge	Total Hardiness[a]
CRIN	-.00	.15	-.07	.04
VRIN	-.01	.12	-.04	.05
TRIN	-.01	.08	.00	.02

(cont.)

Table 14 (cont.)

MMPI-3 Scales	Commitment	Control	Challenge	Total Hardiness[a]
F	**-.50****	-.18	-.28*	-.46**
Fs	-.37**	-.20	-.20	-.37**
FBS	-.40**	-.38**	-.31**	-.48**
RBS	-.48**	-.25*	-.37**	**-.51****
L	.10	.07	.22	.19
K	**.57****	.36**	.37**	**.60****
EID	**-.71****	-.39**	-.28*	**-.63****
THD	-.19	-.05	-.23*	-.22
BXD	-.01	.13	.05	.02
RCd	**-.65****	-.29*	-.29*	**-.56****
RC1	-.36**	-.25*	-.29*	-.43**
RC2	**-.66****	-.30*	-.25*	**-.52****
RC4	-.11	.13	.04	-.03
RC6	-.15	-.04	-.19	-.19
RC7	-.44**	-.27*	-.34**	**-.50****
RC8	-.18	-.08	-.22	-.24
RC9	-.02	-.01	-.04	-.06
MLS	**-.61****	-.34**	-.25*	**-.55****
NUC	-.23**	-.14	-.17	-.26**
EAT	-.31*	-.20*	-.35**	-.41**
COG	-.46**	-.16	-.25*	-.43**
SUI	-.39**	-.26*	-.24*	-.41**
HLP	**-.50****	-.46**	-.35**	**-.60****
SFD	**-.59****	-.44**	-.29*	**-.58****
NFC	**-.55****	-.24*	-.33**	**-.52****
STR	-.46**	**-.53****	-.36**	**-.60****
WRY	-.49**	-.27*	-.37**	**-.50****
CMP	-.32**	-.15	-.31**	-.35**
ARX	-.43**	-.33**	-.34**	**-.50****
ANP	-.15	-.08	-.13	-.17
BRF	-.16	-.19	-.20	-.23*
FML	-.26*	-.01	-.06	-.13
JCP	-.08	.06	.03	-.05
SUB	.12	.20	.08	.14
IMP	-.09	-.08	-.05	-.12
ACT	-.10	-.03	-.11	-.13
AGG	-.01	.16	-.02	.01
CYN	-.36**	-.10	-.09	-.29*
SFI	.38**	.23*	.20	.35**
DOM	.35**	.23*	.11	.30**

(cont.)

Table 14 (cont.)

MMPI-3 Scales	Commitment	Control	Challenge	Total Hardiness[a]
DSF	-.13	-.05	-.10	-.13
SAV	-.22	-.16	-.09	-.16
SHY	-.37**	-.15	-.18	-.31**
AGGR	.21	.22	.07	.21
PSYC	-.23	-.11	-.28*	-.29*
DISC	-.06	.09	.05	-.02
NEGE	-.45**	-.33**	-.35**	**-.51****
INTR	-.42**	-.18	-.13	-.30**

Note. [a]also referred to as resilience. *$p < .05$, **$p < .01$

Out of the 52 correlations between the MMPI-3 scales and the DRS-15 total score, 31 were statistically significant at the $p<.05$ level or lower. These included six Validity scales, one Higher Order scale, four Restructured Clinical scales, 17 Specific Problems scales, and three PSY-5 scales. Out of those significant correlations, 15 were medium effect sizes and 14 were large effect sizes, as determined by Cohen's (1988) guidelines for effect sizes. The strongest correlations were for scales RBS, K, EID, RCd, RC2, MLS, HLP, SFD, NFC, STR, WRY, ARX, and NEGE, with the problem-oriented substantive scales inversely correlated with the DRS-15 total score, as expected from the measured constructs, and the SFI and DOM substantive scales positively correlated with the DRS-15 total score, reflecting the expected direction.

Thirty correlations between the MMPI-3 scales and the DRS-15 Commitment subscale score were statistically significant at the $p<.05$ level or lower. These included six Validity scales, one Higher Order scale, four Restructured Clinical scales, 17 Specific Problems scales, and two PSY-5 scales. Among those significant associations, 18 were medium effect sizes and 9 were large effect sizes. The strongest correlations were for scales F, K, EID, RCd, RC2, MLS, HLP, SFD, and NFC, with the problem-oriented substantive scales inversely correlated with the DRS-15 Commitment score, as expected.

SFI and DOM substantive scales positively correlated with the DRS-15 Commitment score, as expected.

From the 52 correlations between the MMPI-3 scales and the DRS-15 Control subscale score, 20 were statistically significant at the $p<.05$ level or lower. These included three Validity scales, one Higher Order scale, four Restructured Clinical scales, 11 Specific Problems scales, and one PSY-5 scale. Out of those significant ones, 10 were medium effect sizes and one was a large effect size. The strongest correlation was for scale STR, which was inversely correlated with the DRS-15 Control score, and the SFI and DOM substantive scales positively correlated with the DRS-15 Control score.

Twenty-four correlations between the MMPI-3 scales and the DRS-15 Challenge subscale score were statistically significant at the $p<.05$ level or lower. These included five Validity scales, two Higher Order scales, four Restructured Clinical scales, 11 Specific Problems scales, and two PSY-5 scales. Among these correlations, 19 were medium effect sizes and none were large effect sizes. The strongest correlations were for scales Fp, FBS, RBS, K, RC7, EAT, HLP, NFC, WRY, CMP, ANX, and NEGE, with the problem-oriented substantive scales inversely correlated with the DRS-15 Challenge score.

A stepwise multiple regression was conducted to examine which MMPI-3 substantive scales best explained the variance in total DRS-15 scores. The results are shown in Table 15.

Table 15

Summary of stepwise multiple regression analysis for MMPI-3 scale scores and DRS-15 total score

Model	Adj. R^2	Std. Error	ΔR^2	β	Sig.
Step 1					
EID	.38	5.31	.39	-.63	<.001
Step 2					
EID				-.41	
STR	.45	5.03	.07	-.34	.003
Step 3					
EID				-.17	
STR				-.35	
HLP	.50	4.76	.06	-.34	.003
Step 4					
STR				-.43	
HLP	.50	4.79	-.01	-.43	.195

In step 1, EID alone explained 38% of the variance in the DRS-15 total score. The addition of STR in step 2 increased the explained variance to 45%, representing an additional 7% of resilience score variance. The addition of HLP in step 3 increased the total variance to 50%, representing an additional 6% of resilience score variance. The deletion of EID in step 4 did not produce any change in the overall resilience score variance explained, and no further steps proved fruitful.

In light of the significant MANOVA results discussed earlier, which showed MMPI-3 mean score differences for subgroups of sex-trafficked women based on legal history and substance abuse history, a final post hoc analysis was undertaken to compare DRS-15 mean scores of women in these subgroups. The independent samples t-test results of the DRS-15 subscales and total scale scores of both subgroups are shown in Tables 16 and 17.

Table 16

Independent samples t-test results of DRS-15 scale scores of participants with and without a drug use history

	Drug use history (N = 59)		No drug use history (N = 17)		t	p
Scale	M	SD	M	SD		
Commitment	10	3	9	3	-1.001	.635
Control	12	3	11	3	-.989	.834
Challenge	8	3	8	4	-.609	.179
Total	30	7	28	7	-1.164	.404

Significant differences in the DRS-15 scales were not found between those with a drug use history and those without a drug use history.

Table 17

Independent samples t-test results of DRS-15 scale scores of participants with and without a legal history

	Legal history (N = 55)		No legal history (N = 21)		t	p
Scale	M	SD	M	SD		
Commitment	10	3	10	3	-.973	.152
Control	12	3	10	3	-3.31	.900
Challenge	8	3	7	3	.860	-2.446
Total	31	7	26	5	-2.71	.044

Those with a legal history significantly scored higher than those without a legal history on total resilience.

Chapter 6: Discussion

Sex trafficking is a form of exploitation that affects every country worldwide. Sex trafficking preys on vulnerable individuals and leaves them with lasting impacts that can adversely affect their physical and mental health, shatter their sense of safety and trust, and often trap them in a cycle of trauma and exploitation that can be very difficult to escape. Due to the hidden nature of this crime, current prevalence estimates are grossly underreported. Research on sex trafficking has shown that these individuals experience higher rates of depression, anxiety, post-traumatic stress, and physical health concerns. Unfortunately, there is an increasing number of people worldwide who are sex trafficked, and there is an urgent need to understand the effects of sex trafficking on this victim group and increase prevention and advocacy efforts.

To date, there is limited published research focused on examining the psychological difficulties of the sex-trafficked population with standardized psychological measures, and no published studies have focused on examining the MMPI scores of this population. The MMPI and its subsequent versions are the most widely utilized measures in clinical personality assessment, as they are broadband measures that assess a comprehensive range of emotional, behavioral, social, and psychological difficulties. Therefore, the current study aimed to understand the psychological difficulties of women who have experienced sex trafficking with the MMPI-3.

Preliminary Results

The first purpose of this study was to examine the mean MMPI-3 scores of a sample of 76 adult women who have experienced sex trafficking. The data gathered from this sample was intended to serve as a reference group to enable a broad view of the

psychological difficulties experienced by this group. This sex-trafficked sample's highest mean scores, reaching at least one standard deviation above the normative mean, were on scales measuring difficulties related to thought dysfunction (THD), behavioral problems (BXD), physical health problems (RC1), antisocial behaviors and familial conflict (RC4), persecutory beliefs (RC6), negative emotional experiences involving anger, anxiety, and fear (RC7), unusual perceptual experiences and disordered thinking (RC8), neurological problems (NUC), memory problems, confusion, and trouble concentrating (COG), suicidality (SUI), fears that inhibit normal activity (BRF), family conflicts (FML), difficulties at school and home (JCP), disconnection from reality (PSYC), under-controlled behavior (DISC), and anxiety, fear, insecurity, and worry (NEGE), with the highest average score being on the scale measuring multiple anxiety-related experiences (ARX, 1.5 standard deviations above the normative mean). The pattern of these results is fairly consistent with previous MMPI research by De Schampheleire (1990) and Exner et al. (1977) demonstrating that sex workers produced elevations on similar scales identifying concern with physical ailment (Scale 1, Hypochondriasis), internalizing symptoms (Scale 2, Depression; Scale 7, Psychasthenia), behavioral overcontrol (Scale 3, Hysteria) and undercontrol (Scale 4, Psychopathic Deviant), odd beliefs (Scale 8, Schizophrenia), and interpersonal discomfort (Scale 0, Introversion). The present study's findings are also fairly consistent with findings based on previous versions of the MMPI with sexually abused women who produced elevations on Hy, D, Pt, Pd, PS, Sc, and Si, as well as EID, RC1, MLS, NUC, COG, AXY (anxiety), and SUI (McManus et al., 2018). However, it is noted that the MMPI-3 results of this study are specific to sex-trafficked adult women and are not interchangeable with those of sex workers and/or

victims of childhood sexual abuse. Overall, these results show that women who have been sex trafficked experience various, broad-ranging features of psychological difficulty with the specific areas evident in their MMPI-3 profiles.

Central Results

The second purpose of the study concerned differences in MMPI-3 substantive scale mean scores between subgroups of sex trafficking victims based on their entry status, sexual abuse history, physical abuse history, history of being involved in the child welfare system, history of a mental health diagnosis, drug use history, legal history, length of time involved in sex trafficking, and length of time since they exited sex trafficking. It was predicted that women who have experienced these situations will generally have higher MMPI-3 mean scores than their subgroup counterparts. These results were expected based on prior research on individuals who entered sex trafficking at a younger age, have a history of sexual abuse, prior physical abuse history, were involved in the child welfare system, have a mental health diagnosis, have a substance abuse history, have a legal history, have been involved in sex trafficking for a longer time, or have recently left sex trafficking demonstrate worse psychological outcomes.

1. Entry into sex trafficking as a minor versus an adult. The overall multivariate result was not significant. However, the univariate results indicated that women who entered as a minor scored significantly higher than those who entered as an adult on SUI, representing features of suicidal ideation. Conversely, women who entered sex trafficking as an adult scored significantly higher than those who entered as a minor on SUB, representing behavioral disorders involving substance abuse. The sex trafficking literature has not made many distinctions between those who entered as a minor and

those who entered as an adult. It has been noted that such a distinction is arbitrary (Farley et al., 2004). However, research has highlighted that children with more adverse life events are more likely to be sexually exploited, and they experience higher rates of depression, anxiety, and post-traumatic stress (Abas et al., 2013; Farley et al., 2004; Hossain et al., 2010; Lederer & Wetzel, 2014; Oram et al., 2015; Zimmerman et al., 2008). It is not, therefore, surprising that women who entered sex trafficking as minors experience higher levels of suicidal ideation. They entered sex trafficking in a critical developmental stage, making them more susceptible to the negative effects of their trafficking experience. Children and adolescents have relatively limited adaptive coping skills and emotional regulation development relative to adults. This amplifies their vulnerability in sex trafficking contexts, elevating the risk of suicidal thoughts and behaviors due to their endured trauma and exploitation. Women who entered sex trafficking as adults undoubtedly also experience distressing events during their trafficking experience. However, they likely had more access to alcohol and drugs, either through coercion or voluntarily, temporarily providing relief and escape from the intense negative emotions associated with these distressing events.

2. Sex-trafficked women with a sexual abuse history and those without a sexual abuse history. While the multivariate outcome did not yield statistical significance, the univariate results were significant. Specifically, women with a sexual abuse history in childhood scored significantly higher than those without a sexual abuse history on EID, RC2, MLS, STR, ARX, DSF, SAV, SHY, NEGE, and INTR. These elevated scores collectively indicate features of emotional and internalizing difficulties, lack of positive emotional experiences, feelings of ill health, stress, anxiety-related experiences, disliking

others and being around them, social avoidance, discomfort around people, negative emotionality, and social disengagement. In contrast, women without a sexual abuse history scored significantly higher than those with a sexual abuse history on DOM, representing greater ability to stand up for themselves. When subjected to sex trafficking, the traumatic experience of childhood sexual abuse can be intensified, leading to mental health challenges such as depression, stress, and a lack of trust. Childhood sexual abuse survivors may struggle to form healthy relationships, compounding the psychological toll. Previous research findings have similarly indicated that sex-trafficked individuals with a history of sexual abuse report a lack of personal relationships (Farley et al., 2004), emphasizing the dual impact on their interpersonal relationships. Women who did not experience childhood sexual abuse by comparison, would presumably have greater potential for assertiveness in relationships as their personal sense of power was not eroded from an early age.

3. Sex-trafficked women with a physical abuse history and those without a history of physical abuse. The overall multivariate result was not significant. Nevertheless, the univariate results indicated that women with a physical abuse history in childhood scored significantly higher than those without a physical abuse history on DSF, representing disliking others and preferring to be alone. Prior research has indicated that over 70% of sex trafficking victims reported childhood physical abuse (Kurtz et al., 2005; Stoltz et al., 2007). Research has also shown a strong positive correlation between the extent of physical abuse and the severity of PTSD symptoms (Farley et al., 2004). Childhood physical abuse is a traumatic experience that can have profound and lasting effects on a person's interpersonal relationships and perceived closeness with others. When

individuals who have experienced childhood physical abuse later become victims of sex trafficking, the combination of these events can further tarnish their desire to form relationships with others.

4. Sex-trafficked women with a history of child welfare involvement and those without a child welfare history. The overall multivariate result was not significant. However, the univariate results indicated that women with a child welfare history scored significantly higher than those without a child welfare history on JCP, representing behavioral difficulties at home and school. Research has shown that children who experience family dysfunction, parental absence, and unsafe environments, and are therefore brought into the child welfare system, are more vulnerable to engaging in sex trafficking (Miller-Perrin & Wurtele, 2018; Reid, 2011; Walker & Quraishi, 2014). Some juveniles in the child welfare system may mistrust authority figures due to their experience, which can reduce their willingness to comply with rules and expectations. The reverse direction of juveniles who do not comply with the rules set in their home and school becoming involved in the child welfare system may also apply. Overall, the relationship between child welfare system involvement and juvenile behavioral disorder was shown to be meaningful for sex-trafficked women in the current study.

5. Sex-trafficked women with a psychiatric diagnosis and those without a diagnosis. Although the overall multivariate result was not significant, univariate results indicated that women with a diagnosis scored significantly higher than those without a diagnosis on SFD, NFC, FML, SUB, and CYN. Collectively, they represent features of lacking confidence, feeling indecisive and inefficacious, having conflictual family experiences, engaging in substance abuse, and believing that others are bad and not to be

trusted. In the sex trafficking literature, an association has been found between heightened mental health concerns and trafficking-related experiences (Hossain et al., 2010). The current study showcased how psychological disorders among sex-trafficked women may exacerbate the impact of trauma and vice versa, making it difficult for these individuals to cope with their traumatic experiences and leading to higher levels of distress, maladaptive coping, distrust and conflict with others, and self-doubt.

6. Sex-trafficked women with a substance abuse history and those without a substance abuse history. The overall multivariate result was significant. Univariate results indicated that women with a drug use history scored significantly higher than those who did not have a drug use history on BXD, RC4, JCP, SUB, and DISC. Collectively, they represent behavioral disorders with broad acting-out disturbances, including antisocial behaviors and familial conflict, childhood behavioral difficulties at home and school, a drug use history, and under-controlled behavior. Conversely, women without a drug use history scored significantly higher than women with a drug use history on MLS, representing feelings of weakness and fatigue. Sex-trafficked women could have used drugs as a coping mechanism to numb the emotional pain and trauma they experienced, and it could have also been used by force or coercion by their trafficker. The drugs could have contributed to their psychological difficulties such as under-controlled behaviors, difficulties at home and school, and antisocial behaviors, contributing to heightened distress. Women who did not have a history of drug use likely found themselves genuinely confronting (as opposed to numbing) their emotions after their trafficking experience, which heightened their discomfort with their life situation. These findings relate to conclusions made by Lederer and Wetzel (2014) about how sex-trafficked

individuals are driven to engage in substance abuse through force or to cope with their negative experiences.

7. Sex-trafficked women with a legal history and those without a legal history. A significant multivariate result was demonstrated. Univariate results indicated that women with a legal history scored significantly higher than those who did not have a legal history on BXD, RC4, JCP, SUB, AGG, and DISC. Conjointly, they represent behavioral disorders with various features of broad behavioral difficulties including antisocial behavior, difficulties at home and school in childhood or adolescence, substance abuse history, physically aggressive behavior, and under-controlled behavior. In contrast, women without a legal history scored significantly higher than women with a legal history on EID, RCd, MLS, SFD, ARX, and SHY. These scales collectively represent emotional difficulty, general unhappiness and life dissatisfaction, a sense of poor health, self-doubt, anxious-related experiences, and shyness. These findings contribute new information to the sex trafficking literature. The results indicate that sex-trafficked women's involvement with the legal system or prior legal issues may be associated with heightened behavioral problems and difficulties complying with societal rules and norms. The results also showed that sex-trafficked women without a legal history might experience higher levels of internal psychological distress, including feelings of sadness, anxiety, and self-doubt.

The MMPI-3 findings from this study regarding comparisons of sex-trafficked women with drug histories and legal histories to those who did not have such histories indicate greater behavioral difficulties in the former groups and greater emotional difficulties in the latter groups. They imply that the former groups are relatively more

hardened, an issue that deserved further investigation. Specifically, as drug use and legal history were the only subgroups that produced significant multivariate results, and they both involve acting out behaviors, the question arose about whether resilience associated with the suffering of sex trafficking represents a hardening against imploding on oneself. A post-hoc analysis was conducted to examine the mean DRS-15 scale scores of these subgroups. The result was significant for legal history, showing that women with a legal history scored significantly higher on total resilience than women without a legal history. Resilience in the research literature has been discussed as a protective factor. Is resilience in the context of this finding a defense mechanism to prevent emotional collapse? Of course, we must consider if the legal charges were levied for prostitution, as it would be a confounding factor because it is a consequence of their sex trafficking experience, and this was not known for the current sample. Nonetheless, this finding suggests the need for further study of facets of resilience in sex-trafficked women.

8. Sex-trafficked women involved in sex trafficking for nine or fewer years and those involved 10 or more years. The overall multivariate result was not significant. However, univariate results indicated that women who were involved in sex trafficking for the shorter length of time scored significantly higher than those who were involved for the longer duration on RC7, EAT, WRY, ANP, IMP, and NEGE. Collectively, they represent negative emotional experiences, problematic eating behaviors, excessive worry and preoccupation, becoming easily angered, poor impulse control, and anxiety, fear, and worry. Prior research has shown that individuals who have engaged in sex trafficking for at least six months experience higher levels of depression and anxiety than individuals involved in sex trafficking for a shorter period (Hossain et al., 2010). Interestingly, this

study demonstrates that women who were involved in sex trafficking for more than a decade experience less distress than women who were involved for a shorter amount of time. A possible explanation for this discrepancy is that women who were involved in sex trafficking for a decade or longer may have become desensitized to the traumatic experiences they endured throughout their trafficking experience or developed defense mechanisms to manage their reactions. Women who have just entered or have been involved in sex trafficking for nine or fewer years may experience lingering distress related to the trauma of sex trafficking, have a harder time regulating their emotions, and experience more uncertainty and fear concerning their circumstances.

9. Sex-trafficked women who had exited sex trafficking for two or fewer years and those who had exited for three or more years. Although the overall multivariate result was not significant, the univariate results offered valuable insights. Specifically, women who have exited sex trafficking more recently scored significantly higher than those who have exited sex trafficking for three or more years on RC6, HLP, and CYN. These scales reflect features of persecutory beliefs and mistrust of others, a belief that goals cannot be reached, and a belief that others are bad and not to be trusted. This study's finding broadly supports previous findings that individuals who recently left sex trafficking experience more psychological distress, such as depression, than individuals who had left for a longer time, as indicated by Hossain et al. (2010), who found that individuals who had exited for at least six months experienced reduced distress. This study highlights that women whose sex trafficking experiences were more recent are likely still grappling with the immediate aftermath of those experiences and are wary of others.

Psychological Dysfunction and Resilience: Correlational Results

The third purpose of the study was to determine if MMPI-3 scale scores were significantly inversely correlated with resilience for sex-trafficked women. As hypothesized, strong inversely related correlations were found between MMPI-3 scale scores and total resilience scores. Specifically, the emotional dysfunction scales of the MMPI-3 had the strongest and largest number of negative correlations with the DRS-15 total score. These included scales EID, RCd, RC2, RC7, SUI, HLP, SFD, NFC, STR, WRY, CMP, ARX, NEGE, and INTR. The strongest correlations with large effect sizes were scales EID, RCd, RC2, RC7, HLP, SFD, NFC, STR, WRY, ARX, and NEGE, collectively reflecting a broad range of negative emotional experiences. This finding reflects the strong negative correlation between resilience and emotional difficulties, unhappiness, helplessness, self-doubt, inefficacy, stress, worry, anxiety, and fear.

The somatic and cognitive dysfunction scales produced the second-largest number of strong correlations with the DRS-15 total score. These scales reflect health and cognitive struggles and include RC1, MLS, EAT, and COG, with MLS producing a large, effect-sized correlation and the others producing moderate effect-size correlations. Collectively, these scales reflect strong negative correlations between total resilience and physical health complaints, malaise, eating concerns, and memory and concentration problems. The interpersonal functioning scale SHY, which measures feeling uncomfortable and anxious in the presence of others, produced a negative correlation with the DRS-15 total score with a moderate effect size. The SFI and DOM interpersonal scales produced positive correlations with the DRS-15 total score with a moderate effect size. These scales reflect beliefs about having talents and abilities and being dominant in

relationships. This finding reflects the positive association between resilience and positive self-views. The thought dysfunction scale produced a moderate negative correlation between PSYC, which reflects a disconnection from reality, and the DRS-15 total score. Finally, the only behavioral dysfunction scale that correlated inversely and moderately with the DRS-15 total score was CYN, which reflects beliefs that others are bad. Previous research indicates that individuals with more resilience or hardiness are able to view stressful events as less threatening and utilize coping skills in times of stress (Bonano, 2004). Sex-trafficked women who display a lower level of total resilience may, therefore, view their experience as stressful, and without adequate coping skills, they experience a sense of unhappiness, anxiety, helplessness, concerns with their health and cognitive functioning, and cynicism concerning their lives.

In addition to total resilience, components of resilience represented by the DRS-15 subscales were also examined in correlation with the MMPI-3. Strong inversely related correlations were found when determining if MMPI-3 scores were correlated with the DRS-15 Commitment subscale scores. Specifically, the emotional dysfunction scales of the MMPI-3 had the strongest and largest number of negative correlations with the DRS-15 Commitment subscale scores. These included scales EID, RCd, RC2, RC7, MLS, EAT, SUI, HLP, SFD, NFC, STR, WRY, CMP, ARX, NEGE, and INTR. The strongest correlations with large effect sizes were scales EID, RCd, RC2, HLP, SFD, and NFC, collectively reflecting negative emotional experiences. This finding reflects the strong negative association of emotional difficulties, unhappiness, helplessness, self-doubt, and inefficacy with commitment.

The second-largest number of strong correlations with the DRS-15 Commitment subscale score were produced by the somatic and cognitive dysfunction scales. These scales reflect health and cognitive struggles and include RC1, MLS, EAT, and COG, with MLS producing a strong large effect size correlation. Collectively, these scales reflect a strong negative correlation between commitment and physical health complaints, malaise, eating concerns, and memory and concentration problems. The interpersonal functioning scale SHY correlated negatively with the DRS-15 Commitment subscale score with a moderate effect size. This reflects an inverse relationship between feeling uncomfortable and anxious in the presence of others and being resilient. The SFI and DOM interpersonal scales correlated positively with the DRS-15 Commitment subscale score with a moderate effect size. This finding reflects the positive correlation between the level of commitment in pursuing and engaging in opportunities and self-importance and dominance. Finally, CYN was the only behavioral dysfunction scale negatively correlated with the DRS-15 Commitment subscale score with a moderate effect size. This finding reflects the moderately strong negative correlation between commitment and cynicism. None of the thought dysfunction produced strong correlations with the DRS-15 Commitment subscale. Overall, sex-trafficked women with heightened emotional, somatic and cognitive, interpersonal, and behavioral difficulties may exhibit lower commitment scores. The emotional strain of their distress can limit their capacity to allocate resources and energy to various life commitments, leading to decreased commitment levels.

In examining if the MMPI-3 scores were correlated with the DRS-15 Control subscale scores, several inverse correlations were found. The emotional dysfunction

scales of the MMPI-3 had the strongest and largest number of negative correlations with the DRS-15 Control subscale scores. These included scales EID, RCd, RC2, HLP, SFD, STR, ARX, and NEGE. STR produced the strongest correlation with a large effect size, which reflects stress. This finding reflects the strong negative correlation between stress and the perceived amount of control in their lives.

The somatic and cognitive dysfunction scales produced the second-largest number of strong correlations with the DRS-15 Control subscale scores. These scales reflect health and cognitive struggles and include MLS, which produced a strong moderate effect size correlation. The results showed a strong negative correlation between malaise and DRS-15 Control. The interpersonal functioning, thought dysfunction, and behavioral dysfunction scales did not correlate strongly with the DRS-15 Control subscale scores. Overall, women who report emotional, somatic, and cognitive difficulties may experience a perceived loss of sense of agency and control over their lives. This reduced sense of control can result from the emotional and cognitive challenges they encounter, making it harder for them to navigate and manage various aspects of their daily lives effectively.

Moderately strong inversely related correlations were found when examining MMPI-3 scale score correlations with the DRS-15 Challenge subscale scores. In particular, the emotional dysfunction scales of the MMPI-3 produced the largest number of negative correlations with the DRS-15 Challenge subscale scores. These included scales EID, RCd, RC7, HLP, SFD, NFC, STR, WRY, CMP, ARX, and NEGE. These scales were all moderate effect sizes and collectively reflect emotional struggles. This finding revealed moderate negative correlations between emotional difficulties, negative emotional experiences, helplessness, lack of confidence, the belief they are inefficacious,

stress, worry, compulsive behaviors, anxiety-related experiences, fear, insecurity, and the perceived amount of control in their lives.

The somatic and cognitive dysfunction scales produced the second-largest number of moderately strong correlations with the DRS-15 Challenge subscale scores. These scales reflect health and cognitive struggles and produced moderate effect size correlations. These scales include RC1 and EAT, reflecting a negative correlation between physical health complaints, problematic eating behaviors, and the DRS-15 Challenge subscale. The thought dysfunction scale produced a moderate negative correlation between PSYC and the DRS-15 Challenge subscale score, reflecting a disconnection from reality. The interpersonal functioning and behavioral dysfunction scales did not correlate strongly with the DRS-15 Challenge subscale scores. Women who report emotional, somatic and cognitive, behavioral, and thought difficulties may struggle to perceive and embrace life's challenges as opportunities for growth. The emotional burden of their distress can lead to a more negative outlook, causing them to see challenges as overwhelming obstacles rather than as chances to develop resilience and coping skills.

Regression analyses showed that EID, STR, HLP, and SFD, which all measure emotional/personal difficulty, are most strongly related to and explanatory of resilience scores. This indicates that internalization, helplessness, self-doubt, and stress are predictive of low resilience. Therefore, higher levels of emotional difficulty may be manifested in sex-trafficked women with a lower level of resilience.

Limitations

Although this study provides useful information on the psychological difficulties of women who have experienced sex trafficking, it was markedly limited by the size of the sex trafficking sample. The small sample size also limits the generalizability of the findings to the sex-trafficked population in the United States. These obtained results should be considered preliminary data concerning the psychological profile of this victim group. Additionally, the small sample sizes in subgroup comparisons markedly reduced statistical power for the analyses of MMPI-3 mean score differences for subgroups, particularly the multivariate analyses.

An additional feature of the sex trafficking history of the sample may limit the generalizability of this study's findings. Specifically, the sex trafficking sample was predominantly composed of women who had exited sex trafficking for several years, raising the sample's mean length of time since exiting sex trafficking to 11 years. The psychological impact of sex trafficking may have been markedly reduced with the passage of time for this sample and may not fully reflect the distress level of women who recently emerged from sex trafficking. On the other hand, the current findings are useful in suggesting the lingering adverse effects of sex trafficking, an issue that warrants further study.

Contributions

The results of this study offer useful contributions to the field of personality assessment and the sex trafficking literature. This study is the first of its kind using the MMPI-3 to research this population. There is currently no published study on any version of the MMPI with the sex trafficking population. Also, the use of the recently released

MMPI-3 in this study enabled this examination of the psychological impacts of sex trafficking with a contemporary measure. This study provides preliminary data that may set the stage for further research with this victim group. Moreover, this study utilized a nationwide sample, increasing its generalizability.

The obtained patterns of profile elevations help illustrate women's difficulties after experiencing sex trafficking. By providing empirical data on the types of distress and difficulty experienced by this population, awareness of this crime can be raised, and advocacy efforts can be enhanced. Additionally, this study furnished evidence of greater psychological disturbance in some subgroups of sex-trafficked women. This finding suggests that greater focus should be placed on these individuals who were trafficked as a minor, experienced sexual or physical abuse, have a history of being involved in the child welfare system, have a psychiatric diagnosis, and have a legal or drug use history. Future studies could delve further into the psychological difficulties experienced by women who were involved in sex trafficking for shorter versus longer periods of time, and who have recently exited sex trafficking versus settled into a post-trafficking lifestyle. This also emphasizes the importance of addressing the distinct needs of these various subgroups to promote their successful adaptation to life beyond sex trafficking.

This study further highlighted the inverse relationship between psychological difficulties and resilience. Enhancing positive forms of resilience in this population may improve their psychological well-being, empower them, and reduce their vulnerability to re-trafficking.

Future Directions and Recommendations

Future research should be conducted with a larger sample of sex-trafficked women to increase the reliability and generalizability of findings. Further comparisons of subgroups in this population using a larger sample may provide more reliable findings regarding potential differences between subgroups of survivors of sex trafficking. In addition, evaluating the effects of the duration of sex trafficking and the duration since exiting sex trafficking in smaller, progressive time periods may offer informative findings about the long-term consequences of sex trafficking. Finally, it is noted that the current study used the DRS-15, which is a short version of the 45-item DRS scale (Bartone et al., 1989) and found robust findings based on it, which suggests that the short version captures resilience appropriately, as the developers of the short version described. Nonetheless, it would be worthwhile in future studies to examine if the longer versions of the DRS would produce comparable results. Another useful research direction would be to conduct a longitudinal study that evaluates long-term effects and future adaptations subsequent to the sex trafficking experience, and to study the psychological adjustment status of sex-trafficked women who have subsequently become leaders and advocates for survivors of sex trafficking.

References

Abas, M., Ostrovschi, N. V., Prince, M., Gorceag, V. I., Trigub, C., & Oram, S. (2013). Risk factors for mental disorders in women survivors of human trafficking: A historical cohort study. *BMC Psychiatry*, *13*, 204. https://doi.org/10.1186/1471-244X-13-204

Abdulraheem, S., & Oladipo, A. R. (2010). Trafficking in women and children: A hidden health and social problem in Nigeria. *International Journal of Sociology and Anthropology*, *2*(3), 034-039.

Ahrens, K. R., Katon, W., McCarty, C., Richardson, L. P., & Courtney, M. E. (2012). Association between childhood sexual abuse and transactional sex in youth aging out of foster care. *Child Abuse & Neglect*, *36*(1), 75-80. https://doi.org/10.1016/j.chiabu.2011.07.009

Alexander, P. C., Moore, S., & Alexander, E. R. (1991). What is transmitted in the intergenerational transmission of violence? *Journal of Marriage and the Family, 53*, 657–668. https://doi.org/10.2307/352741

American Psychological Association. (2014). *Report of the task force on trafficking of women and girls.* APA. https://www.apa.org/pi/women/programs/trafficking/report.pdf

Bartone, P.T. (1995). *A short hardiness scale*. Paper presented at the American Psychological Society Annual Convention, New York.

Bartone, P.T. (2007). Test-retest reliability of the Dispositional Resilience Scale-15, a brief hardiness scale. *Psychological Reports, 101*, 943-944. https://doi.org/10.2466/pr0.101.3.943-944

Bartone, P. T., Ursano, R. J., Wright, K. M., & Ingraham, L. H. (1989). The impact of a military air disaster on the health of assistance workers. *Journal of Nervous and Mental Disease, 177*(6), 317-328. DOI: 10.1097/00005053-198906000-00001

Beck, A. T., Steer, R. A., & Garbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review, 8*, 77–100.

Ben-Porath, Y.S. (2012). *Interpreting the MMPI-2-RF.* University of Minnesota Press.

Ben-Porath, Y.S., & Forbey, J.D. (2003). *Non-gendered norms for the MMPI-2*. University of Minnesota Press.

Ben-Porath, Y.S. & Tellegen, A. (2020a). *Minnesota Multiphasic Personality Inventory-3*: *Manual for administration, scoring, and interpretation.* University of Minnesota Press.

Ben-Porath, Y.S. & Tellegen, A. (2020b). *Minnesota Multiphasic Personality Inventory-3*: *Technical Manual.* University of Minnesota Press.

Ben-Porath, Y. S., & Tellegen, A. (2008). *MMPI-2 Restructured Form: Manual for administration, scoring, and interpretation.* University of Minnesota Press.

Briere, J., & Elliott, D. M. (1997). Psychological assessment of interpersonal victimization effects in adults and children. *Psychotherapy: Theory, Research, Practice, Training*, *34*(4), 353-364. https://doi.org/10.1037/h0087848

Brown, Q. L., Cavanaugh, C. E., Penniman, T. V., & Latimer, W. W. (2012). The impact of homelessness on recent sex trade among pregnant women in drug treatment. *Journal of Substance Use*, *17*(3), 287-293. https://doi.org/10.3109/14659891.2011.583309

Bonano, G. A. (2004). Loss, trauma and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist, 59*(1), 20–28. https://doi-org.portal.lib.fit.edu/10.1037/0003-066X.59.1.20

Butcher, J.N. (2010). Clinical personality assessment: History, evolution, contemporary models, and practical applications. In J.N. Butcher (Ed.), *Oxford handbook of personality assessment* (pp. 5-21). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780195366877.013.0001

Butcher, J.N., Dahlstrom, W.G., Graham, J.R., Tellegen, A., & Kaemmer, B. (1989). *Minnesota Multiphasic Personality Inventory (MMPI-2): Manual for administration and scoring*. University of Minnesota Press.

Butcher, J.N., Graham, J.R., Ben-Porath, Y.S., Tellegen, A., Dahlstrom, W.G., & Kaemmer, B. (2001). *MMPI-2: Manual for administration and scoring* (Rev. ed.). University of Minnesota Press.

Butcher, J.N., Graham, J.R., Williams, C.L., & Ben-Porath, Y.S. (1990). *Development and use of the MMPI-2 Content Scales*. University of Minnesota Press.

Carlson, E. B., & Armstrong, J. (1994). The diagnosis and assessment of dissociative disorders. In S. J. Lynn & J. W. Rhue (Eds.), *Dissociation: Clinical and theoretical perspectives* (pp. 159–174). New York: Guilford Press.

Clawson, H. J., & Dutch, N. (2008). Identifying victims of human trafficking: Inherent challenges and promising strategies from the field. *Washington, DC: US Department of Health and Human Services (HHS)*, *3*.

Cofer, C.N., Chance, J.E., & Judson, A.J. (1949). A study of malingering on the Minnesota Multiphasic Personality Inventory. *The Journal of Psychology, 27*(2), 491-499. https://doi.org/10.1080/00223980.1949.9917439

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

Cole, H. (2009). Human trafficking: Implications for the role of the advanced practice forensic nurse. *Journal of the American Psychiatric Nurses Association*, *14*(6), 462-470. https://doi.org/10.1177/1078390308325763

Colligan, R.C. (1985). History and development of the MMPI. *Psychiatric Annals, 15*(9), 524-533.

Crawford, M. (2017). International sex trafficking. *Women & Therapy*, *40*(1-2), 101-122. https://doi.org/10.1080/02703149.2016.1206784.

Crawford, M. (2018). International sex trafficking. In N. M. Sidun & D. L. Hume (Eds.), *A feminist perspective on human trafficking of women and girls* (pp. 95-116). Routledge.

De Schampheleire, D. (1990). MMPI characteristics of professional prostitutes: A cross-cultural replication. *Journal of Personality Assessment*, *54*(1-2), 343-350. DOI: 10.1080/00223891.1990.9673998

Derogatis, L. R. (1993). Brief Symptom Inventory (BSI): Administration, scoring, and procedures manual. Minneapolis, MN: NCS Pearson.

Derogatis, L. R. (1983). *The SCL-90 manual II: Administration, scoring, and procedures.* Towson, MD: Clinical Psychometric Research.

Duckworth, J. C., & Anderson, W. P. (1995). *MMPI & MMPI-2: Interpretation manual for counselors and clinicians* (4th ed.). Accelerated Development.

Elhai, J. D., Flitter, J. M. K., Gold, S. N., & Sellers, A. H. (2001a). Identifying subtypes of women survivors of childhood sexual abuse: An MMPI-2 cluster analysis. *Journal of Traumatic Stress*, *14*(1), 157-175. https://doi.org/10.1023/A:1007847901572

Elhai, J.D., Frueh, B.C., Gold, P.B., Gold, S.N., & Hamner, M.B. (2000). Clinical presentations of posttraumatic stress disorder across trauma populations: A comparison of MMPI-2 profiles of combat veterans and adult survivors of child sexual abuse. *The Journal of Nervous and Mental Disease, 188*(10), 708–713. DOI: 10.1097/00005053-200010000-00010

Elhai, J. D., Gold, S. N., Mateus, L. F., & Astaphan, T. A. (2001b). Scale 8 elevations on the MMPI-2 among women survivors of childhood sexual abuse: Evaluating posttraumatic stress, depression, and dissociation as predictors. *Journal of Family Violence, 16*(1), 47-57. https://doi.org/10.1023/A:1026576425986

Ennett, S. T., Bailey, S. L., & Federman, E. B. (1999). Social network characteristics associated with risky behaviors among runaway and homeless youth. *Journal of Health and Social Behavior*, *40*(1), 63-78. https://doi.org/10.2307/2676379

Exner Jr, J. E., Wylie, J., Laura, A., & Parrill, T. (1977). Some psychological characteristics of prostitutes. *Journal of Personality Assessment, 41*(5), 474-485. https://doi.org/10.1207/s15327752jpa4105_3

Farley, M. (2004). "Bad for the body, bad for the heart": Prostitution harms women even if legalized or decriminalized. *Violence Against Women*, *10*(10), 1087-1125. https://doi.org/10.1177/1077801204268607

Farley, M., Cotton, A., Lynne, J., Zumbeck, S., Spiwak, F., Reyes, M. E., Alvarez, D., & Sezgin, U. (2004). Prostitution and trafficking in nine countries: An update on violence and posttraumatic stress disorder. *Journal of Trauma Practice, 2*(3-4), 33-74. https://doi.org/10.1300/J189v02n03_03

Fedina, L., Williamson, C., & Perdue, T. (2019). Risk factors for domestic child sex trafficking in the United States. *Journal of Interpersonal Violence*, *34*(13), 2653–2673. https://doi.org/10.1177/0886260516662306

Flitter, J. M. K., Elhai, J. D., & Gold, S. N. (2003). MMPI‐2 F scale elevations in adult victims of child sexual abuse. *Journal of Traumatic Stress: Official Publication of The International Society for Traumatic Stress Studies*, *16*(3), 269-274. https://doi.org/10.1023/A:1023700208696

Follette, W. C., Naugle, A. E., & Follette, V. M. (1997). MMPI-2 profiles of adult women with child sexual abuse histories: Cluster-analytic findings. *Journal of Consulting and Clinical Psychology*, *65*(5), 858-866. https://doi.org/10.1037/0022-006X.65.5.858

Friedman, A.F., Bolinskey, P.K., Levak, R.W., & Nichols, D.S. (2015). *Psychological assessment with the MMPI-2/MMPI-2-RF* (3rd ed.). New York: Routledge.

Gerassi, L. (2015). From exploitation to industry: Definitions, risks, and consequences of domestic sexual exploitation and sex work among women and girls. *Journal of Human Behavior in the Social Environment*, *25*(6), 591–605. https://doi.org/10.1080/10911359.2014.991055

Giannetti, R. A. (1994). *Quickview social history clinical version*. (2nd ed.) Minneapolis, MN: National Computer Systems.

Gottfried, E. D., Anestis, J. C., Dillon, K. H., & Carbonell, J. L. (2016). The associations between the Minnesota Multiphasic Personality Inventory-2-Restructured Form and self-reported physical and sexual abuse and posttraumatic symptoms in a sample of incarcerated women. *International Journal of Forensic Mental Health*, *15*(4), 323-332. https://doi.org/10.1080/14999013.2016.1228088

Graham, J. R. (1990). *MMPI-2: Assessing personality and psychopathology*. Oxford University Press.

Greene, R.L. (2011). *The MMPI-2/MMPI-2-RF: An interpretative manual.* (3rd ed.). Boston, MA; Allyn & Bacon.

Gregg, G. R., & Parks, E. D. (1995). Selected Minnesota Multiphasic Personality Inventory-2 Scales for identifying women with a history of sexual abuse. *Journal of Nervous and Mental Disease, 183*(1), 53-56. https://doi.org/10.1097/00005053-199501000-00012

Griffith, P. L., Myers, R. W., Cusick, G. M., & Tankersley, M. J. (1997). MMPI‐2 profiles of women differing in sexual abuse history and sexual orientation. *Journal of Clinical Psychology*, *53*(8), 791-800. https://doi.org/10.1002/(SICI)1097-4679(199712)53:8<791::AID-JCLP2>3.0.CO;2-J

Harkness, A.R., McNulty, J.L., & Ben-Porath, Y.S. (1995). The personality psychopathology five (PSY-5): Constructs and MMPI-2 scales. *Psychological Assessment, 7*(1), 104-114. https://doi.org/10.1037/1040-3590.7.1.104

Harris, R. E., & Lingoes, J. C. (1955). Subscales for the Minnesota Multiphasic Personality Inventory: An aid to profile interpretation. (Mimeographed materials.) San Francisco, CA: University of California, Langley Porter Neuropsychiatric Institute.

Hathaway, S.R., & McKinley, J.C. (1989). *MMPI-2: Minnesota Multiphasic Personality Inventory-2: Manual for Administration and Scoring*. University of Minnesota Press.

Horowitz, M., Wilner, N., & Alvarez, W. (1979). Impact of event scale: A measure of subjective stress. *Psychosomatic Medicine, 41*, 209–218.

Hossain, M., Zimmerman, C., Abas, M., Light, M., & Watts, C. (2010). The relationship of trauma to mental disorders among trafficked and sexually exploited girls and women. *American Journal of Public Health, 100*(12), 2442-2449. https://doi.org/10.2105/AJPH.2009.173229

International Labour Organization. (2017). *Global estimates of modern slavery: Forced labour and forced marriage*. International Labour Office. https://www.ilo.org/global/publications/books/WCMS_575479/lang--en/index.htm

International Labour Organization. (2014). *Profits and poverty: The economics of forced labour.* International Labour Office. https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---declaration/documents/publication/wcms_243391.pdf

Johnson, T. P., Aschkenasy, J. R., Herbers, M. R., & Gillenwater, S. A. (1996). Self-reported risk factors for AIDS among homeless youth. *AIDS Education and Prevention: Official Publication of the International Society for AIDS Education, 8*(4), 308-322.

Kirz, J. L., Drescher, K. D., Klein, J. L., Gusman, F. D., & Schwartz, M. F. (2001). MMPI-2 assessment of differential post-traumatic stress disorder patterns in combat veterans and sexual assault victims. *Journal of Interpersonal Violence*, *16*(7), 619-639. https://doi.org/10.1177/088626001016007001

Kometiani, M. K. (2019). Introduction to the destructive pandemic of sex trafficking. In M. K. Kometiani (Ed.), *Art Therapy Treatment with Sex Trafficking Survivors* (pp. 3–16). Routledge. https://doi.org/10.4324/9780429469671-1

Kurtz, S. P., Surratt, H. L., Kiley, M. C., & Inciardi, J. A. (2005). Barriers to health and social services for street-based sex workers. *Journal of Health Care for the Poor and Underserved*, *16*(2), 345-361. https://doi.org/10.1353/hpu.2005.0038

Lederer, L. J., & Wetzel, C. A. (2014). The health consequences of sex trafficking and their implications for identifying victims in healthcare facilities. *Annals of Health Law*, *23*(1), 61-91.

Lutnick, A. (2016). *Domestic minor sex trafficking: Beyond victims and villains*. Columbia University Press.

MacMillan, H. L., & Wathen, C. N. (2014). Children's exposure to intimate partner violence. *Child and Adolescent Psychiatric Clinics*, *23*(2), 295-308. https://doi.org/10.1016/j.chc.2013.12.008

McClain, N. M., & Garrity, S. E. (2011). Sex trafficking and the exploitation of adolescents. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, *40*(2), 243-252. https://doi.org/10.1111/j.1552-6909.2011.01221.x

McManus, E. S., Cuccurullo, L. A. J., Uddo, M., & Franklin, C. L. (2018). MMPI-2-RF characteristics of veterans seeking treatment for military sexual trauma. *Psychological Assessment*, *30*(4), 561-566. https://doi.org/10.1037/pas0000527

Miller-Perrin, C., & Wurtele, S. K. (2017). Sex trafficking and the commercial sexual exploitation of children. *Women & Therapy*, *40*(1–2), 123–151. https://doi.org/10.1080/02703149.2016.1210963

Mollica, R.F., Caspi-Yavin, Y., Lavelle, J., Tor, S., Chan, S., Pham, T., Ryan, A., de Marneffe, D. (1996). *Harvard trauma questionnaire (HTQ) manual: Cambodian, Laotian, and Vietnam versions.* Boston, MA: Harvard Program in Refugee Trauma, 1991.

Moos, R. H., & Moos, B. S. (1994). *Social Climate Scale: The Family Environment Scale manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.

Muftić, L. R., & Finn, M. A. (2013). Health outcomes among women trafficked for sex in the United States: A closer look. *Journal of Interpersonal Violence*, *28*(9), 1859-1885. https://doi.org/10.1177/0886260512469102

O'Brien, J. E., White, K., & Rizo, C. F. (2017). Domestic minor sex trafficking among child welfare–involved youth: An exploratory study of correlates. *Child Maltreatment*, *22*(3), 265-274. https://doi.org/10.1177/1077559517709995

Oram, S., Khondoker, M., Abas, M., Broadbent, M., & Howard, L. M. (2015). Characteristics of trafficked adults and children with severe mental illness: A historical cohort study. *The Lancet Psychiatry*, *2*(12), 1084–1091. https://doi.org/10.1016/S2215-0366(15)00290-4

Oram, S., Ostrovschi, N. V., Gorceag, V. I., Hotineanu, M. A., Gorceag, L., Trigub, C., & Abas, M. (2012). Physical health symptoms reported by trafficked women receiving post-trafficking support in Moldova: Prevalence, severity and associated factors. *BMC Women's Health*, *12*(1), 1-9. DOI: 10.1186/1472-6874-12-20

Polaris Project. (2019). *US National Human Trafficking Hotline*. https://polarisproject.org/wp-content/uploads/2019/09/Polaris-2019-US-National-Human-Trafficking-Hotline-Data-Report.pdf

Polaris Project. (2020). *Human Trafficking Trends in 2020*. https://polarisproject.org/wp-content/uploads/2022/01/Human-Trafficking-Trends-in-2020-by-Polaris.pdf

Polaris Project. (2021). *Polaris Analysis of 2021 Data from the National Human Trafficking Hotline*. https://polarisproject.org/wp-content/uploads/2020/07/Polaris-Analysis-of-2021-Data-from-the-National-Human-Trafficking-Hotline.pdf

Reid, J. A. (2011). An exploratory model of girls' vulnerability to commercial sexual exploitation in prostitution. *Child Maltreatment, 16*(2), 146–157. https://doi.org/10.1177/1077559511404700

Reid, J. A., Baglivio, M. T., Piquero, A. R., Greenwald, M. A., & Epps, N. (2017). Human trafficking of minor and childhood adversity in Florida. *American Journal of Public Health, 107*(2), 306–311. https://doi.org/10.2105/AJPH.2016.303564

Reid, J. A., Huard, J., & Haskell, R. A. (2015). Family-facilitated juvenile sex trafficking. *Journal of Crime and Justice*, *38*(3), 361-376. https://doi.org/10.1080/0735648X.2014.967965

Reid J. A., Richards T. N., & Kulig T. C. (2020). Human trafficking and intimate partner violence. In R. Geffner, J. W. White, L. K. Hamberger, A. Rosenbaum, V. Vaughan-Eden, & V. I. Vieth (Eds.), *Handbook of interpersonal violence and abuse across the lifespan* (pp. 1-22). Springer International Publishing. https://doi.org/10.1007/978-3-319-89999-2_159

Scott, R. L., & Stone, D. A. (1986a). MMPI measures of psychological disturbance in adolescent and adult victims of father-daughter incest. *Journal of Clinical Psychology*, *42*(2), 251-259. https://doi.org/10.1002/1097-4679(198603)42:2<251::AID-JCLP2270420205>3.0.CO;2-U

Scott, R. L., & Stone, D. A. (1986b). MMPI profile constellations in incest families. *Journal of Consulting and Clinical Psychology*, *54*(3), 364. https://doi.org/10.1037/0022-006X.54.3.364

Shared Hope International. (2017). *What is sex trafficking?* https://sharedhope.org/the-problem/what-is-sex-trafficking/

Shaw, J. A., Lewis, J. E., Chitiva, H. A., & Pangilinan, A. R. (2017). Adolescent victims of commercial sexual exploitation versus sexually abused adolescents. *Journal of the American Academy of Psychiatry and the Law*, *45*(3), 325-331.

Sidun, N. M., & Flores, Y. G. (2020). Human trafficking: Vulnerabilities, human rights violations, and psychological consequences. In N. S. Rubin & R. L. Flores (Eds.), *The Cambridge Handbook of Psychology and Human Rights* (1st ed., pp. 273–287). Cambridge University Press. https://doi.org/10.1017/9781108348607.019

Southwick, S. M., & Charney, D. P. (2012). *Resilience: The science of mastering life's great challenges*. Cambridge University Press.

Stanley, N., Oram, S., Jakobowitz, S., Westwood, J., Borschmann, R., Zimmerman, C., & Howard, L. M. (2016). The health needs and healthcare experiences of young people trafficked into the UK. *Child Abuse & Neglect*, *59*, 100-110. https://doi.org/10.1016/j.chiabu.2016.08.001

Stark, C., & Hodgson, C. (2004). Sister oppressions: A comparison of wife battering and prostitution. *Journal of Trauma Practice, 2*(3–4), 16–32. https://doi.org/10.1300/J189v02n03_02

Stoklosa, H., Marti MacGibbon, C.I., & Stoklosa, J. (2017). Human trafficking, mental illness, and addiction: Avoiding diagnostic overshadowing. *AMA Journal of Ethics*, *19*(1), 23–24. https://doi.org/10.1001/journalofethics.2017.19.1.ecas3-1701

Stoklosa, H. (2016). *Anti-Trafficking Policy Developments Impacting Health Care Providers*. https://www.acf.hhs.gov/archive/otip/training-technical-assistance/resource/stoklosa

Stoltz, J. A. M., Shannon, K., Kerr, T., Zhang, R., Montaner, J. S., & Wood, E. (2007). Associations between childhood maltreatment and sex work in a cohort of drug-using youth. *Social Science & Medicine*, *65*(6), 1214–1221. https://doi.org/10.1016/j.socscimed.2007.05.005

The National Center for Missing and Exploited Children. (2022). *Child sex trafficking*. http://www.missingkids.org/theissues/trafficking.html.

Trasatti, M. A., & Miller, Z. A. (2019). Human trafficking: How businesses can work to combat the modern slavery epidemic. *Risk Management*, *66*(8), 20-25.

Tsai, J., Harpaz-Rotem, S., Pietrzak, R. H., & Southwick, S. M. (2017). Trauma, resiliency and post-traumatic growth. In S. M. Gold (Ed.), *APA Handbook of Trauma Psychology: Trauma Practice, Vol. 2* (pp. 89–113). American Psychological Association. https://doi.org/10.1037/0000020-005

Tsai, M., Feldman-Summers, S., & Edgar, M. (1979). Childhood molestation: Variables related to differential impacts on psychosexual functioning in adult women. *Journal of Abnormal Psychology*, *88*(4), 407. https://doi.org/10.1037/0021-843X.88.4.407

Tyler, K. A., Whitbeck, L. B., Hoyt, D. R., & Cauce, A. M. (2004). Risk factors for sexual victimization among male and female homeless and runaway youth. *Journal of Interpersonal Violence*, *19*(5), 503–520. https://doi.org/10.1177/0886260504262961

Ugarte, M. B., Zarate, L., & Farley, M. (2004). Prostitution and trafficking of women and children from Mexico to the United States. *Journal of Trauma Practice*, *2*(3-4), 147-165. https://doi.org/10.1300/J189v02n03_08

United Nations (UN). (2000). *Protocol to prevent, suppress and punish trafficking in persons, especially women and children, supplementing the United Nations convention against transnational organized crime*. https://www.ohchr.org/en/instruments-mechanisms/instruments/protocol-prevent-suppress-and-punish-trafficking-persons

United Nations Office on Drugs and Crime. (2018). *Global report on trafficking in persons 2018*. United Nations. www.unodc.org/documents/data-and-analysis/glotip/2018/GLOTiP_2018_BOOK_web_small.pdf

United States Department of State. (2010). *Trafficking in persons report, 2010*. Washington, DC: U.S. Government Printing Office. https://2009-2017.state.gov/documents/organization/142979.pdf

United States Department of State. (2017). *Trafficking in persons report, 2017*. Washington, DC: U.S. Government Printing Office. https://www.state.gov/wp-content/uploads/2019/02/271339.pdf

United States Department of State. (2019). *Trafficking in persons report, 2019*. Washington, DC: U.S. Government Printing Office. https://www.state.gov/wp-content/uploads/2019/06/2019Trafficking-in-Persons-Report.pdf

United States Department of State. (2021). *Trafficking in persons report, 2021.* Washington, DC: U.S. Government Printing Office. https://www.state.gov/wp-content/uploads/2021/09/TIPR-GPA-upload-07222021.pdf

Walker, K., & Quraishi, F. (2014). From abused and neglected to abused and exploited: The intersection of the child welfare system with the commercial sexual exploitation of children. *National Center for Youth Law*.

Whitfield, C. L., Anda, R. F., Dube, S. R., & Felitti, V. J. (2003). Violent childhood experiences and the risk of intimate partner violence in adults: Assessment in a large health maintenance organization. *Journal of Interpersonal Violence, 18*(2), 166–185. https://doi.org/10.1177/0886260502238733

Wiggins, J.S. (1959). Interrelationships among MMPI measures of dissimulation under standard and social desirability instructions. *Journal of Consulting Psychology, 23*(5), 419-427. https://doi.org/10.1037/h0047823

Wiggins, J. S. (1966). Substantive dimensions of self-report in the MMPI item pool. Psychological Monographs, 80(22, Whole No. 630).

Willis, B. M., & Levy, B. S. (2002). Child prostitution: Global health burden, research needs, and interventions. *The Lancet*, *359*(9315), 1417-1422.

Zimmerman, C., Hossain, M., Yun, K., Gajdadziev, V., Guzun, N., Tchomarova, M., Ciarrocchi, R. A., Johansson, A., Kefurtova, A., Scodanibbio, S., Motus, M. N., Roche, B., Morison, L., & Watts, C. (2008). The health of trafficked women: A survey of women entering posttrafficking services in Europe. *American Journal of Public Health, 98*(1), 55–59. https://doi.org/10.2105/AJPH.2006.108357

Appendix A: Participant Informed Consent Form

Purpose of the study:
This study is being conducted by Edleen De Jesus-Sanchez, M.S., a clinical psychology doctoral student at the Florida Institute of Technology, under the supervision of Dr. Radhika Krishnamurthy, Psy.D., ABAP. You are being asked to participate in this study of personality characteristics and psychological difficulties in adult women using a clinical assessment tool – the Minnesota Multiphasic Personality Inventory-3. Your data will be compared to data of other adult women as part of this study.

Procedures:
You will be asked to complete a short demographic questionnaire upon agreeing to participate in this study. Next, you will complete the MMPI-3, a self-report personality questionnaire, and the DRS-15, a self-report measure of resilience. The total time of participation in this study will be approximately 40-50 minutes. After the completion of the questionnaires, you will receive a $20 gift card in appreciation of your time.

Voluntary Participation and Potential Risks:
There are no expected risks or discomforts expected as a result of participating in this study. Participation is entirely voluntary, and you have the right to withdraw your participation from the study at any time.

Confidentiality:
All of your response records and data sources will be assigned a participant identification number in place of your personal identifying information in order to maintain your anonymity and confidentiality in this study. Your name will not be used in any part of this study. This informed consent form, which requires your signature, will be stored separately from all other data sources to ensure confidentiality.

How Data Will Be Used:
The results of this study will solely be used for research purposes. Participants will not receive individual feedback regarding their test results, and these results will not be shared with anyone else. The research findings may be presented at a local and/or national conference or in a professional psychology journal.

Contact information:
Should you have any questions or concerns about this study, please contact Edleen De Jesus-Sanchez at edejesussanc2020@my.fit.edu, or the research advisor for the study Dr. Radhika Krishnamurthy at rkrishna@fit.edu. The Florida Institute of Technology Institutional Review Board's chair, Dr. Jignya Patel, may be contacted at FIT_IRB@fit.edu for verification of the study's approval.

By signing below:

1. You are affirming that you are 18+ years of age.
2. You acknowledge that you have read the information provided and agree to voluntary participation in this research.

Participant's Name: _____ Date: _____

Participant's Signature: _____ Date: _____

Appendix B: DRS-15 Questionnaire

1. Most of my life gets spent doing things that are meaningful
2. By working hard you can nearly always achieve your goals
3. I don't like to make changes in my regular activities
4. I feel that my life is somewhat empty of meaning
5. Changes in routine are interesting to me
6. How things go in my life depends on my own actions
7. I really look forward to my daily activities
8. I don't think there's much I can do to influence my own future
9. I enjoy the challenge when I have to do more than one thing at a time
10. Most days, life is really interesting and exciting for me
11. It bothers me when my daily routine gets interrupted
12. It is up to me to decide how the rest of my life will be
13. Life in general is boring for me
14. I like having a daily schedule that doesn't change very much
15. My choices make a real difference in how things turn out in the end

Appendix C: Participant Demographic Questionnaire

Participant #:

Age:

Ethnicity:

State of Residence:

Age of entry into sex trafficking:

Were you trafficked as a minor or as an adult?:
A. Minor (younger than 18)
B. Adult (18+)

Length of time involved in sex trafficking:

Length of time out of sex trafficking:

Were you involved in the child welfare system? (Yes/No):
If yes, what were the reasons?
If yes, for how long?

Did you have a trafficker? (Yes/No):
If yes, was that person: (Select all that apply)
A. A member of your family?
B. Someone you were in an intimate relationship with?
C. A friend?
D. A stranger?

Did you experience sexual abuse as a child or adolescent? (Yes/No)

Did you experience physical abuse as a child or adolescent? (Yes/No)

Do you have any prior or current mental health diagnoses? (Yes/No):
If yes, which diagnoses?

Have you received mental health services either currently or in the past? (Yes/No):

Any prior or current drug use? (Yes/No)
If yes, which substances?

Do you have a legal history? (Yes/No)
If yes, was it when you were:
A. A minor

B. An adult
C. Both

If yes, what were the charges?