

Current psychological status of those seeking services at the Rape Trauma Service during the years 2010-2014

Gunnhildur Gunnarsdóttir

Lokaverkefni til Cand.Psych.-gráðu í sálfræði
Leiðbeinandi: Ingunn Hansdóttir og Berglind Guðmundsdóttir

Sálfræðideild

Heilbrigðisvísindasvið Háskóla Íslands
júní 2016

Ritgerð þessi er lokaverkefni til Cand.Psych. gráðu í sálfræði og er óheimilt að afrita ritgerðina á nokkurn hátt nema með leyfi rétthafa.

© Gunnhildur Gunnarsdóttir 2016

Prentun: Háskólaprent

Reykjavík, Ísland 2016

Index

Abstract.....	Error! Bookmark not defined.
Introduction.....	6
Definition and prevalence	6
Consequences of sexual assault.	7
Psychological treatment.....	9
Social support and PTSD.....	12
Method.....	14
Participants.....	14
Instruments.....	16
<i>NorVold Abuse Questionnaire (NorAQ)</i>	16
<i>The Posttraumatic Stress Disorder Checklist 5 (PCL-5)</i>	17
<i>Depression Anxiety Stress Scale (DASS-21)</i>	18
<i>Multidimensional Scale of Perceived Social Support (MSPSS)</i>	19
Research design	19
Procedure	19
Statistical analysis.....	20
Results	20
Service utilization	20
Current status	21
Association between predictive factors and trauma scores	233
Discussion.....	25
References	29
Appendix 1.....	36
Appendix 2.....	50

Abstract

Sexual assault has extensive and often long-term psychological consequences. The aim of the current study was to examine the current status of those seeking services at the Rape Trauma Service (RTS) during the year 2010-2014, i.e. depression, anxiety and stress, PTSD symptoms, and perceived social support. The study was a survey study without a comparison group. Information about age, gender, time elapsed from the assault, and abuse severity were obtained retrospectively from medical data. The participants were sexual assault survivors who sought help at the RTS in the years 2010-2014 and answered an online survey about their current status. All participants were Icelandic women and their age ranged from 18-60 years with the average age of 25.8 years. The current PTSD status of those seeking services at RTS was worse than originally expected, with an average of 33.1 on PCL-5. The current depression-, anxiety-, and stress status was however overall within normal range. Unexpectedly, the results revealed that a small group (N=8) that was referred to services at Barnahús had a worse current trauma, anxiety, and stress status than those who received services at RTS and those who did not receive any services. An association was not found between current trauma scores and the predictive variables; background factors, time elapsed from trauma, severity of trauma, and treatment utilization, like originally hypothesized. A negative correlation was found between trauma scores and perceived overall social support ($r = -.428$), social support from family ($r = -.428$), friends ($r = -.258$) and significant others ($r = -.336$). These findings of the current study emphasize how important it is for resources to be available to survivors immediately after sexual assault and that access to these resources is ensured later. The need of trauma focused treatment and the beneficial effect of social support is highlighted as well.

Introduction

Definition and prevalence

Sexual abuse has been defined in many different ways. Most definitions focus on a lack of consent in sexual acts, some on the relationship between the sexual assault survivor and perpetrator and some even include the consequences of sexual abuse in the definition (Kazdin, 2000). In the *World report on violence and health* by the World Health Organization sexual abuse is defined as:

Any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic, or otherwise directed, against a person's sexuality using coercion, by any person regardless of their relationship to the victim, in any setting, including but not limited to home and work (Krug et al., eds. 2002, p. 149).

When concepts like rape e.g. are used, a different understanding of what is included in the definition or unwillingness to label the sexual abuse as such can cause an inconsistency between studies (Fisher, Cullen, & Turner, 2000). Koss (1993) points out that it is therefore important to use detailed behavioral descriptions of the sexual acts to clarify concepts in prevalence studies. The NorVold Abuse Questionnaire, which was developed by Wijma et al. (2003) for their Co-Nordic study addresses this problem by categorizing sexual abuse into four groups based on severity with detailed descriptions on how to categorize unwanted sexual acts along the continuum of severity (Swahnberg & Wijma, 2003).

Limited data is available on the prevalence of sexual assaults in Iceland and the same seems to apply in the other Nordic countries as well, though hopefully that is about to change with growing interest in the field (Alþingi, 2010; Hilden et al., 2004; Wijma et al., 2003). One study of the prevalence in Iceland is a phone survey conducted by Karlsdóttir and Arnalds (2010). They asked 3000 women, ranging from 18-80 years whether a man had ever abused or threatened to abuse them physically or sexually after the age of 16. The response rate was 68.3% and 24.2% of

them said they had experienced some kind of sexual abuse. A somewhat higher rates of lifetime history of sexual abuse among Icelandic women were found in two separate Nordic studies or 33% (Wijma et al., 2003) and 27.1% (Hilden et al., 2004). Participants in both studies were gynecologic patients asked on arrival at the clinic to participate. The prevalence rates of sexual abuse in Iceland were the highest of the five Nordic countries studied in both studies, but the rates in the other Nordic countries ranged from 15-26.9% (Hilden et al., 2004; Wijma et al., 2003).

It has been established in numerous studies that sexual violence takes place in every country in the world, despite cultural differences and limited availability of data, and studies have also shown that women are much more likely than men to be sexually assaulted (Krug, et al., eds, 2002). The result of a survey on 16,000 American women and men 18 years or older was that 17.6 % of the women and 3% of the men claimed to have survived rape or attempted rape in their lifetime (Tjaden & Thoennes, 1998); these results are comparable to the findings of Sorenson, Stein, Siegel, Golding, and Burnam (1987) a decade earlier. The substantial difference between the American and Nordic ratings can to some extent be explained by a broader inclusion of sexual abuse in the Nordic definition and it is also possible that unwillingness of labeling the abuse as rape can cause a bias, as discussed earlier.

Consequences of sexual assault.

Studies indicate that the vast majority of sexual assault survivors meet the diagnostic criteria for Post-traumatic stress disorder (PTSD) in the first weeks after sexual assault and about half have prolonged symptoms (Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992). PTSD is a serious disorder characterized by intrusive images and/or memories of the trauma, avoidance associated with the trauma, emotional disturbance and alterations in arousal (American Psychiatric Association, 2013). Because of the nature of how the human brain processes trauma and difficult

experiences, it is important to look at the immediate emotional responses like distress, anxiety, and denial as a normal reaction to a traumatic event (Ellis, 1981; Mason & Lodrick, 2013). It has also been pointed out that self-blame and guilt are a natural response to traumatic events which are contrary to global beliefs (Lodrick, 2010). The disorder is therefore not diagnosed unless the symptoms have a negative impact on the persons functioning and persist for more than a month, thus it is likely that disruption in the normal recovery process has occurred (American Psychiatric Association, 2013; Resick, Monson, & Chard, 2014).

Anyone who experiences a traumatic event has a chance of developing PTSD subsequently. A number of factors such as the nature of the event and demographical differences have however shown to effect the probability. In a meta-analysis conducted by Brewin, Andrews, and Valentine (2000) three demographic variables were found that seemed to repeatedly act as a significant risk factor for developing PTSD after trauma. These variables were: Being female, being of younger age, and belonging to a minority. Other risk factors of developing PTSD following trauma were adverse childhood, the severity of the trauma, and a lack of social support.

Sexual assault has extensive consequences and a large number of studies have demonstrated that interpersonal violence is more likely than other types of trauma to have negative consequences for the survivor (Campbell & Wasco, 2005). Faravelli, Giugni, Salvatori, and Ricca (2004) found in their match-comparison study that 87.5% of sexual assault survivors reported a depressed mood 4-9 months after the trauma, compared with 68.8% of those who experienced life-threatening events. The sexual assault survivors were also more likely to have symptoms of sexual aversion, binge eating, and purging behaviors, among other symptoms.

Comorbidity of PTSD with other mental disorders is common. Results of large-scale studies show that approximately 80-85% of those diagnosed with PTSD meet the criteria for

another Axis-1 disorder (Breslau et al., 1998; Creamer, Burgess, & McFarlane, 2001) of which Major depressive disorder (MDD) is the most frequent, or up to 69% comorbidity rate. In the National comorbidity survey conducted by Kessler, Sonnega, Bromet, Hughes, and Nelson (1995), 78% of those with comorbid PTSD and MDD reported that the latter disorder was preceded by the first. In the same report a substantially higher incidence of substance abuse/dependency was found among those with PTSD compared to those without PTSD. The effect sexual assault has on substance abuse seems to apply to adolescences as well; Kilpatrick et al. (2000) found that a history of sexual assault predicted current substance abuse/dependency and that PTSD was an independent risk factor for marijuana and hard-drug abuse among youths aged 12-17.

The connection between a lifetime history of sexual abuse and physical health among women has also been examined. Women who had been sexually assaulted reported chronic pelvic pain more frequently than those who had not, had more somatic symptoms, higher rates of laparoscopic surgery, more frequent health care visits, missed more workdays, and had poorer self-rated health (Hilden et al., 2004; Hoge, Terhakopian, Castro, Messer, & Engel, 2007). In a meta-analytic review by Olatunji, Cisler, and Tolin (2007) of four studies with a total of 343 subjects, a strong association between PTSD and poorer quality of life was found for five domains of well-being, physical health, mental health, work, social, and home and family. This highlights the impairment of PTSD even further and emphasizes the need for available resources.

Psychological treatment

Psychotherapy specifically developed for treating PTSD has now been available for the past 30 years and at least three different treatment methods have emerged, all including some sort of exposure, that are empirically supported. The first to emerge was prolonged exposure therapy by E. B. Foa and Kozak (1986) and is based on their emotional processing theory, which originates

from the information processing theory by Lang (1977) and involves gradual exposure to trauma-related stimuli. Another type of psychotherapy worth mentioning is Eye Movement Desensitization and Reprocessing (EMDR), developed by Francine Shapiro in 1995. Finally the third type of psychotherapy, Cognitive Processing Therapy, will be addressed with a special emphasis since it is the treatment available at the Icelandic Rape Trauma Service.

The treatment manual of Cognitive processing therapy (CPT) was first published by Resick and Schnicke in 1992. The therapy was developed and improved over a 10 year period as a treatment program for rape survivors. CPT is based on a social cognitive theory of PTSD which states that traumatic events can dramatically alter beliefs about oneself, others and the world. The theory is based on the work of many theorists and is not incompatible with other theories of PTSD, such as information- and emotional processing theory. The main content of the therapy is education, exposure, and cognitive components. The cognitive component focuses on the content of the cognitions and their effect on feelings and behavior. “Stuck point’s”, beliefs that stand in the way of normal recovery are identified and are either assimilations about the event, e.g.; “This wouldn’t have happened if I had...” or over-accommodations about global beliefs, e.g.; “The world is a dangerous place” and the goal is to replace those with a more balanced view or accommodations.

CPT consists of 12 weekly, 50 minute sessions where the subject of each session is predetermined and accurately outlined beforehand. The Posttraumatic Stress Disorder Checklist 5 (PCL-5), a 20 item, self-assessment scale is administered before every session to monitor symptom change during the treatment and observe when/if the goal of a score below cut-off is achieved. In sessions 1 through 3 the rationale behind the therapy is presented, and the nature of PTSD symptoms, the flight-fight-freeze response are reviewed and the relationship between events,

thoughts and feelings are explored using the ABC-worksheet. The meaning of the event is explored with the aim of reducing stuck points and gain a more balanced view of the event. This is done by devising an initial impact statement and compile/record a stuck-point log. In session 4 the patient reads out loud a trauma account of the event, an exposure in order to tackle avoidance associated to the trauma and alterations in arousal. In sessions 5-7 basic cognitive therapy skills are taught and single beliefs challenged with the use of the challenging questions worksheet. In sessions 8-12, a focus is put on the five most prevalent dimensions disrupted by traumatic events: Safety, trust, power and control, esteem, and intimacy. In the 12th and final session a final impact statement is read out loud and compared with the initial one. The patient's progress is reviewed and future challenges as well as goals are discussed (Resick et al., 2014).

Cognitive processing therapy has been found effective for treating PTSD resulting from both interpersonal violence such as sexual assault as well as military related trauma (Monson et al., 2006). In the initial research on CPT by Resick and Schnicke (1992), a test group of 19 sexual assault survivors who received 12 weekly CPT group-sessions were compared to 20 wait-listed subjects that were drawn from the same pool. At the end of the 12-week period the CPT group had both clinically and significantly fewer symptoms of PTSD and depression than the wait-listed group and the treatment success of the test-group was maintained after 6 months. Resick, Nishith, Weaver, Astin, and Feuer (2002) expanded their research further and compared CPT with both prolonged exposure (PE) and waiting condition with approximately 40 female rape survivors in each group. The results were that both treatments were found highly beneficial and superior to the waiting condition with 76% of those who completed CPT and 58% of those who completed PE showing good end-state functioning (below a cutoff score of 20 on the PTSD Symptom Scale-Self Report and 10 or lower on Becks Depressive Inventory, a measure of depressive symptoms). Nine

months post treatment 64% of the CPT group and 68% of the PE group still met the criteria for good end-state functioning. Some intriguing results were that the time elapsed since the assault did not affect the treatment efficacy, so the treatment seems to be just as effective for treating recent trauma as well as trauma taking place decades earlier.

In the treatment manual by Resick et al. (2014) discussed earlier is specified that, “It is strongly recommended that patients attend all sessions and complete all assignments in order to benefit fully from therapy“ (p. 29) and NICE guidelines correspondingly recommend that normally treatment duration should be 8-12 sessions (NICE, 2005). Little is often known about those who drop out of treatment efficacy studies because no data is available to include in the results. However these recommendations are not made out of a thin air; the results of a meta-analysis of psychotherapy for PTSD shows that 67% of treatment completers do no longer meet the criteria for PTSD compared with only 56% not meeting the criteria when drop-outs are included (Bradley, Greene, Russ, Dutra, & Westen, 2005). .

Social support and PTSD

Social support is in general defined as actual or available assistance from any other person or organization. Commonly, the term is narrowed further to apply only to aid from persons close such as friends, family and significant others (SO); this definition was used in the current study. The support can come in a variety of forms, including emotional comforting and tangible aid and can be measured either as actual aid or perceived support from others (Langford, Bowsher, Maloney, & Lillis, 1997).

According to the buffering hypothesis by Cohen and Wills (1985), social support is beneficial under certain circumstances because it protects or “buffers” the individual from the deleterious effect of severe stress such as that following trauma. The hypothesis is consistent with

the stress and coping social support theory which also adds that social support aids by encouraging adaptive appraisal and coping of the individuals (Lakey & Cohen, 2000)

Lack of social support is associated with adverse health outcomes, both physical (Uchino, 2009) and mental (Gurung, Sarason, & Sarason, 1997). Social support has also been shown to have a positive impact on number of sub-clinical symptoms (Cohen & Wills, 1985). Similarly, studies have shown that lack of social support is a risk factor for the development of PTSD, The relationship between social support and Post-Traumatic Stress Disorder is no exception and has been well established in numerous studies (Brewin et al., 2000). In a meta-analysis conducted by Ozer, Best, Lipsey, and Weiss (2003) the weighted average correlation between perceived social support and PTSD symptoms due to interpersonal violence was statistically significant at $r = -.11$, somewhat lower than was found with combat trauma ($r = -.26$). Furthermore their analysis showed an increment in intensity of the correlation depending on how much time had elapsed since the assault, with the strongest correlation ($r = -.42$) when the greatest time had elapsed, or 3 years.

Beck, Grant, Clapp, and Palyo (2009) examined the relationship between PTSD and social support further in their study of 109 survivors of serious motor vehicle accidents. They used two different methods to measure social support, perceived social support using the MSPSS which was mentioned earlier and also with an interview measuring interpersonal functioning. Their results were that perceived social support was negatively correlated with the PTSD symptom emotional disturbances on all subscales. Those who had support from their friends, whether if it was measured by the self-report subscale “*friends*” or by an interview, showed less alterations in arousal than those who didn’t have that same support. Neither intrusive images and/or memories nor avoidance was significantly correlated with social support with either method. Finally the study found a

negative correlation between perceived social support from friends and Major depressive disorder, which is the most common comorbid disorder with PTSD.

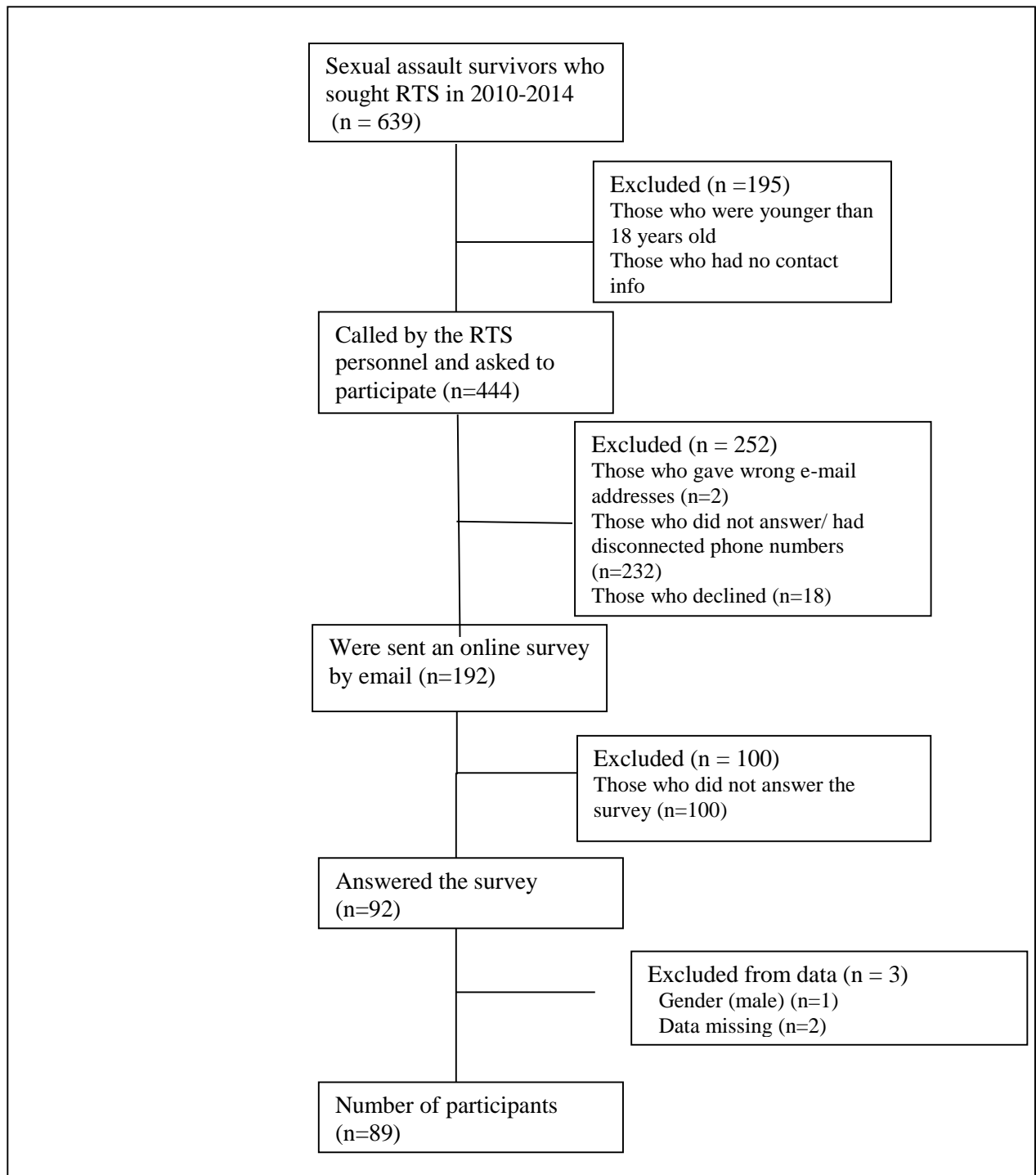
The aim of the current study was to examine the current status of those seeking services at the Rape Trauma Service (RTS) during the year 2010-2014, i.e. depression, anxiety and stress, PTSD symptoms, and perceived social support. In addition, the association between background factors, time elapsed from trauma, severity of trauma, and treatment utilization with current trauma scores was also examined. It was hypothesized that more time elapsed from the assault would be associated with lower current trauma scores. It was hypothesized that more severe abuse would be associated with higher current trauma scores. It was hypothesized that service use would be associated with lower current trauma scores. Finally, it was hypothesized that lack of perceived social support would be associated with higher current trauma scores.

Method

Participants

Participants were sexual assault survivors who sought help at the Icelandic Rape Trauma Service (RTS) in the years 2010-2014 and answered an online survey about their current status in April 2015 and 2016. There were 639 people who sought help from the RTS these years. The personnel of the RTS called and asked all the help-seekers who were 18 years or older they could contact to participate. Those who answered and agreed to participate got a link to the online survey sent in an email. 192 agreed to participate and 92 answered the survey. Three participants were excluded from the analysis. The total number of participants was thus 89. The age of the participants ranged from 18-60 years with the average age of 25.8 years. The participants were all Icelandic women. A flowchart of recruitment is shown in Figure 1.

Figure 1. *Flow of participants in the study*



Instruments

Information about the participants was received from three different sources: First, information was obtained from medical data, filled out at the RTS. The medical data consisted of a nurse's report and a report of a forensic examination conducted by a medical doctor. Demographic data about the survivors and information about the severity of the assault and the time elapsed from the assault were obtained from these reports. Second, information about service utilization was obtained from the psychotherapists' reports. Third and finally, information about current status, i.e. depression, anxiety and stress, PTSD symptoms, and perceived social support, was obtained with the online survey (see appendix 1).

Background variables. The Background variables age and gender were obtained from medical records, recorded at the RTS. The data was coded to designated registration forms (see appendix 2).

Time elapsed. Information about the time elapsed from the assault was obtained from medical records, recorded at the RTS. The data was coded to designated registration forms.

Abuse severity. Information about the severity of the abuse was obtained from medical records, recorded at the RTS. The severity of the sexual violence was assessed using the categorization of the NorVold Abuse Questionnaire (NorAQ).

NorVold Abuse Questionnaire (NorAQ): Abuse severity was categorized according to the deviation of the scale into a categorical variable with four possible scores. In the questionnaire sexual violence is divided into four categories ranging from mild sexual abuse to severe sexual abuse: *Mild* (touch of other body parts than genitals in a sexual way, used for perpetrator's sexual satisfaction or sexual humiliation), *moderate* (touch of genitals or body used for perpetrator's sexual satisfaction) and *severe* (some form of penetration or attempted penetration; penis, other part of the body or an object into vagina, rectum or mouth) (Swahnberg & Wijma, 2003).

Service utilization. Information about whether participants utilized the psychological service at RTS or where referred to Barnahús, (a government run center for child sex abuse), the total number of service sessions, treatment compliance (whether or not participants finished the service cooperation with their psychotherapists), and the category of the service sessions was found in the psychotherapist reports. The psychological service was divided into three categories; psychological first-aid, follow-up without formal treatment and treatment. Psychological first aid was defined as an unstructured trauma-focused psychotherapy from psychologists or other health professionals received within 6 weeks after the assault. The follow-up sessions were defined as an unstructured trauma-focused sessions, received 6 or more weeks after the assault. Treatment was the structured cognitive processing therapy and was only conducted if PTSD had been diagnosed. All participants received any kind of service were grouped together, those who didn't receive any service and a third group of individuals referred to Barnahús who were under age 18 at the time of the trauma.

Trauma symptoms. Information about current trauma symptoms was obtained from the online-survey. The severity of the trauma symptoms was measured with The PTSD Checklist for DSM-5 (PCL-5), a self-report questionnaire. A Preliminary validation study proposes a cut-off of 33 (Weathers et al., 2013).

The Posttraumatic Stress Disorder Checklist 5 (PCL-5): PCL-5 is a self-report scale designed to measure the severity of trauma symptoms corresponding to the DSM-5 criteria for PTSD. The scale has 20 items and is a 5 point Likert-scale (scoring from 0-4), where higher scores indicate more severe trauma symptoms. The scale has four clusters; cluster B (items 1-5), cluster C, (items 6 & 7), cluster D (items 8-14) and cluster E (items 15-20). Presence of at least one symptom in clusters B and C and two symptoms in the other two clusters is necessary to meet the criteria of a PTSD diagnosis. Psychometric research of the scale demonstrates strong internal- and

test-retest reliability as well as good convergent and discriminant validity (Blevins, Weathers, Davis, Witte, & Domino, 2015). The instrument was translated by Berglind Guðmundsdóttir, Agnes B. Tryggvadóttir and Guðlaug Friðgeirsdóttir and back-translated by Ingunn Hansdóttir.

Depression, anxiety and stress symptoms. Information about current depression-, anxiety-, and stress symptoms was obtained from the online survey. The severity of the symptoms was measured with the self-report list DASS-21. Clinical cut-offs are 10 for depression and 13 for anxiety (Ingimarsson, 2010).

Depression Anxiety Stress Scale (DASS-21): DASS- 21 is a shorter version of the original 42-item self-report questionnaire with only half the number of items or 21. Like the longer version, it is a 4 point- Likert scale designed to measure negative emotional psychological symptoms (depression, anxiety, and stress) and is divided into three correspondent sections, each with 7 items. Higher scores indicate more severe symptoms of depression, anxiety, and stress. Scores from 0-8 indicate normal status in the depression section of the scale, 9-12 indicate mild depression symptoms, 13-20 moderate, 21-26 severe, and 27-42 indicate very severe depression symptoms. Scores from 0-6 indicate normal status in the anxiety section of the scale, 7-8 indicate mild anxiety symptoms, 9-14 moderate, 15-20 severe, and 21-42 indicate very severe anxiety symptoms. Scores from 0-12 indicate normal status in the stress section of the scale, 13-16 indicate mild stress symptoms, 17-22 moderate, 23-28 severe, and 29-42 indicate very severe stress symptoms. The instrument was translated by Pétur Tyrfingsson. Both Icelandic as well as foreign studies of psychometrical qualities of the instrument demonstrate excellent test-retest reliability, internal consistency and factorial validity (Brown, Chorpita, Korotitsch, & Barlow, 1997; Ingimarsson, 2010).

Social support. Information about current social support was obtained from the online-survey. Social support was measured with the self-report questionnaire Multidimensional Scale of Perceived Social Support (MSPSS).

Multidimensional Scale of Perceived Social Support (MSPSS): MSPSS is an 12 item, 7 point-Likert scale designed to measure perceived social support from three sources: Friends, family, and significant others. Higher scores indicate greater support and the sub-score of each source can be summed to yield a global support score, which is often used as a single indicator (Zimet et al., 1988). Psychometrical research of the instrument demonstrates good internal and test-retest reliability, strong factorial validity, and moderate construction validity. There are no established population norms on the MSPSS (Zimet et al., 1990). The instrument was translated by Berglind Guðmundsdóttir.

Research design

The research is a survey research without comparison group. Information about age, gender, time elapsed from the assault and abuse severity were obtained retrospectively from medical data, as previously mentioned.

Procedure

Current study is a part of a bigger one, which is conducted by a cooperative group on the behalf of Landspítali Háskólasjúkrahús and Háskóli Ísland. The ethics committee of Landspítali gave permission (nr. 2.2015) and was The Data Protection Authority (Persónuvernd) notified. Medical history of the participants was read during the period 10. January – 12. April 2016 and the information was documented on designated forms. The forms were encrypted and therefore anonymized when entered into the statistical program SPSS. Participants were called by the RTS personnel 13.-17. April 2015 and 10. March – 18. April 2016. Those who answered and gave their

consent for participation got a link to the online survey sent by e-mail. The survey was closed approximately 4 weeks after the e-mail was sent. The information from the online survey was also encrypted and added to the preexisting data. Two e-mails were sent to remind those who accepted to participate to fill out the survey and had not done so. All participants were familiarized with their right to refuse to participate at any time in the survey.

Statistical analysis

Data were analyzed based on amount service received, with a formed groups: received service, no service and a third group of individuals referred to Barnahús. The statistical program SPSS was used to process the data. Three participants were excluded from the analysis. Two were excluded because they did not answer any question in the online survey and one was excluded because he was the only male participant. Group differences was tested using independent analyses of variance (ANOVA). The correlation between the continuous data was measured with Pearson's correlation coefficient (r). Linear regression was used to test whether predictor variables (age, gender, time elapsed from trauma, trauma severity, service utilization and social support) predicted trauma scores.

Results

Individual variation in the amount of time from the assault was quite substantial as it ranged from 16 months to 12 years while the average time that had elapsed was 4 years. 69.7% were survivors of severe abuse and 7.9% of moderate abuse. No participant fell under the category of mild abuse and data was missing for 22.5% of the participants.

Service utilization

Service utilization was examined and 51.7% of the participants received psychological service at the RTS. 38.2% received no service and 9.0% were referred to Barnahús. Information

about service utilization was not available for one participant. The service was divided into three categories; Psychological first-aid, follow-up without formal treatment, and formal treatment (CPT). The total number of service sessions ranged from 1 – 40 with an average of 8.28 sessions. As shown in Table 1, 80.4% received psychological first-aid, 65.2% received follow-up without formal treatment and 34.8% received formal CPT. The average number of sessions was highest for those who received CPT and ranged from 2.1 - 11.6 sessions. 47.8% who received service completed it in cooperation with their psychotherapists, 45.7% did not, either by declining the service after it started or by stopping attending. Data on treatment compliance was missing for 6.5% of the participants.

Table 1: *Overview of the service utilization*

	Yes (%)	No (%)	Average number of sessions (N)
Received service	51.7	38.2	8.28
Psychological first-aid	80.4	19.6	2.1
Follow-up without formal treatment	65.2	34.8	3.1
Formal treatment (CPT)	34.8	65.2	11.6

Note. CPT= Cognitive Processing Therapy

Current status

Current status, i.e., trauma symptoms, depression-, anxiety- and stress symptoms, and social support was examined. The average scores on PCL-5, DASS-21 and subscales, and MSPSS and subscales for all participants and by service utilization can be seen in Table 2. The PCL-5 median for all participants was 31.0.

Table 2: *Current status: Average scores on PCL-5, DASS-21 and subscales and MPSS and subscales.*

List names	All (N= 89)	Received service (n=46)	No service (N=34)	Barnahús (N=8)
PCL-5	33.1	32.4	29.9	49.0
DASS-21	20.8	18.7	19.9	33.9
DASS – Depression	6.50	5.88	6.35	9.75
DASS – Anxiety	5.46	4.51	5.29	10.5
DASS – Stress	8.88	8.30	8.26	13.6
MSPSS	64.6	66.0	65.3	54.6
MSPSS – Family	19.7	19.9	20.3	17.1
MSPSS – Friends	20.9	21.5	20.7	17.8
MSPSS – SO	24.1	24.7	24.3	19.8

Note. PCL-5 = Posttraumatic Stress Disorder Checklist 5, DASS = Depression Anxiety Stress Scale. MSPSS = Multidimensional Scale of Perceived Social Support. SO = significant other.

A significant difference was found with One-way ANOVA, $\alpha = 0.05$, between the mean PCL-5 scores of the three groups; those who received psychological service, no psychological service and were referred to Barnahús ($F(2, 81) = 3.78, p = .027, \eta^2 = .085$). A Post-hoc comparison using the Bonferroni adjustment indicated that the mean trauma score of those who were referred to Barnahús ($M = 49.0, SD = 2.69$) was significantly higher from those who received service at RTS ($M = 32.4, SD = 17.0$) and those who did not receive service ($M = 29.9, SD = 14.0$).

One-way ANOVA with Bonferroni adjustment, $\alpha = 0.05$ was used to test difference in negative emotional psychological symptoms (depression, anxiety and stress) between service utilization groups and the results can be seen in Table 3.

Table 3. *One-way ANOVA results between service, no service and Barnahús.*

List names	<i>df</i>	<i>F</i>	η^2	<i>P</i>
DASS-21	2	4.07	.093	.021*
DASS- Depression	2	1.80	.043	.173
DASS-Anxiety	2	4.823	.109	.011*
DASS- Stress	2	3.75	.087	.028*

Note. ANOVA= Analysis of variance. DASS= Depression Anxiety Stress Scale. *Significant at $p < .05$

Post-hoc comparisons using the Bonferoni adjustment indicated that the DASS-21, DASS-anxiety, and DASS-stress mean scores of those who received service at Barnahús was significantly higher than those who received service at RTS and those who did not receive service. One-way ANOVA with Bonferroni adjustment, $\alpha=0.05$ was used to test difference in social support between service utilization groups and the results can be seen in Table 4.

Table 4. *One way ANOVA results between service, no service and Barnahús*

List names	<i>df</i>	<i>F</i>	η^2	<i>p</i>
MSPSS	2	1.89	.046	.158
MSPSS-family	2	.67	.017	.515
MSPSS-friends	2	1.249	.031	.292
MSPSS-SO	2	3.15	.075	.048*

Note. ANOVA= Analysis of variance. MSPSS= Multidimensional Scale of Perceived Social Support. SO= significant other. *Significant at $p < .05$

A Post-hoc comparison using the Bonferroni adjustment indicated that the social support from “*significant others*” of those who were referred to service at Barnahús ($M = 19.8, SD = 7.23$) was significantly lower than those who received service at RTS ($M = 24.7, SD = 4.54$).

Association between predictive factors and trauma scores

The association between predictive factors and trauma scores was examined. All participants were female and therefore it was not possible to observe the association between gender and trauma scores. A correlation was not found between the continuous predictive factors (age, time elapsed and number of sessions) and trauma scores. Results can be seen in Table 5.

Table 5. *Correlation results between predictive factors and trauma scores.*

Predictive factors	<i>N</i>	<i>r</i>	<i>p</i>
Age	86	-.032	.775
Time elapsed from assault	85	-.086	.446
Number of treatment sessions	43	-.088	.573

Note. Significant at $p < .05$

A significant difference was neither found with One-way ANOVA $\alpha = 0.05$ on the mean trauma score depending on abuse severity ($F(1, 63) = .005, p = .944, \eta^2 < .001$) nor treatment compliance ($F(1, 37) = 3,245, p = .080, \eta^2 = .081$). The association between treatment compliance and trauma scores was explored further using linear regression. Participant's predicted trauma scores are equal to $35,714 + (-9.55)$ when trauma scores are measured with PCL-5. Participants who finished the service in cooperation with their psychotherapists had 9.55 lower trauma scores on average, compared to those who did not. $R^2 = .283$ meaning that 28.3% of the variation of trauma scores can be explained with treatment compliance.

The association between social support and trauma scores was examined. A moderately negative correlation ($r(83) = -.428, p < .001$) was between social support and trauma scores. The highest negative correlation ($r(85) = -.471, p < .001$) was found between current trauma scores and perceived social support from “family”, measured by corresponding subscale of MSPSS. A weak negative correlation was found between current trauma symptoms and perceived social support from “significant others” ($r(85) = -.336, p = .002$) and “friends” ($r(85) = -.258, p = .002$). Thus, the results indicate that a lack of perceived social support is indeed associated with higher current trauma scores.

Linear regression was used to test the hypothesis that a lack of perceived social support would predict higher current trauma scores. Results can be seen in Table 6.

Table 6. *The results of linear regression analysis. Lack of perceived social support predicting higher trauma scores.*

List names	B	SE(B)	β	F	p	R ²
MSPSS	-.498	.117	-.428	18,119	.000	.428
MSPSS-family	-1.22	.253	-.471	23,118	.000	.471
MSPSS-friends	-.748	.312	-.258	5,752	.019	.258
MSPSS-SO	-1.15	.362	-.336	10,197	.002	.336

Note. MSPSS = Multidimensional Scale of Perceived Social Support. SO= significant other. *Significant at $p < .05$

Discussion

This study examined the current psychological status of those seeking services at the Rape Trauma Service (RTS) during the years 2010-2014. Association between the predictive factors; background variables, time elapsed, abuse severity, and service utilizations, was not found and therefore the results do not support the first three hypotheses. A negative correlation was found between social support and trauma scores supporting the fourth and final hypothesis.

Individual variation in the time elapsed from the sexual assault was substantial; the time from the assault ranged from 16 months to 12 years with a mean of 4 years, meaning that a relatively long time had passed on average since the assault. A possible floor effect could explain the non-association between the time elapsed and trauma scores. The current PTSD status of those seeking service at RTS was examined and the results revealed that the average status of the women was worse than originally expected. The average trauma score for all participants was 33.1 and the median 31.0, signifying that approximately half of the participants are likely to meet the criteria for PTSD where the cut-off for PCL-5 is 33. However, the current depression-, anxiety-, and stress status was overall fine, since the average scores on the corresponding lists indicated a normal status. Unexpectedly, the results revealed that a small group (N=8) that was referred to services at Barnahús had a worse current trauma, anxiety, and stress status than those who received services at RTS and those who did not receive psychological service at RTS. Important is to keep in mind that is not known whether or not, those who were referred to Barnahús received psychological service or not. Since only children 17 years or younger receive service at Barnahús it is possible that the difference is due to fewer coping resources associated with younger age. A difference on social support from significant others was found between those who were referred to services at

Barnahús and RTS, which is not surprising since those who were referred to services at Barnahús are younger and therefore less likely to have a significant other.

Contrary to previous results reported by Brewins et al., (2003) an association between younger age and abuse severity with trauma scores was not found. A possibility is that actual difference is present but does not show because of uneven distribution both in the age variation where a positive skew was present and most subjects within a small age range, and in the categories of abuse severity where the vast majority had severe abuse.

An association between trauma scores and psychological service use was not found. A bias may have occurred because it was not possible to account for the original trauma scores immediately post the assault and therefore those who needed psychological service and those who did not were grouped together in the no service group. The number of psychological service sessions was not associated with lower trauma scores. Similarly, a bias may have occurred because treatment compliance was not accounted for and another possible reason for the non-association is that those with more severe trauma symptoms were in need of more sessions.

Even though a difference on average trauma scores was not found between those who finished treatment in cooperation with their psychotherapists and those who did not, the findings indicated a likelihood of an actual difference between the group means and that the non-significance might be due to small sample size. Supporting this proposal, participants who finished the psychological service in cooperation with their psychotherapists had 9.6 points lower trauma scores on average compared to those who did not, a substantial difference considering the overall average is 33.

The findings revealed a somewhat stronger negative correlation than found by Ozer et al. (2003) between perceived current social support and trauma symptoms. The difference can perhaps

be explained by an interaction between the perceived social support and the time elapsed from the assault found in their analysis. However a comparable negative association was found when compared to their examination when 3 years had elapsed from the trauma, where the average time elapsed post assault in the current study was almost 4 years. The highest correlation found in current study was between trauma scores and perceived support from family and almost half, or 47.1% of the variation of trauma scores could be explained by the perceived social support from family, indicating an important association between the two. A weak negative correlation was found between current trauma symptoms and perceived social support from significant others and friends, meaning that trauma scores were associated with perceived social support from all sources, although varying in degree.

Limitations to the study were an uneven distribution of the values in some of the predictive variables and a small sample size, as previously mentioned. The study was a self-reported quasi-experiment with no comparison group, which can cause a bias. Some data was missing since information was often not available in the medical data records and some of the follow-up surveys were unfinished. Finally, information on whether the participants had prior or post assaults was not examined, which can influence current psychological status.

Sexual assault has extensive and often long-term psychological consequences on the survivors. The current study provides important information on the current status of those who sought services at the RTS during the years 2010-2014. Hopefully the results will shed a light on how prolonged the consequences of a sexual assault can be. These findings emphasize how important it is for resources to be available to survivors immediately after sexual assault and that access to these resources is ensured later. The need of trauma focused treatment and the beneficial effect of social support is highlighted as well. A promotion and enabling of social support is

something that could be focused more on in the treatment work since the current study found them very beneficial from all sources and especially from family.

References

- Alþingi. (2010). Fylgiskjal.
- Antonsdóttir, H., F. og Gunnlaugsdóttir, S., F. (2013). Tilkyntar nauðganir til lögreglu á árunum 2008 og 2009: Um afbrotið nauðgun, sakborning, brotþola og málsmeðferð. *EDDA – öndvegissetur*.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.
- Beck, J. G., Grant, D. M., Clapp, J. D., & Palyo, S. A. (2009). Understanding the interpersonal impact of trauma: Contributions of PTSD and depression. *Journal of Anxiety Disorders*, 23(4), 443-450. Doi:10.1016/j.janxdis.2008.09.001.
- Blevins, C. A., Weathers, F. W., Davis, M. T., Witte, T. K., & Domino, J. L. (2015). The Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5): Development and Initial Psychometric Evaluation. *Journal of Traumatic Stress*, 28(6), 489-498.
- Bradley, R., Greene, J., Russ, E., Dutra, L., & Westen, D. (2005). A multidimensional meta-analysis of psychotherapy for PTSD. *American journal of Psychiatry*, 162(2), 214-277.
- Breslau, N., Kessler, R. C., Chilcoat, H. D., Schultz, L. R., Davis, G. C., & Andreski, P. (1998). Trauma and posttraumatic stress disorder in the community: the 1996 Detroit Area Survey of Trauma. *Archives of general psychiatry*, 55(7), 626-632. Retrieved from <http://archpsyc.jamanetwork.com/article.aspx?articleid=204066>.
- Brewin, C. R., Andrews, B., & Valentine, J. D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology*, 68(5), 748-766. Doi 10.1037/0022-006x.68.5.748.

- Brown, T. A., Chorpita, B. F., Korotitsch, W., & Barlow, D. H. (1997). Psychometric properties of the Depression Anxiety Stress Scales (DASS) in clinical samples. *Behaviour Research and Therapy*, 35(1), 79-89.
- Campbell, R., & Wasco, S. M. (2005). Understanding rape and sexual assault 20 years of progress and future directions. *Journal of Interpersonal Violence*, 20(1), 127-131. Retrieved from <http://jiv.sagepub.com/content/20/1/127.full.pdf>.
- Cohen, S., & Wills, T. A. (1985). Stress, Social Support, and the Buffering Hypothesis. *Psychological Bulletin*, 98(2), 310-357. Doi 10.1037//0033-2909.98.2.310
- Creamer, M., Burgess, P., & McFarlane, A. (2001). Post-traumatic stress disorder: findings from the Australian National Survey of Mental Health and Well-being. *Psychological medicine*, 31(07), 1237-1247.
- Ellis, E. M., Atkeson, B. M., & Calhoun, K. S. (1981). An assessment of long-term reaction to rape. *Journal of abnormal psychology*, 90(3), 263-266.
- Faravelli, C., Giugni, A., Salvatori, S., & Ricca, V. (2004). Psychopathology after rape. *American Journal of Psychiatry*, 161(8), 1483-1485. Doi:0.1176/appi.ajp.161.8.1483.
- Fisher, B. S., Cullen, F. T., & Turner, M. G. (2000). The Sexual Victimization of College Women. Research Report. Bureau of Justice Statistics. Retrieved from <http://www.bjs.gov/>.
- Foa, E. B., & Kozak, M. J. (1986). Emotional Processing of Fear - Exposure to Corrective Information. *Psychological Bulletin*, 99(1), 20-35. Doi 10.1037//0033-2909.99.1.20.
- Gurung, R., Sarason, B., & Sarason, I. (1997). Close personal relationships and health outcomes: A key to the role of social support. *Handbook of personal relationships: Theory, research and interventions (2nd ed)*. Chichester, UK: Wiley, 547-573.

- Hilden, M., Schei, B., Swahnberg, K., Halmesmaki, E., Langhoff-Roos, J., Offerdal, K. . . .
- Wijma, B. (2004). A history of sexual abuse and health: a Nordic multicentre study. *Bjog-an International Journal of Obstetrics and Gynaecology*, *111*(10), 1121-1127.
Doi:10.1111/j.1471-0528.2004.00205.x.
- Hoge, C. W., Terhakopian, A., Castro, C. A., Messer, S. C., & Engel, C. C. (2007). Association of posttraumatic stress disorder with somatic symptoms, health care visits, and absenteeism among Iraq war veterans. *American Journal of Psychiatry*, *164*(1), 150-153.
Doi:10.1176/appi.ajp.164.1.150.
- Ingimarsson, B. (2010). *Próffræðilegt mat á DASS sjálfsmatskvarðanum. Þunglyndi, kvíði og streita* (Unpublished Cand.Psych. dissertation). Háskóli Íslands.
- Karlsdóttir, E., Arnalds, Á. A. (2010). *Rannsókn á ofbeldi gegn konum: Reynsla kvenna á aldrinum 18-80 ára á Íslandi*. Rannsóknastofnun í barna- og fjölskylduvernd. Unnið fyrir Félags- og tryggingamálaráðuneytið.
- Kazdin, A. E. (2000). *Encyclopedia of psychology*. Washington, D.C: American Psychological Association.
- Kessler, R. C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C. B. (1995). Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of general psychiatry*, *52*(12), 1048-1060. Retrieved from <http://archpsyc.jamanetwork.com/article.aspx?articleid=497313>.
- Kilpatrick, D. G., Acierno, R., Saunders, B., Resnick, H. S., Best, C. L., & Schnurr, P. P. (2000). Risk factors for adolescent substance abuse and dependence: data from a national sample. *Journal of Consulting and Clinical Psychology*, *68*(1), 19. Retrieved from <http://psycnet.apa.org/journals/ccp/68/1/19/>.

- Koss, M. P. (1993). Detecting the Scope of Rape - a Review of Prevalence Research Methods. *Journal of Interpersonal Violence*, 8(2), 198-222. Doi:10.1177/088626093008002004.
- Krug, E. G., eds. (2002). *The world report on violence and health*. The world health organization. Retrieved from http://www.who.int/violence_injury_prevention/violence/world_report/en/introduction.pdf.
- Lakey, B., & Cohen, S. (2000). Social support theory and measurement. *Social support measurement and intervention: A guide for health and social scientists*, 29-52.
- Lang, P. J. (1977). Imagery in therapy: An information processing analysis of fear. *Behavior Therapy*, 8(5), 862-886.
- Langford, C. P. H., Bowsher, J., Maloney, J. P., & Lillis, P. P. (1997). Social support: A conceptual analysis. *Journal of Advanced Nursing*, 25(1), 95-100. Doi: 10.1046/j.1365-2648.1997.1997025095.x.
- Lodrick, Z. (2010). Victim guilt following experience of sexualised trauma: Investigation and interview considerations. *The Investigative Interviewer* (1).
- Mason, F., & Lodrick, Z. (2013). Psychological consequences of sexual assault. *Best Practice & Research Clinical Obstetrics & Gynaecology*, 27(1), 27-37. Doi:10.1016/j.bpobgyn.2012.08.015.
- Monson, C. M., Schnurr, P. P., Resick, P. A., Friedman, M. J., Young-Xu, Y., & Stevens, S. P. (2006). Cognitive processing therapy for veterans with military-related posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology*, 74(5), 898. Retrieved from <http://psycnet.apa.org/journals/ccp/74/5/898/>.

- Munley, P. H., Bains, D. S., Frazee, J., & Schwartz, L. T. (1994). Inpatient PTSD treatment: A study of pretreatment measures, treatment dropout, and therapist ratings of response to treatment. *Journal of Traumatic Stress, 7*(2), 319-325.
- NICE (2005). *Post-traumatic stress disorder: management*. Retrieved from <https://www.nice.org.uk/guidance/cg26/chapter/1-Guidance#the-treatment-of-ptsd>.
- Olatunji, B. O., Cisler, J. M., & Tolin, D. F. (2007). Quality of life in the anxiety disorders: A meta-analytic review. *Clinical Psychology Review, 27*(5), 572-581.
Doi:10.1016/j.cpr.2007.01.015.
- Ozer, E. J., Best, S. R., Lipsey, T. L., & Weiss, D. S. (2003). Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin, 129*(1), 52-73.
Doi:10.1037//0033-2909.129.1.52.
- Resick, P. A., Monson, C. M., & Chard, K. M. (2014). *Cognitive Processing Therapy: Veteran/military version: Therapist's manual*.
- Resick, P. A., Nishith, P., Weaver, T. L., Astin, M. C., & Feuer, C. A. (2002). A comparison of cognitive-processing therapy with prolonged exposure and a waiting condition for the treatment of chronic posttraumatic stress disorder in female rape victims. *Journal of Consulting and Clinical Psychology, 70*(4), 867.
- Resick, P. A., & Schnicke, M. K. (1992). Cognitive processing therapy for sexual assault victims. *Journal of Consulting and Clinical Psychology, 60*(5), 748.
- Rothbaum, B., Foa, E., Riggs, D., Murdock, T., & Walsh, W. (1992). A prospective examination of post-traumatic stress disorder in rape victims. *Journal of Traumatic Stress, 5*(3), 455-475. Doi:10.1007/BF00977239.

- Shapiro, F., & Solomon, R. M. (1995). *Eye movement desensitization and reprocessing*: Wiley Online Library.
- Sorenson, S. B., Stein, J. A., Siegel, J. M., Golding, J. M., & Burnam, M. A. (1987). The prevalence of adult sexual assault the Los Angeles epidemiologic catchment area project. *American Journal of Epidemiology*, *126*(6), 1154-1164.
- Swahnberg, I. M. K., & Wijma, B. (2003). The NorVold Abuse Questionnaire (NorAQ) - Validation of new measures of emotional, physical, and sexual abuse, and abuse in the health care system among women. *European Journal of Public Health*, *13*(4), 361-366. Doi:10.1093/eurpub/13.4.361.
- Tjaden, P., & Thoennes, N. (1998). Prevalence, Incidence, and Consequences of Violence against Women: Findings from the National Violence against Women Survey. Research in Brief.
- Uchino, B. N. (2009). Understanding the Links Between Social Support and Physical Health: A Life-Span Perspective With Emphasis on the Separability of Perceived and Received Support. *Perspectives on Psychological Science*, *4*(3), 236-255. Doi:10.1111/j.1745-6924.2009.01122.x.
- Weathers, F.W., Litz, B.T., Keane, T.M., Palmieri, P.A., Marx, B.P., & Schnurr, P.P. (2013). The PTSD Checklist for DSM-5 (PCL-5). Retrieved from <http://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp>.
- Wijma, B., Schei, B., Swahnberg, K., Hilden, M., Offerdal, K., Pikarinen, U. . . . Halmesmäki, E. (2003). Emotional, physical, and sexual abuse in patients visiting gynaecology clinics: a Nordic cross-sectional study. *The Lancet*, *361*(9375), 2107-2113. Doi:[http://dx.doi.org/10.1016/S0140-6736\(03\)13719-1](http://dx.doi.org/10.1016/S0140-6736(03)13719-1).

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, 52(1), 30-41.

Doi:10.1207/s15327752jpa5201_2.

Zimet, G. D., Powell, S. S., Farley, G. K., Werkman, S., & Berkoff, K. A. (1990). Psychometric Characteristics of the Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, 55(3-4), 610-617. Doi: 10.1207/s15327752jpa5503&4_17.