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**SEXUAL VIOLENCE**  
**Epidemiology, Treatment and Access to Health Care**

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**Karolinska  
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# SEXUAL VIOLENCE

## Epidemiology, Treatment and Access to Health Care

### THESIS FOR DOCTORAL DEGREE (Ph.D.)

By

**Gita Rajan**

The thesis will be defended in public at Karolinska Institutet, Alfred Nobels Allé 23, D2, Huddinge, Sweden, 22 June 2021, 9 am.

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*I dedicate this thesis to anyone who wants to use and develop the content of the thesis for the promotion of healing, gender equality and hope:*

The potential beauty offered by earth is poisoned by the unrighteous usage and rape of others and of the earth itself, a behavior so widely spread that it is threatening our very existence. Consciousness, compassion, and creative intelligence is needed if we are to remove these threats.

I believe that creative intelligence requires connectedness with self, others and earth, as well as with playfulness. Since human trauma disrupts connectedness as well as playfulness, healing is a necessity if we are to ward off the above-mentioned threats.

The focus of this thesis is on sexual violence, its health consequences and the possibilities to heal through good quality health care access. As the head of a research-oriented specialist clinic for victims of sexual violence and a survivor of child sexual abuse myself, I have seen and experienced how empathic and structured knowledge-based assessment and treatment can heal sexual traumatization.

I know good quality health care for victims of sexual violence can be made available. If we choose to.

I also know that sexual violence is not a demonic phenomenon, but a costly, deliberate egoistic human behavior. As such it can be eliminated. If we want to.

A handwritten signature in black ink, appearing to be 'G. B. J.' with a stylized flourish at the end.



## POPULAR SCIENCE SUMMARY OF THE THESIS

Sexual violence is a global public health problem of epidemic proportions due to its high prevalence and severe health consequences. Only in Sweden the estimated incidence of penetrative sexual violence is 45 000 per year, and penetrative sexual violence is only the tip of an iceberg of sexual violence.

The overarching aim of this thesis was to increase the understanding of

1. The burden of disease and non- emergency health care seeking patterns and needs after sexual violence.
2. The access to non-emergency health care for victims of sexual violence from a human rights-based approach (HRBA).

In conclusion, the burden of disease among victims of sexual violence was several-fold compared to non-victims, and HRBA to health care for victims of sexual violence in Sweden does not exist.

Although everyone can be exposed to sexual violence, the vast majority of victims are girls and women. The low access to good quality healthcare for victims of sexual violence means that there is no basic precondition for gender-equal health care in Sweden. Specialist clinics and treatment methods adapted to the needs of victims of sexual abuse are two key factors for change.

A gatekeeping model is proposed as a tool for identification of key factors impacting health care access for victims of sexual violence. In accordance with HRBA to health, it is suggested to be used not only for promotion of good quality health care access, but also to facilitate the process of accountability and to enable victims of sexual violence to claim their rights.

A new treatment method of PTSD after rape is also presented in the thesis.





## ABSTRACT

Sexual violence is recognized by the World Health Organization as a “... global public health problem of epidemic proportions, requiring urgent action” [1]. In Sweden, the estimated incidence of penetrative sexual violence is 45 000 per year [2-4] . Whilst anyone may be exposed to sexual violence, the vast majority of victims are girls and women. Access to good quality health care for victims of sexual violence is hence a prerequisite for gender-equal health care.

The overarching aim of this thesis is to increase the epidemiological knowledge about the health consequences of sexual violence, the access to good quality health care among victims of sexual violence in Sweden, and to identify key factors with the potential to increase the access to good quality health care for victims of sexual violence. More specifically to:

- 1) Quantify and compare comorbidities, number of visits and prescribed medicines among individuals with a recorded diagnosis of sexual violence compared to those without such a registration
- 2) Analyze patient and sexual violence characteristics, diagnoses and perceived access to good quality health care among patients at a specialist clinic for victims of sexual violence
- 3) Evaluate a one-session treatment method for posttraumatic stress disorder (PTSD) after penetrative sexual violence.

Three different data sources and five different study designs were used to cover the aims. Using register data from the Stockholm Regional Healthcare Data Warehouse (VAL), one cross sectional study, one case-control study and one cohort study were performed. Journal data from a non-emergency specialist clinic for victims of sexual violence were used for a descriptive study with the

construction of a tool for analysis of health care access for victims of sexual violence, and finally, self-rating data were used to analyze treatment outcomes in a randomized controlled treatment study.

The results from the register-based studies revealed high burdens of disease and different health care seeking patterns among individuals with a registration of sexual violence as compared with individuals without such a registration. For example, ORs > 19 for alcohol violence, and > 15 for psychotic disorders, were found for adults with a registration of sexual violence, as compared to adults without such a registration. ORs for suicide attempts among adolescent girls 1 year prior to the first registration of sexual violence in the journal record were 15.5 (7.9–30.5) and 26.4 (12.7–55.0) the year after the registration, as compared to same-aged girls from the same neighborhood without such a registration.

The descriptive data confirmed the high burden of disease and high risk for suicide attempts found in the register-based studies. The descriptive data also revealed large difficulties in the access to good quality health care: 82% of the patients had tried to get access to good health care prior to admission to the specialist clinic, but felt their needs had not been met. Furthermore, at the intake visit, 90% of the patients scored for PTSD or/and depression regardless of prior health care access. A two-dimensional gatekeeping model was constructed and proposed as a tool for evaluation of factors directly impacting health care access for victims of sexual violence. By facilitating accountability and enabling patients to claim their rights the gatekeeping model also promotes a human rights-based approach.

The self-rating data were collected from a pilot study ( $n=36$ ), where the method Lifespan Integration (LI) was modified (MLI) and tested as a one-session treatment of PTSD symptoms after rape. In the study, 72% of participants in the treatment arm no longer scored for PTSD at follow up, with an mean score

reduction of 50% on the Impact of Event Scale after the intervention, while the waiting list arm IES-scores were essentially unchanged.

No drop-out rates or adverse effects were reported and the results were stable at the six-month follow up.

In conclusion, the burden of disease is high and access to good quality health care is very limited for victims of sexual violence in Sweden. This violation of a universal human right hinders progression towards gender-equal health care access. Specialist clinics and treatment methods adapted to the needs of victims of sexual abuse are two key factors for change. The gatekeeping model for health care access and the MLI PTSD-protocol are promising and may be developed to increase access and lower costs for good quality healthcare for victims of sexual violence.



## LIST OF SCIENTIFIC PAPERS

**I.** Rajan G, Ljunggren G, Wändell P, Wahlström L, Svedin CG, Carlsson AC. Diagnoses of sexual violence and their common registered comorbidities in the total population of Stockholm. *J Epidemiol Community Health*. 2017 Jun;71(6):592-598. doi: 10.1136/jech-2016-208105. Epub 2017 Jan 11. PMID: 28077602.

**II.** Rajan G, Ljunggren G, Wändell P, Wahlström L, Svedin CG, Carlsson AC. Health care consumption among adolescent girls prior to diagnoses of sexual violence, a case-control study in the Stockholm Region. *Eur Child Adolesc Psychiatry*. 2020 Oct;29(10):1363-1369. doi: 10.1007/s00787-019-01445-y. Epub 2019 Nov 29. PMID: 31784822

**III.** Rajan G, Syding S, Ljunggren G, Wändell P, Wahlström L, Philips B, Svedin CG, Carlsson AC. Health care consumption and psychiatric diagnoses among adolescent girls 1 and 2 years after a first-time registered child sexual violence experience: a cohort study in the Stockholm Region. *Eur Child Adolesc Psychiatry*. 2020 Nov 1. doi: 10.1007/s00787-020-01670-w. Online ahead of print. PMID: 33130910.

**IV.** Rajan G, Wahlström L, Philips B, Wändell P, Wachtler C, Svedin CG, Carlsson AC. Delayed healthcare access among victims of sexual violence, understood through internal and external gatekeeping mechanisms. *Nord J Psychiatry*. 2021 Jan 11:1-8. doi: 10.1080/08039488.2020.1868573. Epub ahead of print. PMID: 33428517.

**V.** Rajan G, Wachtler C, Lee S, Wändell P, Philips B, Wahlström L, Svedin CG, Carlsson AC. A One-Session Treatment of PTSD After Single Sexual Assault Trauma. A Pilot Study of the WONSA MLI Project: A Randomized Controlled Trial. *J Interpers Violence*. 2020 Oct 21:886260520965973. doi: 10.1177/0886260520965973. Online ahead of print. PMID: 33084475.



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## LIST OF ABBREVIATIONS

ACE	Adverse Childhood Experiences
ANOVA	Analysis of Covariance
BPD	Borderline Personality Disorder
BRÅ	The Swedish National Council for Crime Prevention
CBT	Cognitive behavioral therapies
CEDAW	The Elimination of all Forms of Discrimination Against Women
CI	Confidence Interval
cPTSD	Complex Posttraumatic Stress Disorder
CSA	Child Sexual Abuse
DEVAW	Declaration on the Elimination of Violence Against Women
DSM	The Diagnostic and Statistical Manual of Mental Disorders
DTD	Developmental trauma disorder
EMDR	Eye Movement and Desensitization and Reprocessing therapy
NGO	Non-Governmental Organization
HRBA	Human Rights-Based Approach to Health
ICD	International Classification of Diseases
IES-R	Impact of Event Scale Revised
ITT	Intent to treat
LI	Lifespan Integration
MADRS-S	Montgomery Åsberg Depression Rating Scale – Self-rating
MLI	Modified Lifespan Integration
NGO	Non-Governmental Organization
OR	Odds Ratio
OSC	One-Stop Centre
PE	Prolonged Exposure
PTSD	Posttraumatic Stress Disorder
TF-CBT	Trauma Focused Cognitive Behavioral Therapies
UDHR	The Universal Declaration of Human Rights
UN	United Nation
VAL	Stockholm Regional Healthcare Data Warehouse
WHO	World Health Organization
WONSA	WONSA – World of No Sexual Violence



# 1 INTRODUCTION

Sexual violence is recognized by the World Health Organization as a “... global public health problem of epidemic proportions, requiring urgent action” [1]. It is a powerful negative health determinant [5-8] mainly affecting girls and women, hence constituting a gender equality problem [1, 9]. In 2003, WHO stated that “Multiple social, psychological, and biological factors determine the level of mental health of a person at any point of time... The clearest evidence is associated with sexual violence ... In most countries, however, there is a gap between the health care needs of victims of sexual violence and the existing level of health services provided” [10]. The European Council launched the The Council of Europe Convention on Protection of Children against Sexual Exploitation (The Lanzarote Convention, 2007) and The Council of Europe (CoE) Convention on Preventing and Combating Violence against Women and Domestic Violence (the Istanbul Convention, 2011). Through the Conventions, the member states are urged to take actions to ensure the access to good quality health care for victims of sexual violence [11, 12]. Sweden received extensive criticism on its compliance to the Istanbul Convention at its first review in 2019 [13]. In 2020 a Swedish report confirmed the criticized significant gap between health care needs and health care access for victims of sexual violence [14].

The estimated incidence of penetrative sexual violence (which is only the tip of an iceberg of different types of sexual violence) in Sweden is 45 000 per year [2-4], and the rates of re- and poly-victimization after exposure to sexual violence is high [15-19]. The lack of health care access in Sweden for victims of sexual violence is a violation of universal human rights, undermining the nation’s efforts towards gender-equal health care access.

In order to increase the health care access for victims of sexual violence, it is important to understand how the burden of disease and health care needs among sexual violence victims in Sweden are reflected within the present health care

system, as well as to identify key factors that may hinder, or facilitate health care access for victims of sexual violence.

## **1.1 CONCEPTS AND TERMINOLOGY**

### **1.1.1 Sexual violence**

Sexual violence includes a wide range of violations of sexual integrity with different impacts on health, but with no international classification available for health care use [6, 20, 21]. There are however documented sexual violence characteristics influencing injury development as reflected by the prevalence of mental health problems and diagnoses among victims of sexual violence [6, 22, 23]. For example, low age at onset increases the risk to development of Borderline Personality Disorder (BPD) [24], low age at onset, family relation to perpetrator and violence duration are all associated with dissociative disorders [25] and penetrative violence has been associated with high levels of PTSD, re-victimization and psychotic episodes [26, 27].

### **1.1.2 Adverse Childhood Experiences (ACEs)**

ACEs are defined as potentially traumatic events experienced during childhood (0-17 years) [28]. They include growing up with sexual, physical or psychological violence, neglect, domestic violence, substance abuse, mental health problems or separation from important family members due to suicide, separation or imprisonment [28]. ACEs are common: 20% of a normal population are estimated to have experienced three or more ACEs. The risk for mental and somatic health problems increases exponentially with the number of ACEs experienced [29].

### **1.1.3 Consequences of sexual violence**

The consequences of sexual violence may affect many arenas of life. The One-Stop Centre (OSC) is a holistic person-centered care model (based on the experience from the Panzi Hospital in eastern Democratic Republic of Congo's work with 48,482 women exposed to sexual violence) [30]. The model revolves around four areas (medical, psychosocial, economical and legal), all affected by the exposure of sexual violence in such a severe way that the victim's ability to exercise their human rights are hindered. While recognizing the importance of all these areas for the restoration of health after sexual violence, the focus of this thesis is on the medical area, and more specifically on the mental health consequences.

### **1.1.4 Etiology**

In a medical context, the Greek word etiology defines the study of cause and the origin of cause, to the development of symptoms and diseases.

## **1.2 PREVALENCE AND HEALTH CONSEQUENCES OF SEXUAL VIOLENCE**

### **1.2.1 Child Sexual Violence (CSA)**

In a meta-analysis of 331 international studies (1980-2008, n= 9 911 748) the overall estimated prevalence of self-reported child sexual violence was shown to be 12.7% (girls 18.0% and boys 7.6%) [31] and estimates suggests that between 1% and 3% of US youths experience sexual violence in any given year but only about 10% of these were reported to the authorities [32-34]. In a Nordic literature review, including 26 studies between 1990 and 2014, the prevalence of child sexual violence (broadly defined) was found to vary between 3–23% for girls and 11–36% boys [35]. The prevalence rates for contact violence were 6–

30% for girls and 1–12% for boys, while 1.1–13.5% of the girls and 0.3–6.8% of the boys reported penetrating violence [35]. In Sweden the recurrent Swedish report “Youth, sex and internet in a changing world” has [36] self-reported penetrative violence experiences ranging between 9.2–13.5% among women and 3.0–5.5% among men aged 18 years. In another Swedish study 13% of 17-year-olds reported a prior year prevalence of sexual victimization, broadly defined, including verbal sexual harassment [32]. According to the Swedish National Council for Crime Prevention (BRÅ) approximately 3000 rapes of children are reported to the police each year in Sweden [37]. Yet, in the aforementioned report where child sexual violence (CSA) was studied, only about 10% of the sexual offense cases were reported to the police [36].

### **1.2.2 Adult Sexual Violence**

CSA increases the risk of adult sexual victimization [17, 19]. According to BRÅ approximately 4000 rapes of adults are reported to the police each year in Sweden, with an estimate of 80% of adult sexual victimization not being reported [37].

### **1.2.3 Health consequences of sexual violence**

The global documentation of negative health consequences in the aftermath of sexual violence in general and CSA in particular - including national and international reports, case-studies, self-report studies, questionnaire studies and reviews, and in recent years, register-based studies of electronic journal records - is massive, and an increase of virtually all psychiatric disorders has been established [7, 38]. CSA is one of the most common ACEs, and as such it is also associated with elevated risks for a variety of somatic diseases, including autoimmune diseases, cancer and coronary heart disease [20, 28, 39-41].

### **1.2.4 Treatment**

### **1.2.5 Etiology, symptoms and diagnoses in somatic and psychiatric health care**

In somatic health care tradition, the scientific work is deeply committed to understanding the pathways of pathology, as etiology is seen as essential for the development of interventions for both cure and for symptom reduction. In practice this means that two patients with the same symptoms (e.g. sore throat) may receive different diagnoses (e.g. tonsillitis or cancer) and accordingly different treatments and prognosis. The most widely diagnostic tool is the WHO international classification of diseases (ICD-11) [42].

In the mainstream psychiatric health care tradition, symptoms and clusters of symptoms have prevailed over etiology, and the diagnostic manual most widely used within the field of psychiatry, the Diagnostic and Statistical Manual of Mental Disorders (DSM)[43], can be described as a symptom check-list with no aim of identifying the etiology behind the symptoms [44]. However, etiology research has been performed, and one main finding is the life-long pathogenic power of exposure to reckless human behavior as well as to neglect. Allostatic overload, i.e. toxic stress is one of the mechanisms of action. The neurobiological, neuroendocrinological and epigenetic responses to toxic stress impact virtually all organ systems and functions in the human body, of which some are responsible for the development and maintenance of psychiatric diseases [45-52]. In addition to the emerging knowledge of toxic stress, recent studies have confirmed the impact of guilt, shame and disgust – all common emotions after sexual violence - on psychiatric symptom development and treatment outcomes [53-58].

### **1.2.6 Psychiatric symptoms and treatment development**

The lack of etiological understanding of psychiatric symptoms has cultivated a hotbed of negative presumptions projected to the symptom carriers, i.e. the patients. As a result, from time to time, the primary intervention has been suppressing symptoms rather than actually treating individuals with psychiatric symptoms [59]. During the last decades cognitive behavioral therapeutic methods [60] and medication with selective serotonin reuptake inhibitors (SSRIs) have become golden standard for treatment of PTSD in Sweden [61]. However, 40-60% of the patients do not respond to SSRI [62], and drop-out rates are considerable for CBT PTSD-treatment [63]. Furthermore, adult patients with toxic stress often present with a cluster of symptoms for which the diagnosis complex posttraumatic stress disorder (cPTSD) - accepted by the WHO 2019 [64] - may be more suitable. This diagnoses however, is not included in DSM-5 [65]. A similar diagnosis, developmental trauma disorder (DTD), has been suggested for children [66, 67], but is neither accepted by ICD 11, nor by DSM-5. There is a growing body of promising evidence for treatment methods addressing symptoms and symptom clusters common with cPTSD. These methods include neurofeedback [68, 69], focused work on experiences of guilt, shame and disgust [55, 70] psychedelic assisted psychotherapy [71-73] and somatic based psychotherapy [74] and yoga [75].

### **1.2.7 Swedish guidelines and treatment programs for victims of sexual violence**

The national center for knowledge on men's violence against women (NCK) has developed emergency health care guidelines for victims of sexual violence. There are however no non-emergency intervention programs or guidelines. Instead, patients who seek health care more than four weeks after exposure to sexual violence are referred to specific symptom reduction interventions relevant to the most prominent symptom. In Sweden, CBT and medication targeting



neurotransmitters are included in treatment programs and national guidelines for symptom reduction of psychiatric diagnoses at all levels in the health care system. For children with PTSD, trauma focused cognitive behavioral therapy (TF-CBT) is available in child psychiatry clinics. For adults with PTSD, Prolonged Exposure (PE) is recommended as first-hand treatment, but eye movement and desensitization and reprocessing therapy (EMDR) is also available at some clinics. No treatment programs or guidelines exist for complex PTSD (cPTSD) or developmental trauma disorder (DTD).

### **1.3 HUMAN RIGHTS BASED APPROACH (HRBA) TO HEALTH**

The concept of HRBA [76] was developed by the UN, and was further developed in relation to health by the WHO [77]. Through the concept of HRBA, the obligations of the duty bearers (i.e. the state as a health care provider at all levels) to fulfill the universal human right to health for its people is articulated as well as the right of the right-holders (in this case the victims of sexual violence) to claim their right to health [76].

The following terms are central in HRBA to health:

Availability: *Functioning public health and health care facilities and programs in sufficient quantity.* Accessibility: *Health care that is non-discriminative and physically, economically (affordability) and informational accessible.* Acceptability: *Health care that is respectful of medical ethics and culturally appropriate as well as sensitive to age and gender.* Quality: *Health care that is scientifically and medically appropriate.*

In summary, a HRBA to health defines that health care providers are accountable, and that the health care offer shall correspond not only to needs traditionally seen as medical. This means for example that in addition to knowledge about common physiological and psychological reactions and symptoms after sexual violence, professionals must be able to convey

compassion and empowerment [78] and to recognize sexual violence exposure as a legitimate reason to seek care [79], if good quality health care is to be available for victims of sexual violence.

#### **1.4 THEORETICAL STARTING POINTS FOR THE THESIS**

The two overarching theoretical starting points for this thesis are based on earlier research on 1) how repeated interpersonal traumas, like ACEs and CSA, risk inducing neurobiological changes and increase the risks of mental health problems, including cPTSD [45-52] 2) how feelings of shame, disgust and guilt induced by interpersonal trauma place special demands on treatment [55, 70]. Furthermore, the thesis has a translational approach, where integration of basic-, patient- and population-based research is performed, with the aim to improve access to good quality health care [80]. Finally, the thesis recognizes that a HRBA to health is a prerequisite for good quality health care access.

## 2 RESEARCH AIMS

The overarching aim of this thesis is to increase the knowledge about the burden of disease and the access to good quality health care among victims of sexual violence in Sweden, and to identify key factors with potential to increase access to good quality health care for victims of sexual violence. More specifically to:

- 1) Quantify and compare comorbidities and comorbidity patterns, number of visits to different types of healthcare facilities, and prescribed medicines among individuals with a recorded diagnosis of sexual violence compared to those without such a registration
- 2) Analyze patient and violence characteristics, diagnosis and perceived access to good quality health care among patients at an NGO specialist clinic for victims of sexual violence, and to find a model explaining access to care for victims of sexual violence.
- 3) Evaluate a one session treatment session of the method Modified Lifespan Integration (MLI) for PTSD after rape.



### 3 MATERIALS AND METHODS

We used three different types of data to test our hypothesis: register-based health care data, journal record data and self-rating data. The different data types were used in five different study designs. Two of the five studies included both children and adults, two included only children, and one include only adults.

#### 3.1 REGISTER-BASED HEALTH CARE DATA FROM THE STOCKHOLM REGION

The register-based health care data was extracted from the VAL data base where virtually all consultations and diagnoses within the healthcare system in the region are recorded and stored. The data gave rise to three different papers and study designs.

##### 3.1.1 Diagnoses of sexual violence and their common registered comorbidities in the total population of Stockholm (Paper I)

###### 3.1.1.1 *Collection of data*

The first study (Paper I) was cross sectional and included all living individuals who at some point resided in the Stockholm Region between the 1st of January 2008 and 31th of December 2013 (n= 2 549 496). Psychiatric (ICD 10: F43, F40, F41 F 20, F 23, F 25, F 28 F 29, F 30, F31, F10-F19, F32, F33, F43) and pain-related diagnoses (ICD 10: R10, R51, R52, G44, M79) given 2013-2014 were collected and analyzed, and the prevalence of different diagnoses were compared between those with a diagnosis of sexual violence (ICD 10: Z044, Y05, T74.2) and those without such a diagnosis.

### 3.1.1.2 Statistics

Descriptive statistics, i.e. number and percentage were used to describe the total population. Logistic regression with 95% CI was used to calculate age and neighborhood socioeconomic adjusted ORs to compare odds for concomitant diagnoses between the two groups. SAS software, version 9.4 (SAS Institute Inc., Cary, NC) was used for the calculations.

### 3.1.1.3 Results

Being cross sectional, no cause-effect conclusions could be drawn, but in summary the result replicated but quantified earlier self-report and questionnaire studies and reviews for comorbidities among victims of sexual violence (table 1).

TABLE 1 Comorbidity in all females and males (ORs with 95% CI) with and without sexual abuse during 2013–2014 living between 1 January 2008 and 31 December 2014 using people without sexual abuse as referents, according to logistic regression analyses

Comorbid diagnoses	Female		Male	
	Age 0–17 years	Age 18 years	Age 0–17 years	Age 18 years
Pain	2.4 (2.0 to 2.8)	3.2 (2.1 to 5.0)	2.3 (1.4 to 3.6)	2.9 (1.7 to 4.9)
Depression	4.2 (3.4 to 5.2)	5.9 (4.1 to 8.6)	2.2 (0.7 to 7.3)	6.7 (3.8 to 11.8)
Psychotic disorder	3.4 (1.2 to 9.1)	15.3 (8.0 to 29.4)	<0.001	23.8 (11.6 to 48.9)
Bipolar disorder	5.9 (3.5 to 9.7)	8.8 (4.4 to 17.3)	<0.001	9.9 (3.1 to 31.9)
Anxiety disorders	4.6 (3.8 to 5.6)	5.8 (4.0 to 8.5)	5.5 (2.6 to 11.5)	14.3 (8.5 to 24.2)
Stress disorder	15.7 (13.1 to 18.9)	4.5 (3.0 to 6.6)	12.4 (6.0 to 25.7)	12.9 (7.5 to 22.1)
Alcohol	9.7 (7.8 to 12.0)	19.3 (12.6 to 29.6)	3.9 (1.4 to 11.3)	25.8 (15.2 to 43.9)
Drugs	10.0 (7.7 to 13.0)	16.7 (10.7 to 26.1)	0.9 (0.1 to 6.5)	12.9 (6.9 to 24.1)
Adjusted for age and neighbourhood socioeconomic status.				

One unexpected result was the very low number of registrations of sexual violence among the study population: Only 788 females and 74 males out of 2 549 496 individuals had a registration of sexual violence in their journal record during the analyzed period (2013-2014). The most exposed group of individuals were adolescent girls 13-17 years old (n=471).

### **3.1.2 Health care consumption among adolescent girls prior to diagnoses of sexual violence, a case–control study in the Stockholm Region (Paper II) & Health care consumption and psychiatric diagnoses among adolescent girls 1 and 2 years after a first-time registered child sexual violence experience: a cohort study in the Stockholm Region (Paper III)**

#### *3.1.2.1 Design and data collection*

In the next two register-based studies (Paper II-III) we focused on the most exposed group, including 12-year-olds as well. We wanted to analyze how diagnosis, health care visits and prescribed medication differed and changed among the girls with a CSA registration as compared to girls without such a registration, both one and two years *prior* to and *after* the first registration of CSA.

Based on knowledge of delayed disclosure of CSA and the bi-directional associations between CSA and mental health problems, we hypothesized that both diagnosis at visits and prescribed medication would be higher for girls with a CSA registration compared to the controls before the first registration, and remain high, but less high, after the registration. For the analysis of data one and two years *prior* to the first registration of a sexual violence we used a case-control design. In this study each girl (n=519) with a CSA registration (case) was matched to 10 girls with the same age and neighborhood socio-economic status as the cases, compared to 10 girls without such a registration (controls). Each control was enrolled only once, even if matched with more than one case (n=4920). For the data one and two years *after* the first registration of CSA, we used a cohort design, including the same girls as in the case and control study. For defining socio-economic status we used the levels high, middle or low, as defined by the Mosaic tool [81].

### *3.1.2.2 Statistics*

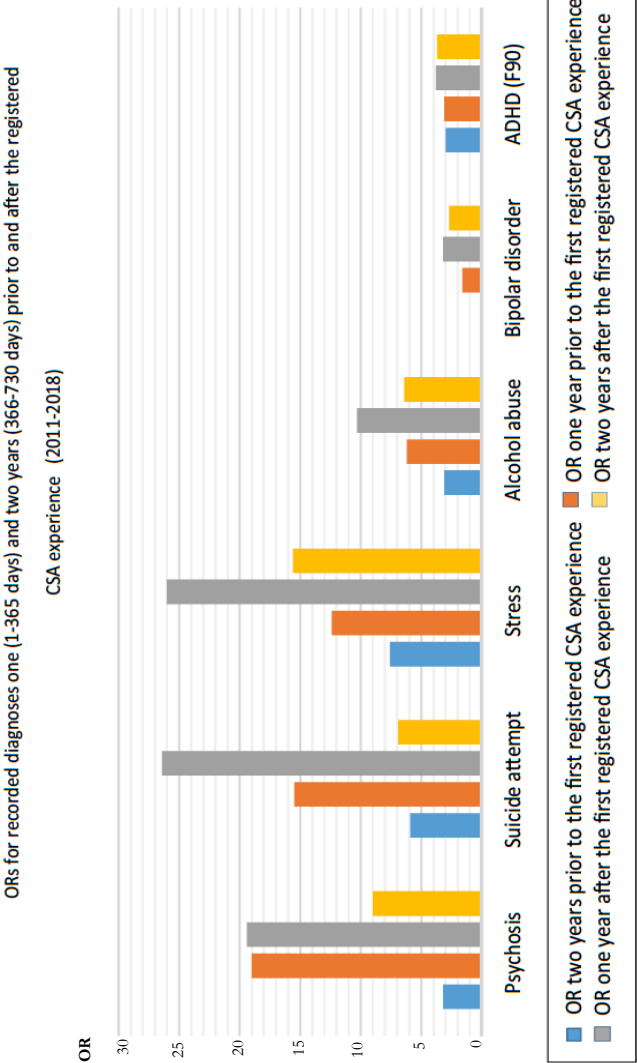
Means with 95% CI were used to compare number of visits between the girls with and without a registration of sexual violence. Conditional logistic regression was used for calculation of odds differences for diagnoses and prescription of medication between the two groups. Since the girls without a registration of sexual violence were age and socio-economically matched to the girls with such diagnoses, no further statistical adjustments of data were made (Paper II). The same statistical method and adjustments were made in the cohort study of the cases and controls (Paper III). SAS software, version 9.4 (SAS Institute Inc., Cary, NC) were used for the calculations.

### *3.1.2.3 Results*

In summary, the girls with a registration of sexual violence had a health care seeking pattern that differed drastically from the girls without such a registration both one and two years prior to and after the first CSA registration, with higher numbers of diagnoses, visits and prescribed medication. As opposed to our hypothesis, the ORs for certain diagnosis increased instead of decreased the year after the registration. Psychosis and suicide attempt were two of the diagnoses with ORs increasing after CSA registration - from OR 19 and 15 respectively the year before, to 26 the year after the registration. Some of the OR patterns are shown in Figure 1.



FIGURE 1



### **3.2 JOURNAL RECORD DATA FROM A SPECIALIST CLINIC FOR VICTIMS OF SEXUAL VIOLENCE**

The data used in the study was collected at the non-profit, non-governmental organization World of No Sexual Violence (WONSA) specialist clinic. The clinic is the only research oriented non-emergency specialist clinic for adults with psychological symptoms after sexual violence in Sweden. Structured patient and violence specific data as well as treatment out-come variables are continuously documented throughout the treatment period.

#### **3.2.1 The theoretical starting point of the study**

The data in the present study was originally collected within the framework of a quality assurance project at the clinic. The aim of the project was to increase the understanding of the patient- and abuse-characteristics among the patients at the clinic, and to understand why patients had chosen to contact the clinic.

The patterns emerging from the data, including the fact that 80% of the patients felt good quality health care was not available for them within the regular health care, added new perspectives to the scientific conversation in the field.

Consequently, the quality assurance project was converted into a scientific project.

#### **3.2.2 Delayed healthcare access among victims of sexual violence, understood through internal and external gatekeeping mechanisms (Paper IV)**

##### *3.2.2.1 Design and data-collection*

In this descriptive study (Paper IV), patient record files from 100 consecutive new adult patients at the clinic (1<sup>st</sup> of January 2017 – 28 February 2018) were

analyzed. The main data was collected from a semi-structured intake interview protocol. Exclusion criteria was no protocol in the patient record file (n=11, due to symptom severity hindering the protocol use) or age < 18 (n=1). The remaining patient record files (n=88) were analyzed regarding 15 main patient- and violence-specific variables: Gender, age at intake, age at first sexual violence, period of violence, years to disclosure, type and number of violence, number of perpetrators, relation to first perpetrator, number of ACEs, level of education, diagnoses at admission or earlier, number of suicide attempts, self-rating scores on Montgomery Åsberg Depression Rating Scale (MADRS-s) and Impact of Event Scale (IES). The data from the patient record file analysis were validated and merged with data from prior studies on disclosure barriers and the impact of knowledge and emotional preparedness on adherence to research findings and on psychiatric traditions and health care organization.

#### *3.2.2.2 Statistics*

Numbers, percentage and means with 95% CI were used to summarize the data. Spearman's correlations tests were used to analyze unadjusted correlations between health outcomes and all non-dichotomous patient- and violence-specific data. For dichotomous data Pearson's Chi2 tests were used. Stata/IC 16.1 (College Station, TX) were used for all statistic calculations.

#### *3.2.2.3 Results*

In summary, the medium age at admission was 40 years and a majority of the patients were women (90%) with higher education (72% professional training or university studies). Most patients had been exposed to repeated (81%) penetrative (85%) CSA (87%) by a family member (54%), and the biological father was the most common first perpetrator (28%). The mean period of

violence was 6.0 years (SD 5.1), and medium time to first disclosure was 15.7 years (SD 15.3). Earlier suicide attempts were common (38%), and at admission the medium number of diagnoses was 6.3 (SD 2.6) with anxiety, posttraumatic stress disorder (PTSD), depression, chronic pain and exhaustion disorder among the five most common diagnoses. The patient- and violence-specific data with the strongest correlation to a high number of diagnoses was the number of ACEs (Spearman's  $r=0.4$ ,  $n=66$ ,  $p=.001$ ). The patient- and violence-specific data with the strongest correlation to suicide attempt was the number of ACEs (Spearman's  $r=0.4$ ,  $n=79$ ,  $p=.002$ ), father or other man to whom the patient had been dependent as perpetrator (Person's Chi2  $p=.0026$  and  $p<.0001$ ), and number of perpetrators (Spearman's  $r=0.4$ ,  $n=83$ ,  $p=.0008$ ). Earlier diagnoses or present self-ratings for PTSD, depression and anxiety had no correlation to prior suicide attempts.

When asking about earlier health care contacts and perceived access to good quality health care, 80% had disclosed and tried to access good quality health care before seeking help at the NGO specialist clinic, but had felt their needs had not been met. At self-ratings at admission, 90% scored for PTSD (95%  $\geq 34$ , 80%  $\geq 50$ ) and depression (88%  $\geq 13$ , 57%  $\geq 19$ ), regardless of whether the subject had attempted to gain access to good quality health care or not.

A gatekeeping model is proposed as a tool for identification of key factors impacting health care access for victims of sexual violence. In accordance with HRBA to health, it is suggested to be used not only for the promotion of good quality health care access, but also to facilitate the process of accountability and to enable victims of sexual violence to claim their rights (figure 2).

Figure 2

	<b>External dimension (within the healthcare system)</b>	<b>Internal dimension (within the patient)</b>
<b>Competence related gatekeeper</b>	<ul style="list-style-type: none"><li>• Insufficient knowledge of prevalence</li><li>• Insufficient knowledge of health consequences</li><li>• Insufficient knowledge of disclosure processes</li><li>• Insufficient recognition of the importance of compassion and empowerment</li></ul>	<ul style="list-style-type: none"><li>• Insufficient knowledge and understanding of the symptoms and difficulties experienced</li></ul>
<b>Emotional related gatekeeper</b>	<ul style="list-style-type: none"><li>• Insufficient emotional preparedness to receive narratives of disclosure</li><li>• Insufficient emotional preparedness to accept SA as a plausible origin of the symptoms presented.</li><li>• Insufficient emotional preparedness to confirm and communicate SA as a plausible origin of the symptom, to the patient</li></ul>	<ul style="list-style-type: none"><li>• Feelings and emotional preparedness to disclose:<ul style="list-style-type: none"><li>- High levels of feelings of shame, disgust or guilt</li><li>- Fear of not being believed by healthcare professionals</li><li>- Fear not to receive adequate help</li></ul></li></ul>
<b>Organizational related gatekeeper</b>	<ul style="list-style-type: none"><li>• Healthcare systems being organized according to symptoms rather than to etiology</li><li>• Healthcare systems organized according to treatment methods, not recognizing the importance of compassion and empowerment</li></ul>	<ul style="list-style-type: none"><li>• Altered brain functions and abilities due to trauma<ul style="list-style-type: none"><li>- Alexithymia</li><li>- Dissociative amnesia</li><li>- Levels of hyperarousal inhibiting organized verbal narrative</li><li>- Dissociative Identity Disorder</li></ul></li></ul>

### 3.3 SELF-RATING DATA FROM AN RCT-STUDY

Accessible and cost-effective treatment after rape is of high importance, considering both the high risk of PTSD after rape [82] and the subsequent malicious downward spiral with further re-and poly-victimization so often seen after sexual violence [15-17]. As earlier mentioned, there are no specific treatment programs or guidelines for PTSD after rape in Sweden, only for PTSD as such. However, even for general PTSD treatment, the number of evidence-based methods are limited, and new perspectives on, as well as methods for, PTSD treatment could be of great value.

#### 3.3.1 Theoretical starting point for the treatment study

The theoretical starting points of this study were that:

- 1) There are differences between PTSD and cPTSD, and these differences may have implications for treatment and outcomes and should therefore be studied separately.
- 2) Symptoms of PTSD may be due to memory creation failure, where the traumatic episode has not been anchored in time as an episodic memory, and may therefore be treated by using the method *Lifespan Integration*, developed by Peggy Pace 2002 [83, 84].

##### 3.3.1.1 Lifespan Integration (LI)

Lifespan Integration is a protocol-based timeline centered therapy. In the theory of PTSD treatment with LI, as described for the first time in the Paper V, the hypothesis is that: *The core of the PTSD symptoms is due to a failure of the index trauma to anchor as an episodic memory in the traumatized individual's chronologic autobiographic memory.* Consequently, the goal of the treatment is:

- 1) To transform the fear memory to an episodic memory and
- 2) To anchor the newly formed episodic memory into the autobiographic memory of the traumatized patient.

In the present study the original LI PTSD protocol was modified (Modified LI, i.e. MLI), with the addition of an imaginary re-script section in order to facilitate the letting go of feelings of guilt and shame and integrate feelings of agency and compassion to the autobiographic memory of the sexual violence. For a more detailed description of the theory and practice of MLI see the manual [85] (also attached to Paper V in the thesis).

### **3.3.2 A One-Session Treatment of PTSD After Single Sexual Assault Trauma. A Pilot Study of the WONSA MLI Project: A Randomized Controlled Trial (Paper V)**

#### *3.3.2.1 Design and aim*

In this randomized controlled treatment pilot study (n=36), we wanted to try the efficacy of a new treatment method with a new perspective on PTSD, Lifespan Integration (LI), modified to specifically address feelings of guilt and shame (Modified Lifespan Integration, MLI). The MLI intervention in the study was a 90-140 minutes one-session treatment.

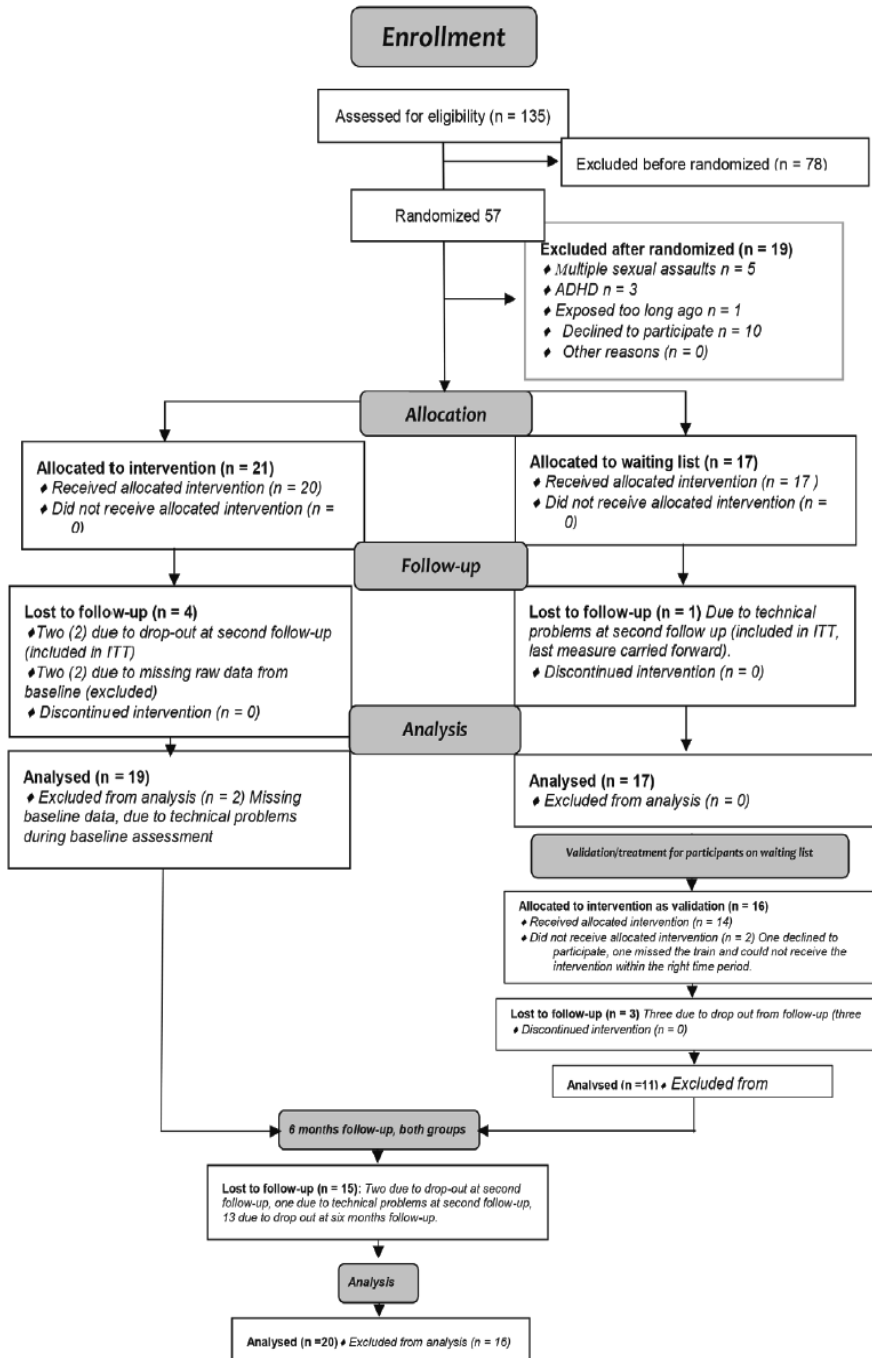
#### *3.3.2.2 Inclusion, randomization and outcome variables*

In this study only patients with PTSD after sexual violence, were included. Patients with multiple sexual violence or cPTSD because of other earlier traumas, were excluded. Other exclusion criteria were active substance abuse, ongoing psychotic episodes and neuropsychiatric disorders (the decision to exclude

patients with neuropsychiatric disorders was not self-evident, and is not recommended for future studies). The sexual violence exposure should have happened not more than five years before entering the study; age  $\geq 15$  and fluent in Swedish language. The main outcome variable was scores on the IES-scale, where  $\geq 34$  was used as the cutoff point for PTSD. The main outcome was the difference in IES score changes (as compared to the base line scores) between the intervention arm and the waiting-list arm at the first follow-up 20 days (+/-3 days) after intervention (intervention arm) or no intervention (waiting-list arm). After the first follow-up, the waiting list arm received the same intervention, with a validation follow up 20 days (+/- 3 days) after the intervention. A six month follow up was made as well on all participants. The inclusion and randomization processes are described in figure 3:



Figure 3



### 3.3.2.3 *Statistics*

Baseline scores were used as covariates when analyzing differences in mean outcomes between the treatment- and waiting list groups with analysis of covariance (ANOVAs). Both intent-to-treat- (ITT) and per protocol-analysis were performed. Analysis Cohen's d was calculated. The effect sizes 0.2, 0.5 and 0.8 are regarded as small, moderate and large respectively. Multiple tests were conducted, hence a p-value < 0.05 was regarded as significant for the primary outcome (IES-R). Stata version 14.2 was used for the statistic calculations.

### 3.3.2.4 *Results*

In summary, out of the 135 individuals contacting the clinic for participation, only 36 participants were finally included in the ITT analysis (19 in MLI-arm and 17 in the waiting list arm, see the flow chart in Figure 2). Among these, a mean score reduction of 50% was seen in the intervention arm, with 72% of the participants in the intervention arm recovering from their IES-scored PTSD at the first follow-up, while the IES points remained virtually unchanged in the waiting-list arm. The waiting-list arm had a similar symptom reduction (mean score reduction of 60% and 82% recovered from their IES-scored PTSD), at the validation follow-up after their intervention. The results were stable when measured at the 6-month follow up. No adverse effects were reported, and the drop-out rate was 0.

## 3.4 **ETHICAL CONSIDERATIONS**

Increased knowledge about sexual violence consequences in a health care context is necessary if health care processes and interventions meeting the needs of the victims are to be developed. Considering the high risk for suicide attempts

among the patient group, knowledge has to be gathered and tested in a conscious and safe way. Register-based data from clinically assessed patients give important insights into how sexual violence is reflected within the health care system, with low ethical risks. Ethical permission for the three register-based studies (Paper I, II and III) was given by the regional ethical review board in Stockholm (2013/2196-31/2, 2016/638-32).

Patient record file analysis provides deeper understanding of the mechanisms behind the register-based data. Information from patient record file analysis can also generate hypotheses for future studies to evaluate. Using 100 consecutive patient record files from a clinic with, at the time, more than 600 patients, and aggregated results with no possibility to identify any specific individual was considered as a low ethical risk as compared to the possible benefits, and ethical approval for the descriptive study (Paper IV) was given by the regional ethical review board in Stockholm 09/01/19 (2019-00481).

The treatment options for individuals with PTSD after sexual violence are currently limited, and the risks of re-victimization as well as of suicide attempts after a single sexual violence exposure or rape are high. The possible benefits of an easily accessible short time treatment alternative could be of great value. Testing new interventions is associated with high risks. To do so is nevertheless necessary if new evidence-based methods are to develop. With physicians and treatment staff from the NGO WONSA available for extra support and an interim analysis added to the protocol, ethical approval was given for the study by the regional ethical review board in Stockholm (2015/1868-31/2, 2017/250-32), and the registration number NCT03141047 was obtained by the ClinicalTrial.gov in March, 2016.



## **4 DISCUSSION**

The main findings in the thesis were:

1. The burden of disease, including the presence of suicide attempts, is high, and the access to good quality health care is low among health care seeking individuals exposed to sexual violence.
2. Exposure to sexual violence is rarely recognized and registered in the present healthcare system.
3. There are identifiable key-factors with potential to increase access and lower costs for good quality health care for victims of sexual violence.

### **4.1 BURDEN OF DISEASE AND SUICIDALITY**

The burden of disease among adult victims of sexual violence in this thesis is higher than in earlier prevalence studies [38]. This is probably due to the clinically assessed data among health care seeking individuals, as compared to non-clinical self-reported data. Despite the high burden of disease in the register-based studies in this thesis, the results are probably underestimated and diluted, given the low tendency to report sexual violence to health care professionals [79]. The same is probably true for the suicide attempt rates, even though they are in line with earlier studies on CSA and sexual violence exposure [8].

One important finding in the patient record file study (Paper IV) was that each of the three factors sexual violence with the biological father as the first perpetrator, total number of perpetrators and ACEs, had stronger associations with suicide attempts than the presence of depression, anxiety or PTSD, respectively. These

findings are important, and in line with earlier studies on ACEs [86, 87] and it is imperative to integrate this knowledge to the general suicide prevention work.

The mean of 16 years of delayed disclosure and 80% reporting that health care experiences did not meet their needs prior to seeking help at the specialist clinic, as found in the patient record file study (Paper IV), may partly be due to selection biases. However, the register-data-based studies (Paper I-III), with its high burden of disease and increased suicidality after health care contact, indicate there are external gatekeeping mechanisms hindering access to good quality health care.

Given the designs, no firm causal conclusions can be drawn by the case-control and cohort studies on adolescent girls. However, in the light of prior studies - on mental health problems, suicide risks and delayed disclosure among adolescents exposed to CSA, as well as of mental health problems as a risk factor for sexual victimization - the present results are both hopeful and alarming: The hopeful part is the possibility to identify girls with ongoing, or at risk for, CSA, already two years earlier than today just by paying attention to their specific health care consumption pattern. The alarming part is the increased risk of suicide attempts as well as the increased prevalence of diagnoses like BPD and alcohol abuse after the first registration of sexual violence, indicating insufficient interventions and possibly misdiagnosis following the registration. Both factors indicate the need for national treatment programs, specialized clinics, methods and guidelines as well as specific follow ups for this group of patients.

In summary, the following three different perspectives can be helpful when trying to understand the high burden of disease after sexual violence exposure:

1. *The pathogenic power of sexual violence exposure*, including high levels of stress and strong feelings of guilt, shame and disgust, are per se disease-generating.
2. *The lack of treatment programs, methods and guidelines* for addressing symptoms caused by toxic stress, guilt, shame and disgust imply increased the risk of malpractice and

subsequent maintenance of the burden of disease. 3. *Gatekeeping mechanisms* hinder effective health care access and may preserve high burdens of disease.

## **4.2 LOW RECOGNITION OF SEXUAL VIOLENCE EXPOSURE AS ETIOLOGIC FACTOR**

The low recognition of sexual violence in the present healthcare system, as demonstrated in this thesis, is in line with earlier studies [79, 88-92]. It may be partly explained by the psychiatric health care tradition to be organized not by etiology, but by symptoms. However, a symptom-based perspective not paying attention to etiology, risks to undermine the process of disclosure as well as the understanding of patients with multiple diagnoses or symptom clusters not entirely consistent with well-established diagnoses, such as cPTSD or DTD. Furthermore, even patients meeting diagnostic criteria for well-known diagnoses like PTSD, BPD and neuropsychiatric disorders, may be misdiagnosed and appropriate treatment omitted if the pathologic power of ACEs and sexual violence is not considered. It is reasonable to assume that misdiagnosis, if systematic, obstructs appropriate health care organization, and increases the risk for malpractice and excessive health care costs. Other reasons for lack of recognition can be traced to administrative routines, but also to lack of education, competence and emotional preparedness among health care staff, as described in the external dimension of the proposed gatekeeping model in Paper IV.

## **4.3 IDENTIFIABLE KEY-FACTORS WITH POTENTIAL TO INCREASE GOOD QUALITY HEALTH CARE ACCESS**

### **4.3.1 Gatekeeping model**

There are reasons for why nations able to both recognize the need of and to provide good quality health care for victims of cancer, are not able to do the same for victims of sexual violence. The term “subaltern” as defined by Spivak

1985 [93] may be useful when trying to identify these reasons. Simplified, a subaltern is someone or a group, whose voice is not heard no matter what. As Spivak concludes, not even suicide as a final means of communication is effective for a subaltern because even if attention is gained, the subaltern can no longer speak [93]. Victims of sexual violence have tried to speak within the health care system for centuries [94, 95]. However, leading professionals have not performed systematic observations of their narratives, nor of their symptoms *as described and perceived by the victims*. [94, 95]. Instead the precedence of interpretation of the words and symptoms of the victims have been left to the dominating deputies [95]. However, second-hand observations risk to obscure scientific understandings and consequently hinder rational actions. This may explain why the burden of disease among victims of sexual violence has turned in to a “... global public health problem of epidemic proportions, requiring urgent action” (WHO 2013) [1]. It may also explain why the subalterns, i.e. victims of sexual violence, shun the health care system [79].

Prior studies have identified barriers to good quality health care access for victims of sexual violence [79, 96]. In general, the concept of “barrier” is often referred to as a non-personal external non-accountable obstacle, however health care systems are the result of human organization and structure creation. When systematic inaccessibility to a health care system is identified, it is more appropriate from a translational point of view to assume there are gatekeeping mechanisms in the system, for which identifiable decision makers can and should be held accountable.

In the synthesis of our analysis, we therefore chose to systemize our results and barriers identified by prior research into a two-dimensional gatekeeping model. The external dimension in the gatekeeping model is directly linked to factors within the health care system, for which decision makers can be held accountable. The internal dimension on the other hand, is linked to internal processes common among victims of sexual violence. Prior research indicate



internal processes are affected by factors in the external dimension [79, 96]. This means decision-makers are indirectly accountable for the internal dimension of the gatekeeping model as well.

Through the proposed gatekeeping model, it is possible to target factors directly impacting health care access for victims of sexual violence. By facilitating accountability and enabling patients to claim their rights, the gatekeeping model also promotes a human rights-based approach (HRBA) [76, 77]. As far as we know, the gatekeeping model proposed is the first of its kind, which is promising. However, it is imperative to validate the gatekeeping model in cooperation with victims of sexual violence themselves if true HRBA to health for victims of sexual violence is to be obtained [76, 77].

#### **4.3.2 New perspectives on PTSD**

The apparent and promising results from the MLI study, after one single treatment session of approximately two hours, indicate the mechanism of action in MLI is different from the golden standard treatment prolonged exposure (PE). Based on the empirical understanding of MLI and theoretical elaborations of the original LI-PTSD protocol and earlier scientific findings, a new perspective on PTSD is presented [70, 84, 85]. The theory is however not validated through observational methods.

The possibility to achieve immediate symptom reduction through MLI could facilitate access to good quality health care among individuals with PTSD after sexual violence in general, and among adolescents in particular. The results from the pilot study motivates further studies on MLI as well as with other index traumas.

The results from the Modified Lifespan Integration (MLI) study in the thesis may eventually change our perspective on PTSD-treatment.

#### **4.4 STRENGTHS AND WEAKNESSES**

The overarching strength in the thesis are the different perspectives and data being used. One overarching limitation is the uncertain validity of the prevalence findings in the register-based data. The low tendency among victims of sexual violence to disclose to health care professionals and the low recognition of sexual violence within the health care system makes it plausible to believe that the results are diluted. However, even the opposite may affect the results: even if the associations between sexual violence and health care problems are strong, all victims may not develop health care problems, and hence do not seek health care. These facts, in combination with a lack of medically relevant classifications of sexual violence, makes it impossible to differentiate and estimate the exact burden of disease among victims of sexual violence. More specific strengths and limitations are found in each study.

##### Paper I

The large population (n=2 549 496) in the first register-based paper, being not a sample but including all living individuals in the Region during the period, is a strength, as are the well-defined inclusion criteria. However, the low prevalence of registered sexual violence during the time period analyzed, lack of life time prevalence in the material and the cross-sectional design, not allowing causal relationships to be analyzed, are limitations.

##### Paper II -III

The age and socioeconomic matched case-control design (Paper II) followed by the cohort design (Paper III) in the register-based studies on adolescent girls, make the registration of sexual violence the only difference among the two cohorts. This and the large population, well-defined inclusion criteria and health care data are strengths in these studies. In 2018, the administrative diagnostic routines for victims of sexual violence changed at the largest emergency ward in Stockholm. This change, and the fact that both studies are observational, not allowing firm conclusions on causality to be drawn, are limitations.

#### Paper IV

In the patient record file study, the consecutive inclusion and the data collection being performed in the same way for all patients, are strengths. That data collected from the semi-structured intake interview protocol could be further understood through the running record text is another strength. One important limitation on the other hand, is that the semi-structured intake interview protocol was not originally designed for research. Hence important information about why certain questions might not have been answered as well as data about ethnicity and socio-economic situations were not registered. Another limitation is that all data are based on anamnestic information without an external validity check, and memory bias in the data cannot be excluded. Despite this, the rich patient- and violence-specific data in combination with health care data are unique, and offers a deeper understanding to register-based data as well as possibilities for theory construction and hypothesis generation.

#### Paper V

In the treatment study, the randomized controlled design itself is a strength. It is also a strength that different therapists provided the intervention, and that the waiting-list arm received a validation intervention within the study, with the same evaluation as the treatment arm. However, evaluation of new methods are high-risk projects, and despite ethical permission for the present study, funding was not easy to find. As a result, highest possible patient safety needed to be prioritized not together with, but on the expense of highest possible study design quality. This affected the processes for inclusion and sample size. It also affected randomization, which was handled by the trial staff instead of by an external part. Evaluation was also affected, with only self-rating and no clinical assessment performed. Nevertheless, the RCT design in combination with the firm results constitute promising evidence for the new method treating PTSD after rape, and adds interesting perspectives for PTSD in general.



## 5 CLINICAL IMPLICATIONS

Health care systems as well as educational programs, need to adapt to the fact that exposure to sexual violence is a common, life-long pathogen, responsible for many life-threatening yet treatable diseases. Knowledge and research must be the foundation in this adaptation. It is also important to recognize not only the association between sexual violence and suicide attempts in particular, but also the strong associations between the number of ACEs in general and the number of suicide attempts. Meanwhile, it is important to be honest and humble in face of the fact that existing health care for victims of sexual violence is insufficient and edged by gatekeeping mechanisms.

## 6 CONCLUSIONS

HRBA to health care for victims of sexual violence in Sweden does not exist, which means a fundamental prerequisite for gender-equal access to health care in Sweden is missing.

The high burden of disease and low access to good quality healthcare, with elevated risks for suicide attempts *after* contact with the public health care, calls for emergent action.

Access to knowledge-based offers from existing specialist clinics and patient- and support-organizations should be facilitated. The gatekeeping model for health care access and the MLI PTSD-protocol are promising and may be developed and used to increase access and lower costs for good quality healthcare for victims of sexual violence. It is however important to include victims of sexual violence in the validation of the gatekeeping model.



## 7 POINTS OF PERSPECTIVE

Sexual violence exposure as a pathogen is a young field of research with a huge amount of future research needed to be done. In addition to replicate and further develop the MLI-study and validate the proposed gatekeeping model in this thesis, the following three recommendations for further research are examples of areas warranting further attention:

- 1) A medical classification of sexual violence and a definition of a “sexual violence injury syndrome” with different levels of injury severity and violence characteristics, would probably facilitate studies of prognosis, treatment outcomes and good quality healthcare access for victims of sexual violence. These definitions must however be accompanied by:
- 2) The development and validation of safe and effective methods for trauma anamnesis, including anamnesis of sexual violence characteristics, and
- 3) Further trauma treatment studies for patients with cPTSD and sexual violence exposure are needed. Examples of methods warranting further studies are Lifespan Integration, Neurofeedback and psychedelic assisted psychotherapy.





## 8 ACKNOWLEDGEMENTS

*In this limited space, I have chosen to express my thanks to those below. There are however an infinite number of people to whom I owe my gratitude. I hope and trust you know who you are – thank you.*

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**To the co-authors of the papers in the thesis:**

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