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PSYCHIATRY | REVIEW ARTICLE

Mental health issues in survivors of sex trafficking

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Abstract: There are more than three million trafficked women, many of who are children. This population has been largely forgotten because the victims are geographically transitory and exist within an illegal framework. Research, often conducted using invalid techniques, suggests that most survivors of sex trafficking (i.e. those evaluated in shelters), have mental illness. The majority of survivors have depression, anxiety, posttraumatic stress disorder or a more severe diagnosis: Disorders of Extreme Stress (DESNOS). In addition to these diagnoses, many victims of sex trafficking also have secondary psychological issues such as alcohol and drug abuse plus concurrent medical illnesses, which add to the psychological burden that sex trafficked victims endure. Mental health interventions often focus on identifying potential victims in healthcare centers and public places such as shopping malls or at truck stops. The problem, however, is that once a sex trafficked person is rescued there are no prospective clinical trials to guide therapy; oftentimes by default, trauma-based cognitive behavioral therapy is used; such approaches may not be effective for those with DESNOS. Considering the number of women and children who have been victimized by sex trafficking, it is astonishing that so little is known about the natural history of mental health issues and almost nothing is known about how best to treat these victims.

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Keywords: human sex trafficking; children; mental health; social determinants of health

1. Introduction

There are approximately 3.3 million sex-trafficked persons in the world, nearly all of them women (ILO Global Estimate of Forced Labour: results & methodology/International Labour Office, Special Action Programme to Combat Forced Labour (SAP-FL), 2012). Although data from 61 countries

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PUBLIC INTEREST STATEMENT

Survivors of sex trafficking bare many scars of their exploitation; some are physical, many are mental. In this paper the current knowledge is reviewed regarding the mental health implications of sex trafficking. The causality, pathophysiology and current treatment options are discussed and suggestions are made to improve the mental health apparatus and research agenda for victims of sex trafficking.

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suggest that the ratio of women to girls (a girl being less than18 years of age) is 5:1, many agencies believe that child sex trafficking far exceeds one million children (United Nations Office on Drugs & Crime, 2009). The precise numbers of woman being trafficked for the purpose of sexual exploitation ("sex trafficked") is not accurately known because the activity is criminal in about 80% of countries and so the quality of information is poor. In this paper the implications of sex trafficking on mental health is examined, the limitations of current knowledge are explained and priorities for future research are identified.

2. Causes of mental health issues in sex trafficking

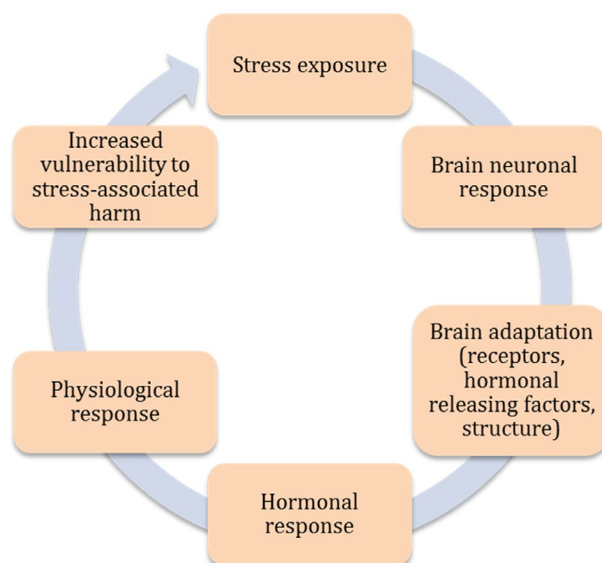
Sex trafficking and mental illness seem inevitably linked. However, understanding why sex trafficking is associated with mental illness helps better understand the depth of the victimization and how better to plan for comprehensive therapy.

2.1. Biological factors

The high levels of psychological stress associated with sexual exploitation are associated with neurochemical and structural changes in the brain; more so because many sex-trafficked victims are children. It can be conjectured that the levels of trauma associated with sex trafficking cause changes in hypothalamic nuclei gene expression and altered release of, pro-opiomelanocortin, corticotropin-releasing hormone, adrenocorticotropic and cortisol, a key stress hormone (Busso, McLaughlin, & Sheridan, 2016; Hewagalamulage, Clarke, Rao, & Henry, 2016; Mills, Carter, Rudd, Claxton, & O'Brien, 2016; Mogami et al., 2016; Osterlund et al., 2016; Provenzi et al., 2016). Intense psychological stress impacts other neuromodulator systems too such as opioids (Burke, Finn, McGuire, & Roche, 2016; Szklarczyk et al., 2016), GABA (Liu et al., 2016; Yang et al., 2016), norepinephrine (Thakare, Dhakane, & Patel, 2016; Wood, Valentino, & Wood, 2016) 5-HT (Demirdas, Naziroglu, & Unal, 2016; Kumar, Rajkumar, Lee, & Dawe, 2016; Li-Tempel et al., 2016) and even growth hormone (Aggarwal et al., 2014; Marina, Klose, Nordenbo, Liebach, & Feldt-Rasmussen, 2015; Savendahl, 2012). These factors, shown in animal models, subsequently impair how the body handles stress (Burke et al., 2016; Demirdas et al., 2016; Kumar et al., 2016; Li-Tempel et al., 2016; Szklarczyk et al., 2016).

The structure of the brain changes with trauma too. Environmental exposure directly affects neuronal formation and brain anatomy (Corr & Perkins, 2006; Windholz, 1987). Multiple neuroplasticity factors control brain remodeling in response to environmental change (Diaz Heijtz & Forssberg, 2015; Simchon Tenenbaum, Weizman, & Rehavi, 2015). Substantial stress is directly associated with neuroplasticity-associated changes in brain structure and function (McEwen, Gray, & Nasca, 2015; Vyas et al., 2016; Wilson, Grillo, Fadel, & Reagan, 2015). A vicious cycle exists (Figure 1) whereby

Figure 1. Cartoon to show relationship between chronic stress and changes in brain biology.



chronic stress impacts brain structure and function rendering the growing brain more vulnerable to the ill effects of abuse.

2.2. Genetic factors

Many sex trafficked victims, like many victims of violence, are from families with high prevalence of depression (Xia & Yao, 2015), schizophrenia (Chiapponi, Piras, Piras, Caltagirone, & Spalletta, 2016; Davis et al., 2016), alcoholism (Matošić, Marusic, Vidrih, Kovak-Mufic, & Cicin-Sain, 2016) and/or, substance/drug abuse (Yu & McClellan, 2016). No specific studies have been conducted on genetic linkages and mental health disorders in these disorders, however. Each of these disorders can be associated with genetic factors and so survivors of sex trafficking may be genetically predisposed to develop mental health issues (Ehlert, 2013; Serafini et al., 2015). Also, genetics factors influence how a person responds to stress and to the risk of developing Posttraumatic Stress Disorder (Lebois, Wolff, & Ressler, 2016). Epigenetic influences are *in utero* exposures that impact fetal development (Anacker, O'Donnell, & Meaney, 2014; Lutz, Almeida, Fiori, & Turecki, 2015; Provençal & Binder, 2015). Maternal alcohol (Gupta, Gupta, & Shirasaka, 2016) and illicit drug use (Antonelli, Pallares, Ceccatelli, & Spulber, 2016) and even *in utero* violence against the mother (Anacker et al., 2014; Lutz et al., 2015; Provençal & Binder, 2015) are examples of factors that can impair the mental status of the child. Thus both genetic and epigenetic factors may predispose sex-trafficked individuals to develop mental health issues.

2.3. Psychosocial factors

Sex trafficking victims are immersed in a social ecology that is linked with other deleterious factors such as crime, drug abuse and poverty (Banovic & Bjelajac, 2012). This circle of violence (Figure 2), independently has a negative impact on mental health (Diehl, Pillon, dos Santos, Rassool, & Laranjeira, 2016; Huston, Anglin, & Eckstein, 1996; Kimerling, Alvarez, Pavao, Kaminski, & Baumrind, 2007).

Figure 2. Social factors associated with mental illness in sex trafficking.

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3. Prevalence of mental health issues in sex trafficking

Research on the prevalence of mental health issues associated with sex trafficking focuses on survivors. There are no studies on the incidence of mental health issues in people actively being trafficked, because identifying new cases of mental illness while a person is being sexually exploited breaches the ethical obligation to intervene.

3.1. Prevalence data

Prevalence data are inconsistent in this population because of, (a) the different sex trafficked populations that have been studied, (b) the differing definitions of mental illness and (c) the variability in the quality of work. In one example, Abas et al. (2013) examined a historical cohort of adult sex trafficked survivors who had returned to Moldova after registering for assistance with an international migration agency. Out of 176 survivors, data from 120 women were examined. DSM-IV Criteria (Frances, Pincus, Widiger, Davis, & First, 1990) were used to categorize mental disorders. Fifty-four percent had mental illness as defined by the criteria; 36% had PTSD, 13% had depression without PTSD and 6% had another anxiety disorder. In contrast, Crawford examined a cohort of 80 Nepalese women aged 12–19 who were survivors of sex trafficking (Crawford & Kaufman, 2008). They identified, through detailed examination of case files, that somatic symptoms outweighed behavioral ones. In this study, somatic symptoms of headache, itching, social withdrawal, aggression, stomach pain, fatigue, altered behaviors towards males, pelvic pain and low motivation were the principal mental health sequelae of sex trafficking. The comparison of these two studies highlights common issues regarding mental health research in sex trafficking survivors.

Oram, Stöckl, Busza, Howard and Zimmerman (2012) collated data from four prevalence studies (Cwikel, Chudakov, Paikin, Agmon, & Belmaker, 2004; Hossain, Zimmerman, Abas, Light, & Watts, 2010; Ostrovschi et al., 2011; Tsutsumi, Izutsu, Poudyal, Kato, & Marui, 2008) of sex trafficked survivors. The methodologies included checklists, psychological scales, and clinical interviews. Overall, 78% of survivors experience clinical anxiety (range 48–98%); 52% depression (range 3–100%) and 37% posttraumatic stress disorder (range 8–77%). Beyond formal diagnoses of mental illnesses, survivors of sex-trafficking report many other symptoms (Ijadi-Maghsoodi, Cook, Barnert, Gaboian, & Bath, 2016; Shandro et al., 2016) such as feelings of fear and distrust, being trapped, hopelessness, shame, humiliation, a sense of continuous stress, anger, and irritability. Survivors also often report poor quality sleep, insomnia, and nightmares. Survivors of sex trafficking often feel socially stigmatized, whereby they cannot return to their homes and communities because they will be pre-identified as being sex workers. In these instances, sex trafficking survivors can report a sense of being re-victimized even after rescue (Ijadi-Maghsoodi et al., 2016).

Overall, the vast majority of survivors of sex trafficking have mental illness especially anxiety disorder, depression or, posttraumatic stress disorder. There are other mental health sequelae too such as poor sleep, social stigmatization and feelings such as those of hopelessness.

3.2. Physical illness secondary to mental trauma in sex trafficking survivors

There are physical consequences associated with mental illness in survivors of sex trafficking (Crawford & Kaufman, 2008; Cwikel et al., 2004; Ehlert, 2013; Hossain et al., 2010; Oram, Ostrovschi et al., 2012; Richards, 2014; Schaefer et al., 2015; Shandro et al., 2016; Zimmerman, Hossain, & Watts, 2011; Zimmerman et al., 2008). The skin and hair may show evidence of cigarette burns, attempts at self-harm, rashes, evidence of intravenous drug use, vitamin deficiency, bruising from physical abuse and infectious diseases such as tuberculosis or lice. The teeth need to be examined for dental caries and poor overall dental hygiene; methamphetamine and bulimia scar teeth too. Although survivors of sex trafficking can be malnourished, obesity may be present and this should not dissuade a clinician from concern. Gynecological issues include evidence of sexually transmitted diseases (STD's), cervical dysplasia, non-menstrual vaginal bleeding, vaginal pain, dysuria, dyspareunia, traumatic scaring and ovulatory failure. The cardiovascular system can be impacted by hypertension and ischemic disease. In addition, survivors of sex trafficking with mental illness may have concomitant chronic pain syndromes, dizziness, feinting and fibromyalgia. X-rays may show prior

abuse-related fractures and decreased bone density. Immune function may be impaired not only because of HIV but also because of malnutrition. Hepatitis B and C need to be screened for. Survivors of sex trafficking who are predisposed to asthma or diabetes are inadequately cared for.

3.3. Secondary social sequelae

Survivors of sex trafficking with mental illness may have attendant drug, cigarette and alcohol abuse (Chung & English, 2015; Davidson, Grigorenko, Boivin, Rapa, & Stein, 2015; Gibbons & Stoklosa, 2016). Rehabilitated survivors of sex trafficking are often stigmatized, prone to become victims of violence, pressured to not use barrier contraception (Decker, Mack, Barrows, & Silverman, 2009; Mantini, 2008) and are more likely to become involved in criminality (Diehl et al., 2016; English, 2015; Greenbaum, Dodd, & McCracken, 2015; Houston-Kolnik, Todd, & Wilson, 2016). In some communities survivors, who are viewed as tainted, are unable to marry (Rimal & Papadopoulos, 2016). These types of social issues need to be considered when providing mental health services to survivors.

4. Mental health treatment in survivors of sex trafficking

There are three principal areas of focus; (1) early detection of sex trafficked victims, (2) identification of the most effective mental health treatment and (3) organization of multi-disciplinary healthcare teams.

4.1. Early detection of sex trafficked victims so that they can be identified, protected and treated for mental health issues

The Polaris Project identified a list of risk factors that a person is at risk of being sex trafficked (Figure 3) (Committee opinion No. 507: Human trafficking, 2011; Helton, 2016; Shandro et al., 2016). Although, they are well accepted there are no published data on the criteria's positive predictive value (correctly rule-in disease) or negative predictive value (correctly rule out disease). Nonetheless these criteria have been used to help identify potential victims in number of settings such as with truck drivers, police and hoteliers (Institute of Medicine & National Research Council, 2014; Jana, Dey, Reza-Paul, & Steen, 2014; Roe-Sepowitz, Gallagher, Risinger, & Hickle, 2015). In the United States there is a national telephone hotline run by the National Human Trafficking Resource Center [https://traffickingresourcecenter.org] on 1–888-373–7888 where advice can be obtained.

Figure 3. Polaris Project (3). General indicators that a person may be at risk of being sex-trafficked.

- Age < 18 years old
- Multiple sexual partners
- Multiple sexually transmitted diseases
- Inappropriate attire [e.g. lingerie]
- Tattoos or branding
- Sexual abuse, genital trauma
- Lack of official identification
- Vague answers to questions
- Inconsistencies in story
- No eye contact
- No control of money [some one else controls]
- Malnourishment
- Signs of physical abuse:
    - burns
    - bruises
    - broken bones
- Signs of Depression or, Post Traumatic Stress Disorder
- Drug/alcohol addiction

Health care facilities are especially important for identifying potential victims of sex trafficking (Grace et al., 2014; Nuzzolese, 2014; Ross et al., 2015) because medical assistance is often necessary to keep a sexually exploited person working. Greenbaum et al. (2015) used cross-sectional emergency room data to identify six key questions to identify a person who is at risk of being sex-trafficked;

(1) Is there a previous history of drug and/or alcohol use?
(2) Has the youth ever run away from home?
(3) Has the youth ever been involved with law enforcement?
(4) Has the youth ever broken a bone, had traumatic loss of consciousness, or sustained a significant wound?
(5) Has the youth ever had a sexually transmitted infection?
(6) Does the youth have a history of sexual activity with more than 5 partners?

When the patient has four of more positive responses, the positive predictive value for being sexually exploited is, 88% and the negative predictive value, 88% (Greenbaum et al., 2015). There are other indicators in a healthcare facility that a person may be being sex trafficked. For example, sex trafficking victims are often accompanied by a female accomplice of the pimp called a, "Bottom Girl". This is to ensure that the she does not attempt escape; the Bottom Girl will control the money and papers of the victim. Also sex trafficked victims can be vulnerable to Stockholm syndrome when they identify romantically with their pimp (Chesnay, 2013).

If a healthcare provider identifies that a patient is being sex trafficked it is likely that the patient has mental illness. The following general recommendations facilitate the immediate interaction with the patient; (a) The patient needs to be separated from an accompanying person (e.g. Bottom Girl or, pimp), (b) it is important to talk directly to the victim, if necessary using an interpreter, (c) questions should be asked to ascertain whether the woman/girl is independent (e.g. has self control over her money and identity papers), (d) it is important to immediately assess the patient's mental status, particularly with risk for self-harm, in order to ascertain the urgency for intervention, (e) protective services and law enforcement should be contacted.

4.1.1. Short-term intervention

Once a victim has been identified, a mental health plan needs to be formulated. The communication style with the patient must be open, trustworthy, safe, reliable, confidential, consistent, reassuring, knowledgeable, and non-judgmental (Chesnay, 2013). Early mental health intervention is important as psychiatric issues can be life threatening (e.g. suicidal ideation). Underlying psychiatric disorders, alcohol and drug abuse need to be treated. In general, medications should be used only for specific psychiatric indications. Benzodiazepines are especially discouraged as they can exacerbate disassociation (Ratzer, Brink, Knudsen, & Elklit, 2014) although there have not been randomized pharmaceutical trials in this patient group. General health evaluation is necessary too including gynecological examinations and screening for sexually transmitted diseases (Oram, Ostrovschi et al., 2012). The legal (e.g. guardianship) and immigration status of the patient must be established; specific visas exist to protect sex trafficked persons. Social workers are critical to help identify resources and identify safe temporary housing most often in protected shelters or mental health facilities.

Health professionals treating survivors of sex trafficking can follow a general set of mental health principles (Chesnay, 2013). It is important to, (A) Acknowledge the trauma. (B) Explore the trauma at an acceptable pace to the survivor. (C) Explore the person's self-identity to avoid re-victimized nation and stigmatization. (D) Participate in the survivor setting new life goals and helping individual plan to meet these goals. (E) Set in place not only continued mental health support but also general health surveillance. (F) Encourage good quality sleep, physical activity and nutrition. (G) Help the patient reframe experiences to identify positive attributes of the individual and recognize their

accomplishments. (H) Establish support for life skills such as financial intelligence, healthy recreation and maintaining healthy relationships. Once the patient is stabilized medically, legally and socially, a longer-term treatment plan can be defined.

4.1.2. Long-term intervention

There are no clinical trials that identify the best modality of mental health treatment for survivors of sex trafficking; trauma-based cognitive behavioral therapy is one of the most commonly used treatment (Cohen, 2008; Keeshin & Strawn, 2014; Walter, Buckley, Simpson, & Chard, 2014). Trauma focused cognitive behavioral therapy uses 12–20 structured sessions to teach the patient coping skills, trauma narration, trauma processing, treatment consolidation and closure.

There is an important area of emerging research that suggests that PTSD (a concept originally developed to explain the complex mental health challenges of veterans returning from Vietnam) is inadequate for defining the chronic and repeated traumatic exposures that survivors of sex trafficking have experienced (van der Kolk, 2001). The conglomerate of symptoms that sex trafficked survivors experience may fit under a newer descriptor known as; Disorders of Extreme Stress (DESNOS) or Complex PTSD (Hyland et al., 2016; Karatzias et al., 2016; Sachser, Keller, & Goldbeck, 2016). This is important because this diagnosis impacts outcome (Ford & Kidd, 1998) and may be a consideration for designing effective treatments for survivors of sex trafficking. Extensive work has been conducted on how best to treat DESNOS (van der Kolk, 2001) but this knowledge has not been adapted and trialed in survivors of sex-trafficking.

A range of other supportive/alternative therapies have been used too (Recommendations to reduce psychological harm from traumatic events among children and adolescents, 2008); for example, art therapy (Wong, 2008), Narrative Exposure Therapy (Kangaslampi, Garoff, & Peltonen, 2015; Larsen, Wiltsey Stirman, Smith, & Resick, 2016), music therapy (Froehlich, 1984), equine therapy (del Rosario-Montejo, Molina-Rueda, Muñoz-Lasa, & Alguacil-Diego, 2015) and eye movement desensitization and reprocessing therapy (Acarturk et al., 2016; Nijdam & Olff, 2016). The latter, for example, is especially of interest in treating DESNOS (van der Kolk, 2001). Despite the conceptual attractiveness of many of these approaches there have not been any clinical trials of efficacy or effectiveness.

5. Healthcare organization to support victims of sex trafficking

Individual healthcare facilities need a plan to identify and manage victims of sex trafficking. It is important to, (a) establish and list key contacts with local police forces and other related agencies such as the FBI, INS and National Center for Missing and Exploited Children; (b) victims need to be guaranteed safety whilst in the healthcare facility and so physical security, surveillance cameras, and door locks need to be reviewed; (c) a protocol needs to be in place to establish the legal status of the victim; (d) a communications plan is required; for example, preprogramming telephones with emergency numbers and the number for the national hotline (888-373-7888), plus a communications policy needs to be established to cover communication with a victim's family and protect the victim from contact by pimps.

The mental/social care plan for survivors must be designed for long-term sustainability because recidivism rates ate high. Child welfare agencies are legally obliged under the Preventing Sex Trafficking and Strengthening Families Act, P.L. 113–183, (US Congress, 2014)

> To develop policies and procedures to identify, document, and determine appropriate services for children under the placement, care, or supervision of a child welfare agency and who are at risk of becoming sex trafficking victims or who are victims of sex trafficking.

Multidisciplinary teams are needed to include psychiatric, medical, law enforcement and social work professionals. For example, the mental health care of sex trafficked survivors is enhanced in states such as Minnesota that have Safe Harbor legislation; whereby children who are caught by law

enforcement engaged in prostitution cannot be charged with a related crime (Minnesota Department of Health, 2014). Lastly, many staff who work extensively with sex-trafficked survivors feel burned out and so plans are needed to support the psychological needs of healthcare staff (Kliner & Stroud, 2012).

6. Mental health issues in sex trafficking: Limitations to current knowledge

High quality research is important in building the case for policy change, the allocation of healthcare resources and the funding necessary to support the social services that sex-trafficked survivors need (Cary, Oram, Howard, Trevillion, & Byford, 2016). There are several reasons why research is so limited in understanding mental health issues associated with sex trafficking.

6.1. The concepts of sex trafficking are grossly oversimplified

Mental health issues in sex trafficked victims often are multiple; e.g. trauma *plus*, sexual abuse, physical abuse, kidnapping, social disadvantage, educational curtailment and drug abuse. Conceptualizing sex trafficking as an isolated issue oversimplifies a multi-layered problem.

6.2. Research is often conducted on unrepresentative samples

Mental health research includes only survivors of sex trafficking who are living in rescue centers, which is an unrepresentative sample. Also, research in this area is most often conducted by agencies with an inherent interest in the outcomes of the research (e.g. to gain funding).

6.3. Missing data

Many victims do not actually know their age, heritage or family details. The magnitude of the trauma often results in subjects being unable to complete the research protocol.

6.4. Many of the research tools have not been validated in sex trafficked victims (Cannon, Arcara, Graham, & Macy, 2016)

Sex trafficked victims may not be conversant in the language where the study is being conducted nor with cultural norms. As noted above, the multilayered nature of the trauma sex trafficked victims experience necessitates the need for correctly validated instruments.

6.5. Ethical issues

People who survive sex trafficking are already victims of coercion. Thus, obtaining informed consent is especially complex. When a health worker asks a survivor to participate in a research project, it is difficult to avoid a sense of implicit coercion.

6.6. Does research re-stigmatize victims?

The nature of research may be re-stigmatizing. For example, a consent form may have the title, “Mental health issues in sex trafficked victims.” This re-victimizes the survivor to identify herself in this fashion.

6.7. Low priority research area

Clinicaltrial.gov reports that there are currently 55,610 active clinical trial in Cancer and 9,505 trials in depression. There are two clinical trials in sex trafficking. By funding agencies consistently not supporting research in this area, the failure to gain useful knowledge and develop effective treatments is perpetuated.

6.8. Policy and impact

New policies to protect victims of sex trafficking have unknown impact.

7. Mental health issues in sex trafficking: Recommendations

Recommendation 1. *Techniques*. International standards on how mental illness is defined in these individuals are necessary. Valid techniques are needed to assess the allostatic load (psychological plus psychological stressors) that sex trafficked victims endure (McEwen & Wingfield, 2003).

Recommendation 2. *Natural history*. Better information is needed about the nature, causal factors and natural history of mental illness in survivors of sex-trafficking. The course of mental illness in sex-trafficked victims is unknown. Most survivors of sex trafficking have mental illness, which is associated with multiple exacerbating and perpetuating factors. Little is understood on how these affect the long-term outcomes of survivors of sex trafficking compared to other patients. Understanding long-term outcomes would help define the resources that are needed at rescue.

Recommendation 3. *Treatment*. Clinical trials are needed to understand how best to treat mental illness in sex trafficked victims.

Recommendation 4. *Research ethics.* In research on victims who are currently being exploited, there will need to be a declaration of intent to withdraw the research subject from sex trafficking. It is important to avoid, in the research process, re-stigmatizing a person as a victim of sex trafficking/prostitution. Caution is necessary to avoid coercing survivors to engage in consent.

Recommendation 5. *Funding.* There are more than three million sex trafficked persons; many of whom are young. Little is known about the psychological and physical burden they endure. Nothing is known about the best method of intervention. The size of the population and its youth justify allocating research resources in this domain.

Recommendation 6. *Health care systems research*. A guide that includes protocols and procedures is needed to enable health care systems to best help potential victims of sex trafficking who they encounter. We need to establish national data management systems that track the magnitude of the problem, resource management and the effectiveness of interventions.

8. Conclusion

Most of the three million women and girls who are currently being sex trafficked have mental illness. Considering the size of the problem and magnitude of the trauma so little is known about the cumulative misery these young people endure and what to do about it. That needs to change.

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