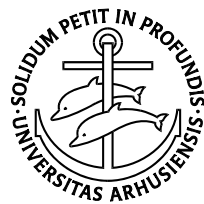


**Assessment of the importance of forensic examination for  
victims of sexual violence – emphasis on legal consequences  
and prevention of postassault trauma**



**PhD thesis**

**Ole Ingemann-Hansen**



**Faculty of Health Sciences**

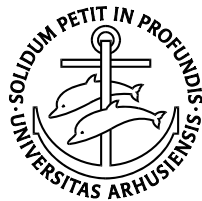
**University of Aarhus**

**2008**

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Cover illustration

Forensic evidence collection using a swab. Foto: Ole Ingemann-Hansen

The thesis has been submitted to the Faculty of Health Sciences, University of Aarhus, Aarhus, Denmark, in partial fulfilment of the requirements for the PhD degree.

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University of Aarhus  
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## Preface

This PhD dissertation is based on studies carried out at the Western Danish Sexual Assault Center (WeDSAC) in Aarhus and the Institute of Forensic Medicine at University of Aarhus (IFM) in cooperation with the police departments in the former Aarhus County. The foundation for the study was laid in 2001 when I became a registrar at the IFM. Together with my supervisors, Associate Professor Ole Brink, Professor Annie Vesterby Charles, Professor Svend Sabroe, and Professor Ask Elklit, we refined the basic ideas, and in 2004 the study was approved by the Graduate School of Health Sciences, University of Aarhus, Aarhus, Denmark, as a PhD study.

I am grateful to the contributions from my supervisors, their unfailing guidance of the research process and encouragement when needed.

Villy Sørensen is thanked for his professional contribution to Paper II, M.Psych. Maiken Knudsen for access to the psychologist data at WeDSAC and her contribution to Paper I, and research assistants TP and Astrid Høy from the WeDSAC for their entry of data.

The police departments of Aarhus, Randers, Grenaa, Silkeborg, and Odder/Skanderborg are thanked for their helpfulness and allowing me access to the files of interest, and the IFM, for giving me time to do my research.

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Ole Ingemann-Hansen, Risskov 2008

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## 2. Abbreviations

A&E	accident & emergency department
ASD	acute stress disorder
CI	confidence interval
DNA	deoxyribonucleic acid
DSM-III	diagnostic and statistical manual of mental disorders (3rd ed.)
DSM-III-R	diagnostic and statistical manual of mental disorders (revision of 3rd ed.)
DSM-IV	diagnostic and statistical manual of mental disorders (4th ed.)
GP	general practitioner
HIV	human immunodeficient virus
IFM	Institute of Forensic Medicine
K <sub>2</sub> O	potassiumoxide
NaF	sodiumfluoride
PPR	prevalence proportion ratio
OR	odds ratio
STD	sexually transmitted disease
WeDSAC	Western Danish Sexual Assault Center
WHO	World Health Organisation



### 3. List of papers

This dissertation is based on the following manuscripts that will be referred to in the text by their roman numerals:

- I.           **Ingemann-Hansen O, Sabroe S, Brink O, Knudsen M, Charles AV.**  
Characteristics of victims and assaults of sexual violence – improving inquiries and prevention  
*(Accepted for publication in Journal of Forensic and Legal Medicine)*
  
- II.           **Ingemann-Hansen O, Brink O, Sabroe S, Sørensen V, Charles AV.**  
Legal aspects of sexual violence – does forensic evidence makes a difference?  
*Forensic Sci Int 2008;180:98-104*
  
- III.           **Ingemann-Hansen O, Elklit A, Sabroe S, Charles AV, Brink O.**  
Sexual assault-induced sequelae: posttraumatic stress disorder and presence of pain  
*(Submitted)*

## 4. Introduction

Sexual violence occurs throughout the world and has profound impacts on victims' health by causing physical injuries, sexual and reproductive problems, as well as mental disorders.<sup>1</sup> In 2002 the WHO launched "World report on violence and health", the first report of its kind to address sexual violence as a common and serious global public health problem.

### 4.1 Defining sexual violence

The WHO report defines sexual violence 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.<sup>1</sup>*

In this dissertation the terms "sexual violence" and "sexual assault" are used to cover episodes of involuntary interpersonal hetero- as well as homosexual acts/contacts, such as completed or attempt to complete penile penetration of the vagina, anus, or mouth, irrespective of ejaculation of semen or not, episodes of penetrating the vagina, anus, or mouth with fingers/objects, and episodes in which a person is believed or considers himself/herself to be assaulted.

The Danish penal code considers the assault as rape when: forced sexual intercourse is by violence or threat of violence (see Appendix A for Danish version).

## 4.2 Focal issues in sexual violence research

The WHO report also suggested several areas of research to achieve a better understanding and prevention of sexual violence, i.e. incidence, risk factors, consequences, and interventions – primary prevention and postassault psychological support – as well as legal sanctions. This makes it opportune to monitor changes in sexual violence over time by registering the personal data of victims as well as the assault settings in order to recommend preventive initiatives.

Studies of sexual violence are based on three different data sources: data from the police and judicial system, data from population based surveys, and data from clinical settings or nongovernmental organisations. Statistics based on police files have long been perceived as a reliable and (e.g. in Denmark) as the only measure of the incidence of sexual assault. However, both police statistics and surveys have weaknesses. This has previously been demonstrated in the field of interpersonal violence with studies showing great differences between police data and data obtained from an accident & emergency department (A&E).<sup>2, 3</sup> Hence, awareness of the potential of rape crisis centres, as data sources, should be reinforced.

The incidence of sexual assault has been estimated in studies that have involved several means of selecting samples or cross-sectional prevalence surveys.<sup>4-6</sup> Thus great uncertainty as to the real incidence rate is present. Previous Danish attempts are old or involved small samples.<sup>7-9</sup> Studies concerned with risk factors for sexual violence (using multivariate analysis) are rare,<sup>10</sup> but knowledge of certain age groups, certain places of meeting or assault are details desirable for preventive use. Especially knowledge concerning factors involved in the sequence of assault events is limited.<sup>11, 12</sup> An exceptional opportunity to reveal detailed information on victims and assaults is now available due to the existence of sexual assault

centres. Furthermore, the centres support victims without police notification, implementing the possibility of estimating the “real” figure for sexual violence in the communities.

The findings obtained at the forensic evidence collection and documentation are essential in studying the legal outcome. It is important to know how the cases end legally and whether police reporting matters with regard to prosecution or conviction of the suspect. Furthermore, we need to know more about factors that correlate with the legal outcome, and to coordinate the efforts of forensic clinicians and police detectives.<sup>13</sup> Some studies exist examining victim, situational, and forensic determinants in assessing associations with conviction; however, all use forensically examined cases only and are inconsistent in their findings.<sup>14-17</sup> The latest Danish contribution is 14 years old and included only 31 cases.<sup>18</sup> Hence, studies of notified cases without examination fail to provide the necessary data.

Evaluating programs aimed at treating and supporting victims for effective and appropriate acute treatment and follow-up can be achieved by, for instance, the determination of the presence of postassault sequelae. The presence of posttraumatic stress disorder (PTSD) has been thoroughly examined after sexual assault, but long-term follow-up is lacking, probably due to the chronicity of the disorder, and thus, perhaps, less required.<sup>19, 20</sup> However, we need to know the victim’s health condition several years after the assault and whether the medical and psychological follow-ups are the right ones. Some other postassault negative health consequences (e.g. pelvic pain) have been reported but not in a longitudinal design and to a much lesser degree.<sup>21-23</sup> From a health care point of view, the possible interaction between PTSD and pelvic pain is relevant in assessing the need for interventional treatment, but this possible interaction has not yet been assessed.

### **4.3 Aim**

The aim of this dissertation was to analyse the epidemiologic, forensic, legal, and health related aspects of sexual violence using data pooled from WeDSAC, IFM, and police departments. Specifically, the aim was to describe sociodemographics, assault characteristics, and forensic findings of adolescent/adult victims of sexual assault in Greater Aarhus, and hereby approach the “real” incidence and estimate the “dark figure” – cases not seen by the police. The legal disposition and law enforcement of police-reported cases should be evaluated in terms of associations between conviction and sociodemographics, assault characteristics, and forensic findings. Furthermore, attempts were made to estimate the prevalence of PTSD, pelvic pain, and back pain several years postassault, and to determine their associations with sociodemographics, assault characteristics, forensic findings, and legal outcome. The hypotheses tested included the perpetrators association with assault events, correlation between assault events and conviction, and the sociodemographics and assault events predicting postassault psychopathology. The ultimate goal was to improve our knowledge of victims attending a rape crisis centre, knowledge that may help to improve preventive initiatives directed against sexual violence.

## **5. Incidence of sexual assault**

The incidence rate and lifetime prevalence of sexual assault have been assessed several times with several different results. The estimates are all based on surveys that differ in study sample, recruitment area and setting, year of study, and in definition of sexual violence. Further elaborating on the latter, the definition is restricted legally to rape if police files are involved. In the case of population surveys the definition is broad, and the decision as to whether one is dealing with a case first of all is a subjective decision made by the person in question. In case of comparable studies, however, the results still can be diverse because of factors like accessibility to a rape crisis centre, hospital, and police, as well as to local tradition and culture.

### **5.1. Annual incidence rate**

Police statistics in Denmark revealed that the number of reported rapes/attempted rapes during the last decade was 500 cases a year. In 2000-2004 the average annual incidence rate was 9.1 per 100,000 people > 12 years.<sup>24</sup> Determining annual incidence rates is mainly a Nordic issue, and Bang introduced the “rape-index” in 1993.<sup>25</sup> Based on a rape trauma service referral sample, she reported from Oslo a rape-index of 37 per 100,000 inhabitants. A Nordic multicentre study used data from 1996 to estimate the annual incidence for very selected samples.<sup>4</sup> In a Helsinki sample of police-reported and forensic-examined victims, the annual incidence rate was 21 per 100,000 females >12 years. Samples consisting of all referrals to rape trauma services in Oslo and Reykjavik had annual incidence rates of 60 and 110 per 100,000 females >12 years. Two U.S. studies from emergency departments have estimated an

annual incidence rate of 185 per 100,000 females > 14 years and 25 per 100,000 inhabitants.<sup>26, 27</sup> None of the three latter incidence studies concerned assaults taking place inside a specific geographic area.

## 5.2 Prevalence

Another Nordic multicentre study examined a selected sample of women older than 18 years attending a department of gynaecology as in- or outpatients.<sup>28</sup> Using a very broad range of sexual abuse, overall lifetime prevalence was estimated at 17% to 33%.<sup>29-31</sup> Lifetime prevalence found in several studies is given in Table 5.1. As can be seen, the estimates ranging from 1% to 33% need to be interpreted carefully because of differences in sample selection, size, or age, and in the definition of sexual assault.

**Table 5.1.** Lifetime prevalence of sexual assault in selected studies

<b>Study</b>	<b>Sample</b>	<b>Method</b>	<b>Participants (response rate)</b>	<b>Definition of assault</b>	<b>Lifetime prevalence</b>
Basile <sup>32</sup> 2001/2003 USA	Population (ICARIS-2) F/M >18 yrs	I	9684 (4877 (F) 4807 (M))	Any type of vaginal, oral, or anal penetration or intercourse against will	11% (F) 2% (M)
Olshen <sup>33</sup> 2005 USA	Students F/M 14-19 yrs	Q	8080 (68%)	Physically forced to have sexual intercourse	10% (F) 5% (M)
Kessler <sup>34</sup> 1990/1992 USA	Population (NCS) F/M 15-64 yrs	I	5877 (3065 (F) 2812 (M))	Rape; sexual intercourse by threat or use of force	9% (F) 1% (M)

Table 5.1. continued

Study	Sample	Method	Participants (response rate)	Definition of assault	Lifetime prevalence
Acierno <sup>10</sup> 1989/1991 USA	Population (NWS) F>18 yrs	I	4009	Rape	15%
Swahnberg <sup>30</sup> 1999/2000 Sweden NorVold used here and next 5 studies	Three Departments of Obstetrics & Gynaecology F >18 yrs	Q	2439 (81%)	Sexual abuse; against the will touched body parts or genitals (victim's/assailant's), sexual humiliation, attempt or complete penetrating of vagina, mouth, or rectum	16%-17%
Swahnberg <sup>30</sup> 1999/2001 Sweden	Population F 18-64 yrs	Q	1168 (61%)	Do.	17%
Hilden <sup>35</sup> 1999/2000 Denmark	Gynaecologic outpatient clinic F >18 yrs	Q	798 (79%)	Do.	21%
Wijma <sup>28</sup> 1999/2001 Norway	Dept. of Obstet & Gynaecology F >18 yrs	Q	710 (71%)	Do.	23%
Wijma <sup>28</sup> 1999/2001 Iceland	Dept. of Obstet & Gynaecology F >18 yrs	Q	670 (67%)	Do.	33%
Wijma <sup>28</sup> 1999/2001 Finland	Dept. of Obstet & Gynaecology F >18 yrs	Q	610 (85%)	Do.	27%
Alikasifoglu <sup>36</sup> 2000 Turkey	Students F 15-20 yrs	Q	1871	Sexual abuse; unwanted touching or digital/penile penetration	13%
Plichta <sup>37</sup> 1998 USA	Population (subsample of CFSWH) F 18-64 yrs	I	1821	Sexual assault, rape, forced sex as an adult	20%*
Masho <sup>6</sup> 2002/2003 USA	Population F >18 yrs	I	1769	Rape; without consent, use/threat of force to penetrate with penis/object vagina, anus, mouth	18%
Champion <sup>38</sup> 2000 USA	Population F 16-20 yrs	I	1236	Tried to or had sex against will	7%
Resninck <sup>39</sup> 1989/1991 USA	Population (subsample of NWS) F >18 yrs	I	214	Rape; non-consensual using force/threat and penetration of vagina, rectum, or mouth as an adult	7%*

F: females. M: males. I: telephone interview – no response rate is mentioned. Q: questionnaire. NCS: National Comorbidity Survey. CFSWH: The Commonwealth Fund's 1998 Survey of Women's Health. NWS: National Women's Study.

\* Adulthood prevalence (>18 yrs)



### 5.3 Dark figure

The number of victims of sexual violence not registered at the police authorities is the so-called “dark figure”. This is often expressed as the ratio between the number of unknown and known cases to the police.<sup>40</sup> Insight into this ratio can in part be obtained from women’s shelters, population-based research, and, during recent years, from sexual assault centres. First statement among victims medically examined in Trondheim and Copenhagen revealed dark figures at 1.3 and 1.7 (i.e. 30% and 70% larger than the cases seen by the police).<sup>9, 41</sup> Later statements repeated the findings.<sup>42, 43</sup> The dark figure could be estimated to be 1.9 in a sexual assault clinic in Edinburgh.<sup>44</sup> Furthermore, dark figures in two of the above-mentioned U.S. lifetime prevalence population studies corresponded to 8.3 and 5.<sup>6, 39</sup>

Like estimated lifetime prevalence, the dark figure must be interpreted carefully because persons proclaiming to be victims in population studies might not have conceptualised the assault as a legal rape in the first place.<sup>45</sup> Obviously, when further analysing the presented annual incidence rates and lifetime prevalence, the dark figure must not be disregarded. Knowledge of this problem is essential in order to create services available to this “silent” group, because they suffer as much as do victims consulting a centre.<sup>6</sup> Estimates from multidisciplinary public centres may help to improve this knowledge. Integration of the centres into a formal postassault support organisation will, however, decrease the dark figure, and in the future the definition should be changed to *victims neither known by the police nor the multidisciplinary public centres*.

## **6. Characteristics and legal outcome of sexual assault**

Studies examining descriptive data regarding the victims and the events of sexual assaults have to be interpreted with caution – just as is the case for incidence/prevalence. Data covering completed or attempted sexual violence are collected from cases reported to the police and followed by a medical examination, cases notified to the police but without medical examination, medically examined cases but not police-reported ones, and from population studies.

### **6.1 Victim and assault characteristics**

Appendix B summarises some of the research on sexual violence with emphasis on victim and assault characteristics. Six Danish studies cover the period 1975-2001.<sup>7-9, 43, 46-48</sup> Several studies outside Denmark have been conducted, and the majority of findings are within the Danish estimates. Because of differences in study selection, characteristics vary. Thus 0.02% to 10% are male victims,<sup>44, 46</sup> a private crime scene is involved in 37% to 84%,<sup>4, 49</sup> self-reported alcohol consumption in 29% to 71%,<sup>42, 50</sup> assaults by strangers in 6% to 75%,<sup>14, 51</sup> perpetrator use of physical coercion in 20% to 90%,<sup>44, 52</sup> and victim subjected to completed intercourse from 29% to 100%.<sup>26, 51</sup>

### **6.2 Forensic findings**

The documentation of genital lesions ranges from 10% to 87%.<sup>15, 38, 43, 53-58</sup> Differences in the use of colposcopy, emphasis on prepubertal girls, inclusion of redness/swelling as a lesion,

and differences in the involvement of law enforcement are variations in study methodology. Bodily (extra-genital) lesions are seen in 25% to 90% of the cases.<sup>14, 59, 60</sup> Proportions of cases with identification of sperm/semen at microscopy range from 13% to 63%.<sup>5, 7, 15, 17, 18, 41, 61-66</sup> The findings are also summarised in Appendix B.

### **6.3 Legal outcome**

Complainants of sexual violence can report the incident to the police department, or they can seek help from the local rape crisis referral centre. Often, but not always, the police authorities in Aarhus request a medical examination to be conducted at the WeDSAC. Some victims choose to file a police report after initial referral at WeDSAC.

Conviction rates have previously been determined to range from 10% to 69% of cases filed with the police, and statistically significant associations between successful prosecution and evidence of trauma, use of weapons, and young age have been found, but inconsistently.<sup>15-17, 41, 64, 65, 67-69</sup> In other studies, focus was on charge filing, and these studies identified, once again inconsistently, severe coercion, known assailant, young age, documented injuries, and extralegal victim characteristics, such as behaviour at the time of the incident and the victim's credibility, as being associated.<sup>59, 63, 70, 71</sup> Previous Danish studies revealed conviction rates from 15% to 24% and multiple injuries as being associated with imprisonment.<sup>7, 18, 47, 48</sup>

One circumstance not mentioned or taken into consideration in the reviewed literature is incorrect or false allegation made by the "victim". It is important to distinguish between unfounded cases – the overall term – and false allegations. False allegation demands deliberate deceit from the false claimant, whereas unfounded cases could be an honest mistake.<sup>72</sup>

False allegations of sexual assault have most likely existed as long as the “truth” concept. Petersen et al. called it “notorious” in 1926 and Kerr “frequent” in 1954.<sup>73, 74</sup>

Aiken suggests a model of the concept of false allegation with three elements of reference for either false accusation or false denial antecedent of a motivation to deceive: perpetrator, sexual act, and setting.<sup>72</sup> A false allegation has to be false with respect to at least one of these elements of reference. The dynamics behind false allegations are unified in a tripartite model with providing alibi, gaining revenge, and seeking attention as reasons for the false statement. Furthermore, Kanin cites a great variation from 1% to 80% in the extent of false reporting, and she, herself, demonstrates a proportion of 41%.<sup>75</sup> Research in false allegations suffers from diverse definitions and differences in police agency criteria for unfounded cases.<sup>76</sup>

## **7. Posttraumatic impact of sexual assault on health**

Negative mental and physical health sequelae are consequences of sexual victimisation, and research has documented an association between sexual assault and posttraumatic stress disorder (PTSD) and somatoform symptoms.<sup>19, 23, 34, 77-81</sup>

### **7.1 Postassault traumas in general**

Posttraumatic reactions have long been subjected to various kinds of traumas, usually in relation to war. DaCosta observed in the American Civil War features of soldiers similar to present day diagnostic criteria for PTSD (DSM-IV).<sup>82</sup> This nomenclature was first in relation to findings of maladjustment among Vietnam veterans.<sup>83, 84</sup>

PTSD is an anxiety disorder that can develop after exposure to a terrifying event or ordeal in which grave physical harm occurred or was threatened. In general, PTSD can be seen as an overwhelming of the body's normal psychological defences against stress. Thus, after the trauma, there is abnormal function of the normal defence systems, which results in certain symptoms. The symptoms are produced in three different ways: re-experiencing the trauma, persistent avoidance, and increased arousal. If the duration of symptoms is more than 3 months, a diagnosis of chronic PTSD is made, and spontaneous cure is not expected. Most people suffering from a posttraumatic syndrome should expect a good response to treatment within 3 months. However, a small percentage of patients with PTSD, particularly those with another psychosocial disorder, remain symptomatic for longer periods of time.<sup>85</sup>

The knowledge of the epidemiology of PTSD in general populations is predominantly U.S.-based. By using DSM-III as diagnostic criterion, Helzer et al. reported a lifetime prevalence

of PTSD of 1% in a sample interviewed personally in 1981.<sup>86</sup> In 1992, in another representative national sample, Kessler et al. using DSM-III-R estimated the lifetime prevalence to be 10% for females and 5% for males based on interviews.<sup>34</sup> Also using DSM-III-R, Resnick et al. and Breslau et al. estimated lifetime prevalence of PTSD to be 12% for females and 11% for females and 6% for males, respectively.<sup>87, 88</sup> Using DSM-IV, lower lifetime prevalence was reported in two community samples in the U.S. and Germany of young adults: 3% for females and 1% for males.<sup>89, 90</sup> PTSD after non-sexual trauma was stated to be 20% to 45% in unselected traumatised populations.<sup>91</sup> Among a population of A&E patients, 24% were estimated by Elklit and Brink to be victims of physical assault that met the requirements for the Acute Stress Disorder (ASD).<sup>92</sup>

Other postassault psychological symptoms mentioned in the literature represent depression, anxiety, and sexual dysfunction,<sup>37, 77, 93</sup> problem drinking,<sup>94, 95</sup> and chronic pelvic pain<sup>21, 22, 79, 96, 97</sup> and back pain.<sup>98-101</sup>

## **7.2. Sexual assault sequelae**

Regarding sexual violence, PTSD was described to be present at various time intervals postassault and in different settings. ASD was described in 71% of the victims in contact with a rape crisis centre,<sup>102</sup> and PTSD characterised 94% of victims 2 weeks after a sexual assault.<sup>19</sup> In total, 47% were diagnosed with PTSD after 3 months' follow-up,<sup>19</sup> 95% after 9 months in victims of rape decided by a court of law,<sup>103</sup> 62% in a small convenient sample from a crisis centre 1 to 10 years after the assault,<sup>104</sup> 65% in another convenient sample of women seeking treatment for premenstrual syndrome,<sup>105</sup> 70% in a community cross-sectional sample,<sup>95</sup> and in national samples 46% and 32% had PTSD.<sup>34, 87</sup>

Reiter et al. states that nonsomatic pelvic pain is one manifestation of somatisation associated with sexual trauma.<sup>106</sup> Holmes et al. found that 18% of forensic-examined victims had pelvic pain at 6 weeks' follow-up.<sup>107</sup> Hilden et al. and Campbell et al. found in a women's clinic that 12% and 50%, respectively, of patients with a history of sexual assault had pelvic pain.<sup>35, 108</sup> Faravelli et al. reported that 83% of rape victims whose assailants had been convicted in a court of law had genital pain 9 months after the attack.<sup>103</sup>

Several studies have indicated a higher frequency of PTSD in victims of sexual assault than in victims of other traumatic events.<sup>34, 78, 87, 90, 103, 109-111</sup> Why sexual violence is associated with such a high occurrence of serious health consequences could lie in the nature of the assault. Some victims get injured, several experience a threat to life, and many perceive a violation of integrity and dignity.<sup>112</sup> The forced intrusion into intimacy humiliates and disturbs the victim's self-image and perception of the surroundings. Furthermore, the stressful life event not only affects the victims themselves but also interpersonal aspects, such as relationships to fellow humans and to colleagues, due to sickness absenteeism.<sup>113</sup>

### **7.3 Risk factors of postassault psychopathology**

Identifying risk factors associated with PTSD and somatoform symptoms like pelvic pain and back pain may permit early intervention in victims at greatest risk of developing postassault psychopathology. The literature revealed several specific demographic background and assault characteristics, victim's experiences during assault, and feelings and formal responses after the assaultive episode predictive of PTSD or pelvic and back pain.

Young age and exposure to complete intercourse were found by Kilpatrick et al. to be individually associated with PTSD.<sup>78</sup> The relationship to the perpetrator has also been

reported as a risk factor for PTSD: either as a known perpetrator,<sup>114</sup> as a stranger,<sup>115</sup> or using data from a population survey evaluated by regression analysis both as a partner and a stranger.<sup>116</sup> Victims exposed to moderate or severe coercion, including weapons, physical injury, and perceived life threat during the assault, were all found to be associated with PTSD in either univariate<sup>87, 115, 117</sup> or multivariate analyses.<sup>118</sup> The telephone survey by Acierno et al. also demonstrated physical injury as a risk factor for PTSD, whereas the media-recruited sample by Ullman & Filipas after multivariate regression had no significant associations with injury or relationship to assailant.<sup>10, 119</sup>

Postassault victim responses, such as self-blame and avoidance coping, are attributable to PTSD symptoms as well as to perceived negative social reactions upon disclosure of assault.<sup>20, 116, 120, 121</sup> Negative reactions can be perceived when the person disclosed to take control of the victim's decisions, blame or stigmatise the victim, or distract or behave egocentrically.<sup>119</sup> It is argued that social support influences coping by negative reactions promoting avoidance and positive reactions enhancing approach coping; but whereas negative reactions has tremendous effects on self-rated recovery after a sexual assault, positive experiences assist to a lesser degree or remain neutral.<sup>122</sup> Social responses appear to differentiate from informal (friends, family) to formal support providers (psychologists, rape crisis centre, police) because more positive reactions are achieved if informal support. Support is emotionally offered equally from both informal people and rape crisis centre workers, whereas disclosing to physicians or the police has more negative responses and thus is associated with less self-rated recovery. However, in the only study examining the relationship between the legal outcome of the reported sexual assault case and PTSD, no significant association in an univariate test is found.<sup>69</sup>



Research in risk factors associating somatoform symptoms with sexual violence is mostly retrospective, with pelvic and back pain as inclusion criterion. A series of univariate analyses reported partner relationship, physical injury, and perceived life threat as having significance for occurrence of gynaecologic symptoms.<sup>108</sup> Hilden et al. showed in a logistic regression model the significance of completed intercourse for chronic pelvic pain, whereas the relationship with the assailant remained non-significant.<sup>35</sup>

## **8. The first centre for sexual assault victims in Denmark<sup>123</sup>**

A sexual assault centre is a place where people who have sustained a sexual assault can seek immediate help and enrol for follow-up treatment. The police authorities use the centres to obtain a thorough description of possible injuries and assure evidence collection for later legal causes. To better understand the proceeding methodology chapter concerning collection of present data, and to accommodate the need of knowing the actual routines of examination and follow-up of the victims in order to suggest new implements and improvements of the handling of victims, it is imperative to give a more thorough description of the rape crisis centre in Aarhus.

### **8.1 The establishment**

Up to the late 1990s in Denmark, victims of sexual assault had to apply to the police, to their own GP, to a psychologist, or to the local women's crisis shelter. The police could refer to the forensic clinician for documentation and evidence collection, the GP could screen for STD, the psychologist could begin costly dialogue therapy, and the crisis shelter could offer accommodation. Hence, the range of help offered to victims of sexual assault was accidental.<sup>124</sup>

During the 1980s and 1990s, several sexual assault centres were established in the Nordic countries to aid in the understanding of the health consequences of sexual assault. The first multidisciplinary centre opened 1986 in Oslo at the municipal emergency ward,<sup>25, 102, 125, 126</sup> and was followed by a centre in Trondheim in 1989,<sup>41</sup> in Reykjavik in 1993,<sup>127</sup> and in Uppsala

in 1995.<sup>128</sup> At the same time, multidisciplinary public centres in Manchester and London, U.K.,<sup>52, 129</sup> Vancouver, Canada,<sup>63</sup> and the U.S. opened.<sup>15, 64, 65</sup>

Prior to the establishment of a centre in Aarhus, several years of fundraising had proceeded. In April 1998, the Danish Parliament finally decided to improve the treatment of victims of violence and sexual assault. This was followed by publication of guidelines from The Danish National Board of Health in October 1999.<sup>130</sup> The purpose was to reduce the after-effects of the assault through care and treatment. The guidelines pointed out that every single female who attended the health services should be offered care, treatment, and a medical examination with forensic evidence collection, and that there should be appropriate cooperation with the police authorities to assure absence of unnecessary delay. Trust, safety, and interdependency were other keywords in the guidelines.

The WeDSAC in Aarhus was established at the A&E and has been a model for the subsequent Danish centres. The centre in Copenhagen opened in 2000 and was followed by centres in Herning, Aalborg, Odense, Kolding, Hillerod, and Ronne (approx 600,000 inhabitants per centre).

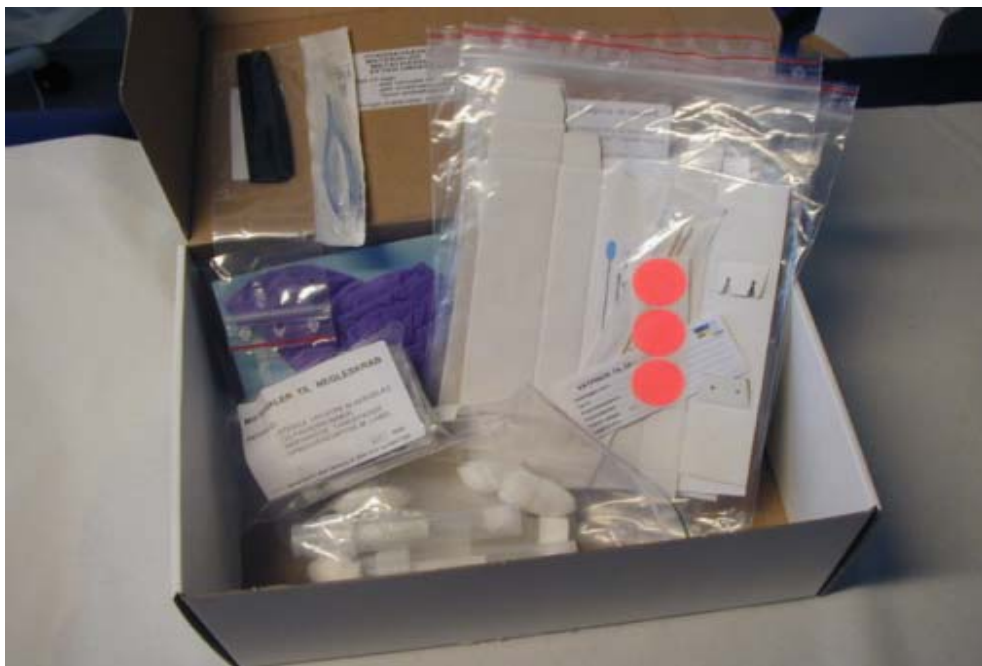
## **8.2 The most important features of WeDSAC**

- open 24 hours
- investigation of both sexes
- lower age limit 12 years
- no referral is needed nor is police-notification
- the victim meets nurses and clinicians and has a forensic examination
- medical examination for STD
- legal counselling
- separate room for police questioning
- the victim can stay the night
- the next day the victim can talk to a psychologist follow-up by nurse, psychologist, and/or Department of Gynaecology

## **8.3 Forensic examination**

The forensic clinician introduces the victim to the examination, secures consent, and explains that confidentiality to the police is not maintained. The examination begins using a well-equipped kit-box containing utensils needed for the qualified forensic evidence collection (Figure 8.1). The kit-box was made up in cooperation with the Danish Technological Institute and IFM, and was approved by the Danish authority authorised to evaluate quality assurance (DANAK). The box secures the chain of custody because all material necessary for evidence collection is available, it is sterilised or DNA free, and the clinician is familiar with and has a thorough knowledge of the utensils.

The victim is asked to stand on a piece of paper in order to collect any falling debris, hairs, or fibres while clothing is secured piece by piece in paper bags. During the subsequent top-to-toe and genital examination, all injuries are noted (Figure 8.2) and documented on body/genital diagrams (Appendix D). Specimens for semen and blood are routinely collected with a swab from the inside cheek, the introitus and fornix vaginae, and the anus. If indicated by the victim's story, or if visible secretion, additionally samples for semen, blood, saliva, and smudges are taken. Scraping of fingernails with toothpicks and a swab from the inside cheek for DNA reference are performed. Finally, urine and blood samples are collected – urine in a 300 ml plastic container and blood in tubes with NaF or K<sub>2</sub>O. Smears are made from the routine swabs and stained with haematoxylin-eosin by a laboratory assistant the next morning, whereupon the clinician looks for spermatozoa under light-microscopy. Only the physician can change the procedure, and, of course, if the victim disagrees. All information is registered in a specially designed protocol for easy transformation to a database.



**Figure 8.1.** Contents of the Kit-box with utensils for the forensic examination.



**Figure 8.2.** Lesions at the back of the thigh and in the face.

The genetic and toxicological analyses are made on request from the police authorities. The genetic evidence is analysed for semen, blood, saliva, and skin, and DNA type at the Forensic Genetic Department. At the Forensic Chemical Department specimens are analysed for alcohol and drugs. Forensic scientists examine the clothing secured with regard to damage and foreign hairs/fibres, and the geneticists examine the clothing for semen or blood smudges.

#### **8.4 Medical examination, treatment, and follow-up**

No routine prophylaxis is given, but pregnancy tests, contraceptives, antibiotics, and tetanus and hepatitis vaccine are used when needed. If HIV infection is suspected (e.g. in case of homophile assault, assailant is intravenous drug user, or of African origin) the victim is referred to the Department of Infectious Diseases. Injuries requiring treatment are referred to the A&E surgeon next door. A screening test for chlamydia infection is performed routinely, whereas gonorrhoea and syphilis are examined on indication.

Regarding follow-up, the psychologist contacts the victims the day after the assault and a consultation is proposed. Subsequent consultations are offered, together with relatives too, if desired. The nurse performs medical follow-up, and a physician is available if treatment is required. The victims receive the results of the chlamydia, HIV, and hepatitis tests (base-line values) and receive further testing if necessary.

The just described procedure at WeDSAC is in general accordance with several other centres worldwide; however, local differences in setting, medical treatment (e.g. routine prophylaxis), and follow-up do exist.<sup>4, 9, 15, 39, 41, 50, 52, 62-65, 107, 125, 127-129, 131-136</sup>

## 9. Methodology

Three different substudies (Papers I, II, and III) were conducted, and Table 9.1 summarises the setups.

### 9.1 Materials

The research is a survey study based on a 5 years' registration during the period November 1999 to December 2004. The area (formally known as Aarhus County – now a former term due to a large domestic reorganisation in 2006 with the construction of 5 regions instead of 15 counties) includes the second largest city in Denmark and during the study period had an average of 645,000 inhabitants (539,000 people between 12-87 years). This equals 1/8 of Denmark's population. This area is used in substudies 1 and 2. The area of referral to WeDSAC covers 890,000 people of whom 750,000 are older than 12 years of age and is used in substudy 3. The area houses several educational institutions, e.g. a university.

Persons claiming to have been exposed to sexual violence upon arrival at the a) WeDSAC, b) IFM, and/or c) the police departments in Aarhus, Randers, Grenaa, Silkeborg, and Skanderborg/Odder were registered.

Information from the victims undergoing a medical examination at WeDSAC was recorded in a standardised registration form. Information from victims seen by the psychologists at WeDSAC was identified in the psychologists' records or databases. Every referral to the WeDSAC was interpreted as a case of sexual assault. Cases from the police were identified in the local systems at the police departments by using search criteria regarding sexual crime in



the Danish penal code<sup>137</sup> (§216, by violence or threat of violence forced intercourse; §224, sexual act other than vaginal

**Table 9.1** Design and objectives of the substudies conducted on the basis of cases of sexual assault identified at the WeDSAC, IFM, and the police departments in Greater Aarhus (N=579)

<b>Study</b>	<b>Design</b>	<b>N</b>	<b>Objectives</b>	<b>Paper</b>
1	Survey (Cohort for incidence rate)	423	Incidence rate Dark figure Victim characteristic Assault characteristic Forensic findings Correlation between determinants	I
2	Survey	307	Legal disposition Forensic findings Association to conviction Evaluation of forensic examination	II
3	Survey Questionnaire	93	PTSD Somatoform symptoms Prevalence and predictors	III

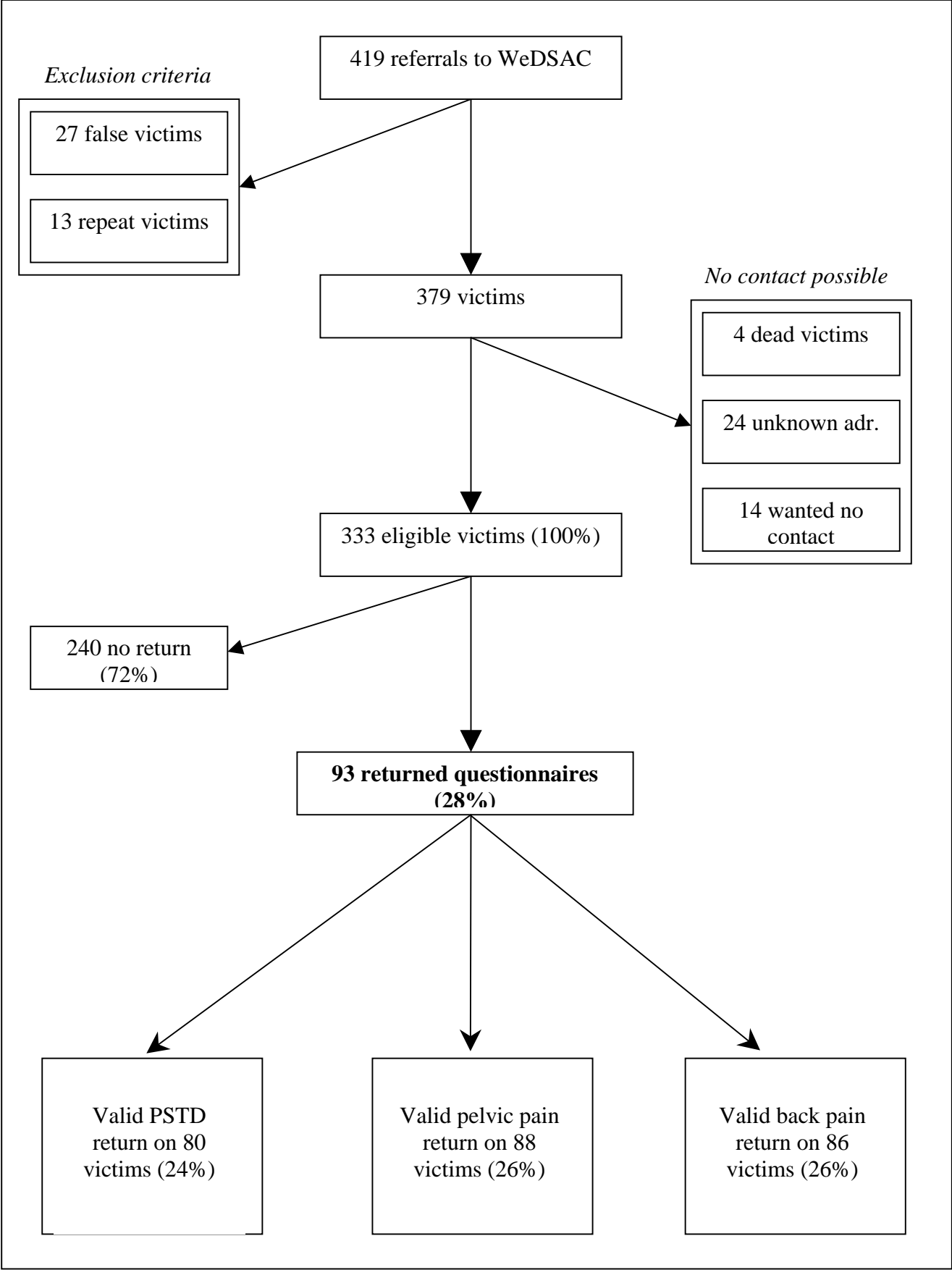
intercourse under similar conditions; §225, homosexual assault under similar conditions; §222, if the sexual intercourse aggrieved a minor (< 15 years) under use of coercion), and only if the aggrieved was older than 12 years of age.

In the study period, a total of 579 cases of sexual assault were identified in one or more of the files at WDSAC, IFM, or the police.

In substudy 1, cases arising outside the area of Greater Aarhus (125) were excluded from the baseline material along with known false reports/allegations (31). This leaves 423 cases of sexual violence. Citizens within the area of Greater Aarhus were the cohort for incidence rate measure, and 18 repeat victims were excluded prior to this measure, but otherwise included.

In substudy 2, the inclusion criterion: every victim (male/female) of sexual violence during the study period with a completed report at the police departments in Greater Aarhus, whether referred or not to the WeDSAC or only involving the police authorities, were met by 307 cases.

The third substudy was a questionnaire with follow-up periods from 2 to 5 years from baseline referral. The inclusion criterion was referral to WeDSAC no matter what the area of assault was. A total of 333 victims received the five-page questionnaire regarding present PTSD symptoms measured by The *Harvard Trauma Questionnaire* Part IV (see appendix C).<sup>138</sup>, and episodes of pelvic pain or back pain (cross-sectional outcome variables). In total, 93 (28%) returned the questionnaire. Figure 9.1 shows a flow chart of the questionnaire survey.



**Figure 9.1.** Flowchart of questionnaire study

## 9.2 Variables in use

Table 9.2 presents an overview of all variables in use. Some of the variables are described in detail because of the great diversity and non-specification in the literature.

Sociodemographics were age, gender, dwelling, and occupation. Circumstances of the assault described when, where, how and by whom, accordingly: weekday and time of assault (when), place of assault (where) was victim's residence, assailant's residence, and other private home and classified as "private place of assault", whereas place of work or education, bars, outdoors settings, and cars were called "public place of assault". The character of the assault (how) – the sexual act – was complete or incomplete if penetration attempted but not achieved. Use of coercion was categorised as none/threats or physical violence. Threats could be either threats of violence against the victim perceived to be executed immediately or later, or threats of violence against someone known by the victim. The violence used was divided into three groups: mild (restrained), moderate (blow, kick, bite) or severe (weapons or strangulation). The variable used for describing the victim-assailant relationship (whom) was differentiated into five levels according to the Nordic Textbook of Forensic Medicine and formerly used in a similar way by Haugen et al.:<sup>42, 139</sup>

1. Partner – victim and assailant know each other sexually, e.g. present or ex-husband/boyfriend
2. Family – assailant is a relative
3. Acquaintance – knowing one another but have not had a sexual relationship before
4. Contact/Date – victim and assailant have only just met, typically less than 24 hours before, and have not had a sexual relationship
5. Stranger – victim and assailant have not previously seen one another.

**Table 9.2.** Overview of variables in use

<b>Variables</b>	<b>Subdivisions</b>						
<b>Sociodemographics</b>							
Sex							
Age							
Ethnicity	Denmark	Scandinavia	Europe	Middle East	Africa	Asia	America
Dwelling{	<i>Alone:</i>	Alone	Alone with kids				
	<i>Somebody:</i>	Partner	Parents	Others	Institution	Education	
Occupation{	<i>Employed:</i>	Employed	Education				
	<i>Unemployed:</i>	Unemployed	Retiree				
<b>Circumstances of the assault</b>							
Time	Year	Month	Day				
Meeting place{	<i>Private:</i>	Victim's,	assailant's,	other private home			
	<i>Public:</i>	Work	Education	Bars	Outdoor	Cars	
Place of assault{	<i>Private:</i>	Victim's	Assailant's	Other private home			
	<i>Public{</i>	<i>Indoor:</i>	Work	Education	Bars		
		<i>Outdoor:</i>	Street	Cars	Park/forest/beach		
Sexual act{	<i>Complete:</i>	Vaginal,	anal,	mouth penetration			
	<i>Attempt</i>						
Ejaculation							
Coercion{	<i>No physical:</i>	None	Threats				
	<i>Physical:</i>	Mild	Moderate	Severe			
Victim-assailant{	<i>Known:</i>	Partner	Family	Acquaintance	Contact		
	<i>Unknown:</i>	Stranger					
Disclosure to	Police	Examination	Psychologist				
Time delay	Assault-examination		Assault-police report				
<b>Medical findings</b>							
Genital Lesions	Abrasion	Swelling	Wound				
Bodily lesions	Redness	Bruising	Abrasion	Swellings	Wounds	Fractures	
Alcohol	Self-reported	Judged	Blood				
Sperm	Microscopy	Laboratory					
DNA-match between victim and assailant							
<b>Legal outcome</b>	No suspect	No charge	Dropped	Acquittal	Guilty	False	
<b>After-effect</b>	PTSD	Pelvic pain	Back pain				

{ indicate further division of variable with new main category in *italics*

Time delay was measured as time span from assault to medical examination. The findings at the medical examination were bodily and genital (interfemoral, anogenital, vaginal, or anal) injuries and intoxication.

Three variables describing alcohol consumption and intoxication prior to and during the assault were used. One was self-reported alcohol intake 6 hours prior to the assault given by the victim to the examiner – information previously shown to be valid;<sup>140, 141</sup> another was the medical doctors' subjective estimate of relevant clinical signs such as smell on breath, speaking, and walking in order to standardised protocol guidelines; and finally the blood-alcohol content. The self-reported alcohol consumption prior and during the assault and the clinical judgment of intoxication were fused in order to obtain as complete an estimate as possible, unless explicitly stated otherwise.

The terminology regarding legal outcomes of the sexual assault cases is in accordance with the Danish Administration of Justice Act and is used in this context as follows:

- A. no suspect or settings incompatible with rape
  - no suspect identified or supplying evidence awaiting – file closed
  - charges not filed due to baseless allegation
  - charges dropped due to baseless charge
- B. alleged assailant free – the public prosecutor failed to lift the onus (burden) of proof
  - charges dropped because of insufficient evidence
  - acquittal – charged person prosecuted but found not guilty in a court of law
- C. alleged assailant convicted – guilty of charge

- guilty plea – charged person guilty but prosecution dropped due to age under 18 of the charged person or if low prospect that legal sanctions imposed would be greater than those already existing
- guilty verdict – charged person prosecuted and convicted in a court of law

D. false report/accusation admitted by the "victim" or charged by the police

### 9.3 Statistics

The information in the files from the three data sources was merged. The computer programme Epidata 3.1 was used for forming the databases. Statistical analysis was made using STATA 8.2. Tests applied for categorical data were Pearson's  $\chi^2_{\text{test}}$ ,  $\chi^2_{\text{trend-test}}$ , Fisher's exact test, and statistical significance was assumed if  $P < 0.05$ . PPR, crude OR, and 95% CI were calculated, and multivariable logistic regression analysis was used to adjust ORs for confounding. Interaction terms like effect measure modification were examined in all models, and none turned out to be significant when used in regressions.

### 9.4 Ethics

All victims were at the primary visit at the WeDSAC asked to accept possible future contact for research or follow-up. No compensation was offered for participation in the questionnaire. Permission to go through police reports was obtained from The Danish Ministry of Justice. All parts of the study were approved by the Danish Data Protection Agency, and all data were kept in accordance with the Danish Act on Processing of Personal Data.

## **9.5 Comparison of respondents and nonrespondents of the questionnaire**

The 260 victims not completing a questionnaire did not differ ( $P>0.2$ ) from the participants with regard to sociodemographics, assault histories, or forensic findings and legal outcomes. Details are outlined in Table 9.3. Some small but still non-significant deviations were found in the nonrespondents compared with the respondents. Among nonrespondents, more belong to the youngest age group and more were unemployed, fewer stated assaults by dating relationships, and fewer had a forensic examination performed. Nonrespondents had a modestly higher incidence of police filing cases as closed because of no suspect found or baseless allegations. The median age of 21 years was the same (range nonrespondents: 12-90 years, respondents: 12-56). Among male gender respondents, there were three boys aged 14, 15, and 16, numbers not deviating from the nonrespondent males.



**Table 9.3.** Comparison of respondents with non-respondents of the questionnaire in substudy 3 (Paper III) given in %

<b>Determinants (baseline)</b>	<b>Respondent group (n=93)</b>	<b>Non-respondent group (n=240)</b>	<b><i>P</i>-value</b>
Gender ratio (m/f)	1:29	1:52	0.4
Age (median)	21 yrs	21 yrs	1.0
Unemployment	22	27	0.5
Living alone	34	35	0.9
Private place of assault	60	61	0.9
Strange assailant	26	30	0.5
No coercion/threats	71	70	0.8
Completed intercourse	61	66	0.4
Alcohol victim	55	53	0.8
Genital lesion	20	20	1.0
Bodily lesions	75	74	0.9
Forensic examination	74	66	0.2
Psychological treatment	70	71	0.8
Police notification	68	62	0.4
Conviction	26	21	0.5

## 10. Summary of results

### 10.1 Incidence and characteristics of sexual assault (Paper I)

A significant proportional increase in psychological treatment of all registered assaults during the study period November 1999 to December 2004 was observed alongside a significant decrease in police reporting. Overall, the incidence of assault was unchanged in the study period. Figure 10.1 shows the distribution of attendance at all three formal places. Contributing to the dark figure was the finding that as many as 34% of the victims were registered only at the WeDSAC.

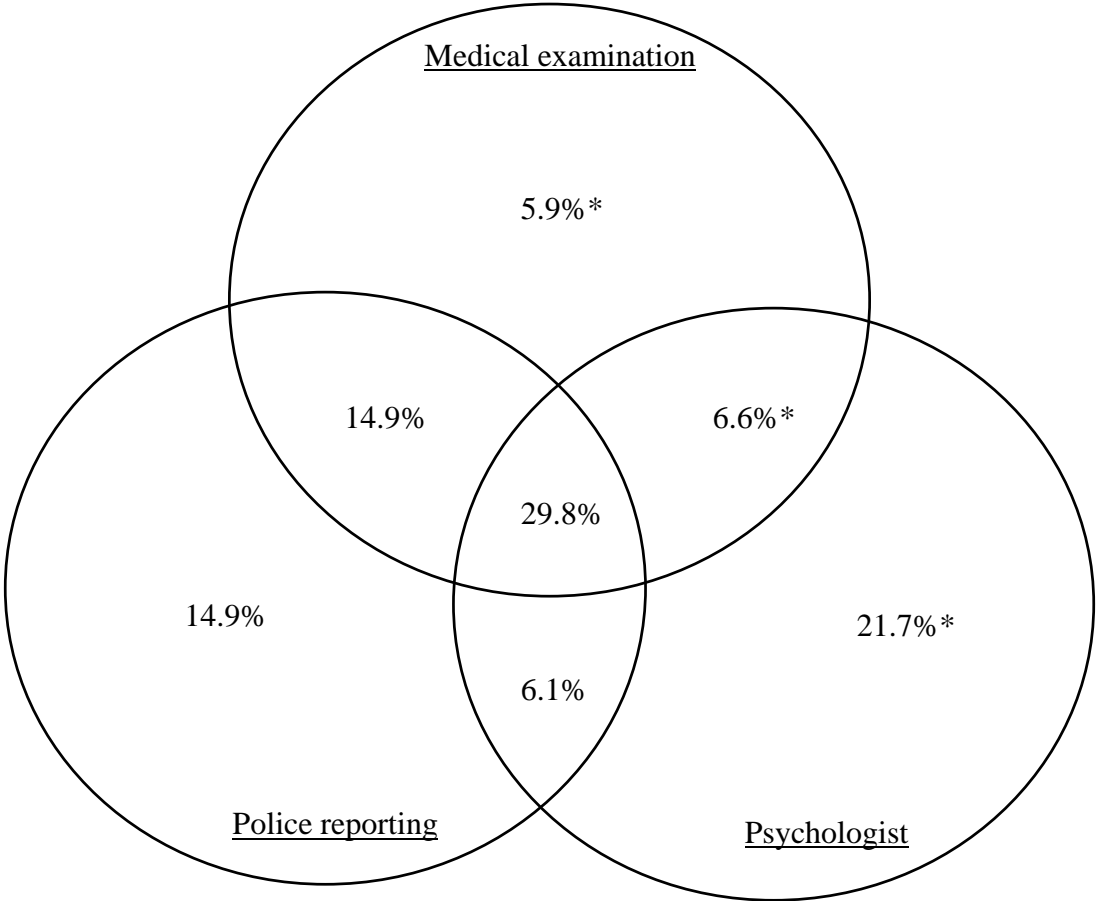
The annual incidence rate was 29 per 100,000 females aged 12-87 years, and the corresponding annual incidence rate for males was 1 per 100,000 aged 12-87 years; but as the males had a much more narrow age range the complementary annual incidence rate for males was 4 per 100,000 aged 13 to 25 years and for females 94 per 100,000 aged 13 to 25 years.

The sexual acts included vaginal, anal, or oral intercourse in 59% of the cases, and in 69% of the cases the victim and assailant knew each other. Knowing the perpetrator was associated with a higher risk of completed assault. Young people had a four times higher risk and consuming alcohol doubled the risk that the assault happen in a public place.

#### Key points Paper I

- the annual incidence rate was 29 and 1 per 100,000 females and males, respectively
- the “dark figure” was 1.3
- 69% of the victims knew the assailant
- young people and drinking alcohol increased the risk of a public place assault

**Figure 10.1.** Attendance at medical examination, psychological treatment, and/or at the police department of victims of sexual violence arising in Greater Aarhus, November 1999 to December 2004 seen at the WeDSAC. N=423



\* cases not known to the police, i.e. dark figure

## 10.2 Forensic findings and legal outcome (Paper II)

Documentation of injuries if the police were involved revealed that 58% had skin or bone injury, 19% had both extra-genital and genital lesions, and 1% had genital damage alone. Sixty-three percent of the victims with bodily injuries had one to three lesions.

Tabulation of self-reported alcohol intake 6 hours prior to the assault indicated that 46% had been drinking. The correlation between self-reported and the physician-estimated consumption showed in 34% of the medically examined cases 12 hours after the assault a disagreement for reported drinking and physician-estimated no influence. Disagreement with the toxicology report and the estimated intoxication was found in 13% of the cases.

Spermatozoa were seen on light-microscopy in 30%. Comparison of sperm/semen detection between the forensic clinician and the genetic laboratory revealed that sperm/semen were not found in 19% during the primary investigation by the forensic clinician.

In total, the assailants were charged in 55% of the cases reported to the police. Conviction was secured in 19% of all cases. Victim risk factors for conviction were severe coercion by the perpetrator, whereas completeness of the assault had no significance. None of the forensic collected evidence or documentation was shown to correlate with conviction.

### Key points Paper II

- 78% of the victims had bodily or genital injuries
- 46% reported drinking alcohol prior to the assault
- disagreements were found between self-reported and physician-estimated alcohol consumption, and between microscopy and genetics laboratory sperm-detection
- conviction of assailant was secured in 19% of all police-reported cases

### **10.3 Posttraumatic impact of sexual violence on health (Paper III)**

A questionnaire measured postassault health consequences with 2 to 5 years' follow-up. In total, 45% fulfilled the diagnostic criteria for PTSD and another 24% only missed a single criterion. Thirty-three percent and 38% had experienced pelvic pain or back pain, respectively, during the follow-up. Overall, in 60% of the victims there was some impact on health, and 39% had both PTSD and pelvic/back pain. No significant differences were identified between time of follow-up and PTSD, pelvic pain, or back pain. Completed intercourse was a predictor for PTSD development (OR 4.0, 95% CI 1.3-12.5). PTSD was statistically significant for co-occurrence of pelvic pain and back pain (OR 4.0, 95% CI 1.1-16.5 and OR 7.0, 95% CI 2.1-22.5).

#### **Key points Paper III**

- PTSD, pelvic pain, and back pain were very common postassault
- PTSD, pelvic pain, and back pain were often chronic symptoms
- completed intercourse was a predictor for PTSD development
- there was significant correlation between PTSD and pelvic pain or back pain

## 10.5 Other findings – police-reported vs. non-police-reported assaults

The analysis of differences between police-reported and non-police-reported (i.e. WeDSAC only) cases is shown in Tables 10.1 and 10.2, and revealed that the 15 to17-year old group was significantly less likely to report to the police compared with the youngest and oldest age groups. Also, victims having imbibed alcohol prior to the assault were significantly less likely to report. If the assault was by a stranger and evident bodily injuries were present at the time of the medical examination, a significantly larger proportion of victims chose to notify the police.

**Table 10.1.** Forensic medical findings in victims referred to the WeDSAC November 1999 to December 2004, by police reporting (N=243)

Determinants	Police-reported		Not police-reported		PPR	(95% CI)
	N (190)	%	N (53)	%		
Bodily injuries (n=235)						
Yes	142	78	28	53	1.4	(1.1-1.7)*
No	40	22	25	47		
Genital injuries						
Yes	39	21	9	17	1.0	(0.9-1.2)
No	151	79	44	83		
Alcohol (n=208)						
Yes	69	43	27	59	0.8	(0.7-0.9)*
No	93	57	19	41		
Intoxicated (n=234)						
Yes	82	45	27	51	0.9	(0.8-1.1)
No	99	55	26	49		

\* significant finding

**Table 10.2.** Characteristics of victim and assaults among 423 cases seen at the WeDSAC or by the police in Greater Aarhus, November 1999 to December 2004, by police reporting

Determinants	Police-reported		Not police-reported		PPR	(95% CI)
	N (278)	%	N (145)	%		
Sex						
Male	11	4	2	1	1.3	(1.1-1.7)*
Female	267	96	143	99		
Age-groups						
12-14 yrs	45	16	14	10	1.1	(0.9-1.3)
15-17 yrs	44	16	40	28	0.7	(0.5-0.9)*
18-24 yrs	81	29	41	28	0.9	(0.8-1.1)
25-34 yrs	51	18	26	18	0.9	(0.7-1.2)
35-87 yrs	57	21	24	27	1	Ref.
Type of dwelling (n=379)						
Alone/with kids	84	34	46	36		
With somebody else	166	66	83	64	1.0	(0.9-1.2)
Occupation (n=342)						
Employed/education	177	73	83	85		
Unemployed	67	27	15	15	1.8	(1.1-3.0)*
Ethnicity (n=382)						
Denmark	239	94	119	94		
Middle East/Africa	16	6	8	6	1.0	(0.7-1.3)
Place of assault (n=401)						
Private	151	55	78	63		
Public	126	45	46	37	1.1	(1.0-1.3)
Assailant relationship (n=403)						
Known						
Partner	45	16	15	11		
Family	9	3	3	2		
Acquaintance	68	25	53	42		
Contact	53	19	32	25		
Stranger	101	37	24	19	1.3	(1.2-1.5)*
Sexual intercourse (n=376)						
Attempted	101	38	52	46		
Completed	162	62	61	54	1.1	(1.0-1.3)
Coercion (n=301)						
None/verbal threats	69	27	17	35	1	Ref.
Light	130	51	18	38	1.1	(1.0-1.2)
Moderate	25	10	4	8	1.1	(0.9-1.3)
Severe	29	11	9	19	1.0	(0.8-1.2)
Forensic examination						
Yes	190	68	53	37	1.6	(1.4-1.9)*
No	89	32	92	63		

\* significant finding

# 11. Methodological discussion

## 11.1 Information problems

Information regarding personal details and the alleged assault, which is frequently given just after the assault, could be deficient because of the condition of the victim or because of intentional misrepresentation of facts. Therefore, the psychologists and the police collected the same information later on during the treatment and investigation of the case, so that in this context, the information is believed to be reliable. Unfortunately, misclassification due to false allegation is possible and would increasingly bias the annual incidence rate, increase the frequency of the characteristic features of false allegations and of cases with no conviction, and could affect some of the associations examined. Effort was made to prevent this bias by excluding known false reports/accusations, but some unfounded cases may still be present and could turn out to be false. Hence, this problem may not be solved completely.

Another information problem is the self-report measure and recollection issue inherent in filling out the questionnaires. The victim's recollection of the postassault aftermath is liable to recall bias because of memory defects and interpretation. This may underestimate the prevalence of pelvic pain and back pain and lower the association with PTSD, sociodemographics, and assault determinants. Another possible source of recall bias could be victim's assumption that some particular symptom was caused by the assault. Contrariwise, this may overestimate the prevalence of pelvic pain and back pain and increase the association with PTSD, sociodemographics, and assault determinants. Furthermore, a somatic explanation for the pain cannot be ruled out, and it is not exactly clear whether the reported symptoms



preceded or followed the assault. If the pain had a somatic basis or was present before the assault, this would in deed lower the associations between assault and physical symptoms.

## **11.2 Selection problems**

Concerning the issue of selection problem, the victims were sampled from a distinct subpopulation of sexual assault victims (notified to the WeDSAC or police) thus underestimating the incidence rate and dark figure in relation to the “real” number because of selection bias. On the other hand, the broad range of the WHO definition and the information bias owing to false allegation could counteract some of the underestimates.

Perhaps the victims referred to WeDSAC or the police are the ones who experienced the more severe assaults. Factors like visible injuries and stranger assailant were shown to promote referral like other studies,<sup>9, 142</sup> hence overestimating the occurrence of these factors.

Lack of forensic examination because of the police officer’s choice or because of delayed reporting by the victim could potentially bias the association between assault characteristics or legal outcome and the medical/laboratory findings.

The response rate to the questionnaire was modest, which is no surprise keeping in mind the vulnerability of the group in focus. The intern validity is judged to be good because no significant differences between respondents and nonrespondents were seen (Table 9.3). No selection bias affecting the outcome associations with regard to subsample crisis centre-known sexual assault victims is expected to occur. Nevertheless, women who came forward and participated may have been better able to cope, and the nonparticipants were probably more affected psychologically than were the participants.<sup>92, 119, 143</sup> This may even lead to an underestimation of the prevalence of PTSD, pelvic pain, and back pain.

### 11.3 Confounding and effect measure modification

Confounding can arise from all determinants used. For instance, age can confound the association between place of assault and alcohol intake because young people drink more often in public, and severe intoxication could influence relationship to assailant and completeness of assault. Confounding on this basis was in part prevented by the use of regression analysis. However, the significant association between physical coercion and alcohol was probably due to the introduction of confounding by control determinants. Exploring the correlation between physical coercion, place of assault, and alcohol showed that alcohol was, however not associated – as otherwise found in the regression analysis (Table 11.1). Instead, age was identified as introducing confounding but not effect measure modification because the interaction term was non-significant.

Likewise, forensic examination as an independent variable can result in confounding of the independent variable completed intercourse when controlled by regression. Introducing the interaction term removed the significance of completed intercourse for PTSD development, but the term itself was non-significant. Thus, no effect measure modification could be revealed, but the PTSD risk should be interpreted carefully.

Another variable to be considered thoroughly is gender, which may cause differences in demographics, assault characteristics, and referral patterns. The difference in annual incidence rate can be the source of another distortion. In the regression analysis with assault and victim characteristics by conviction (Paper II), the number of males was too little for adjustment and excluded. In this dissertation the males were not studied by themselves because they were too few in number. Actually, several other studies have not examined or discussed males by themselves either, and regression analyses were not adjusted for gender.<sup>16, 17, 27, 44, 46, 60-64, 126,</sup>

<sup>129</sup> Generally, males are seldom dealt with independently in demographic descriptions and incidence rates analysing both sexes. Some previous reports had chosen to fully exclude males.<sup>9, 25</sup> In one case, males were stratified in analyses but otherwise not discussed.<sup>4</sup> In studies comparing gender, males had the same proportion of examinations, assaults by strangers and repeat-victimisation, had fewer police-notifications, completed intercourses, and bodily injuries, but had more injuries to the anal area and current psychiatric symptoms.<sup>131, 144</sup>

**Table 11.1.** Associations (PPR) between public place of assault, victim drinking alcohol, and physical coercion by assailant, used as determinants and outcome in the regression analysis in Paper I

Public place of assault	Alcohol (victim)	Physical coercion		PPR
		Yes	No	
-	-	54	29	1
-	+	31	28	0.8 (0.6-1.1)
+	-	29	8	1,2 (1,0-1,5)
+	+	32	18	1.2 (0.9-1.5)

## 11.4 Extern validity

Unfortunately, we have to accept that no studies are capable of presenting a complete picture of sexual violence in a geographically restricted area because of underreporting to police or other authorities. This forces consideration of questions with respect to whether the present results can be generalised to everybody sexually victimised. Part of the study included non-police-reported as well as non-examined cases in order to come as close as possible to the real figure. Some small differences were identified between police-reported and non-police-reported (i.e. dark figure) cases. A major difference between those victims who report and those who do not is thought to be the former's greater psychologic fortitude and social resources,<sup>92, 119, 143</sup> thus lowering the extern validity to everybody sexually victimised. However, this epidemiological study is the best approach so far concerning the "silent group" of victims.

With consideration to regional and national differences, generalisation of victim and assault characteristics and associations can only be made to areas with similar age distribution (rural/urban, suburb/university areas), cultural norms, and restrictive legislations as those in Aarhus. The definition of sexual violence used in this study should apply to other multidisciplinary public centres or communities, resulting in high extern validity when referring comparable areas.

Regarding the conviction issue, the differences between the Danish and the Anglo-American administration of justice have to be taken into account. For instance, the public prosecutor in Denmark has the possibility of dropping the filed charge without involving the court, and the kind of trial – court judge, lay judge, or grand jury – may also affect the legal outcome.<sup>145</sup> Thus, different charging and trial procedures lower the extern validity.

## 12. Discussion of results

### 12.1 Incidence and characteristics of sexual assault

#### *12.1.1 Incidence rate*

The estimated annual incidence rates of 29 per 100,000 females aged 12 to 87 years and 1 per 100,000 males aged 12 to 87 years are higher than previously reported in other Danish studies.<sup>8, 48</sup> It may be due to the inclusion of psychologist only contacts in this study. Reported incidence of 37 per 100,000 inhabitants (no age range stated)<sup>25</sup> and from 30 to 148 per 100,000 women aged 12 to 50 years (indicating that the larger the city, the smaller the incidence),<sup>123</sup> are comparable. The same sampling procedure was used in all these studies (sexual referral centre +/- police) and the same selection problems were encountered as in the present study. These estimates are not in good agreement with those of Magid et al. who identified victims from a county emergency room and estimated an annual incidence rate of 185 per 100,000 females > 14 years.<sup>26</sup> This number could be closer to the real figure because the police were not involved. On the other hand, however, a very broad definition of assault was used, resulting in an increase in incidence compared with studies in which the legal definition of rape was used. Obviously, the various definitions and inclusions of victims provide a great deal of the explanation for the incidence variation. Circumstances like the awareness of and easy accessibility to sexual assault centres/A&E, and local cultural acceptance of victimisation are other conditions in favour of a high incidence of victims. Furthermore, these places with high incidence may have a lower dark figure.

### *12.1.2 Dark figure*

Victims of sexual assault can have many reasons for not making a police report. Fear of being questioned, not being believed, or lack of belief in the perpetrator would be convicted have been mentioned, but maybe first of all the victims find the assault too trivial to report.<sup>146</sup> This could indicate that some victims do not see themselves as victims of crime. The present contribution to estimating the dark figure was provided by people actively attending a supportive unit, and showed that one out of three known assaults were not reported to the police. Obviously, the figure is much larger because many victims probably do not show up at all, or, as shown, only step forward if injured. Victims aged 15 to 17 years and having imbibed alcohol prior to the assault were shown to be less likely to inform the police. This is alarming because there might be an even larger number of victims in that specific age group, an age group in which intimate relations are experienced and unfortunately often end in conflict. Furthermore, the study of legal outcome revealed that the Crown Prosecution Service places no importance on victim drunkenness hereby exploding the myth of it being the victim's own fault. Being assaulted by a stranger and experiencing bodily lesions were found to improve reporting in concordance with others.<sup>9, 147</sup> However, population surveys and the present series could overestimate the dark figure of assaults by illuminating the complainant's feelings instead of legal judgment. The finding that a greater percentage of formal disclosing victims are only seen at sexual assault centres further increases the figure.

### *12.1.3 Demographics and assault characteristics*

Most victims (97%) were females and aged below 25 years (63%). The victim demographics parallel those found by others.<sup>4, 8, 64</sup> Additionally, the assault characteristics revealed the place of assault was private in 58%, victim and offender knew each other in 69% of the cases, and

the sexual assault was completed in 59%, findings which are consistent with those of other studies.<sup>5, 39, 41, 43, 46, 51, 52, 116, 148</sup>

#### *12.1.4 Risk factors in the sequence of assault event*

Mostly young people were assaulted in public, drinking alcohol favoured the assault happening in a public place, and knowing the perpetrator caused more completed sexual intercourses. In concordance with Scott & Beaman,<sup>12</sup> assault by strangers could be characterised as being either an attempt with a good chance of escape or a hopeless action by the perpetrator due to impulsive action. Contrariwise, Ullmann & Siegel found (with no emphasis on unfounded allegations) that among an interviewed female population 49% of stranger-rapes were completed.<sup>93</sup>

## **12.2 Forensic findings and legal outcome**

### *12.2.1 Event and forensic associations of conviction*

Significantly associated with conviction in regression adjustment was the perpetrator's use of severe coercion (strangulation or presence of weapons). This is in concordance with other studies.<sup>41, 64</sup> Extra-genital injuries and young age are the only two factors found elsewhere to be significantly related to conviction but could not be reproduced in this study.<sup>15, 17, 18, 64, 69, 149</sup> The cause of no association with bodily lesions could be due to a very low number of severe injuries, and, perhaps most importantly, the injuries revealed were not scored (e.g. Clinical Injury Score).<sup>17</sup>

### *12.2.2 Injuries*

The number of genital and extra-genital lesions is consistent with some of the published data.<sup>5, 26, 42, 129, 149,150</sup> Different use of colposcopy, emphasis on prepubertal girls, inclusion of redness/swelling, and differences in involvement of law enforcement can explain the variation. The finding of no correlation between genital lesions and conviction cannot support introducing colposcopy routinely as suggested by Slaughter & Brown.<sup>55</sup>

### *12.2.3 Alcohol*

It is difficult to evaluate the physician's skill in estimating the victim's alcohol intoxication in comparison with the self-reported estimate because of the time delay between assault and examination. The examples of discrepancy between the estimated and the laboratory measurement are however inopportune and confirm the deficiencies in the clinical test used.<sup>151, 152</sup> Furthermore, 71% of the police-reported and examined victims had no toxicology report, and the majority of these cases were estimated clinically not to be intoxicated. Because of this large amount of missing information, the non-associated finding with conviction has to be carefully interpreted.

### *12.2.4 Sperm identification*

The finding of sperm (30%) is consistent with those of other studies in which sperm were identified on microscopy.<sup>5, 7, 15, 17, 18, 41, 61-66</sup> However, in 19% of the cases sperm detected in laboratory was not identified during the clinician's microscopy. Some of the disagreement is due to the use of the phosphatase test and sediment microscopy by the geneticists. The (low) presence of sperm has a poor sensitivity in predicting sexual assault and was shown to have no associations with conviction. As a forensic tool, though, the police authorities may use



detection of sperm as a first step in the investigation, particularly in doubtful cases or when the complainant states amnesia.

#### *12.2.5 Charging proportions*

The proportion of charging in this study (55%) and found in Trondheim (79%)<sup>41</sup> is higher compared with five Canadian and American series that revealed 29% to 33% of police files end with charges. And the five studies only included victims who had a medical examination and this could have increased the proportion of cases charged.<sup>15-17, 63, 64</sup> The explanation for the greater Danish proportion of charges must be because, in accordance with the Danish judicial practise, the police attorneys in Aarhus dropped a higher number of charged cases (59%) before prosecution compared with the just-mentioned studies (4-43%). This indicates that comparison by charges is difficult across national borders, and the preferred end-point should be conviction.

#### *12.2.6 Conviction proportions*

Some years ago, the Danish government asked the judiciary to increase punishment and charging percentage in cases of sexual violence. When a case is prosecuted, most victims take advantage of the possibility of demanding that the doors be closed while testifying. This leaves the alleged assailant's testimony as the only public statement. With more court cases, more victims are probably misunderstood and exposed to public contempt in the case of acquittal. Hence, the victims are not protected as intended. Based on the findings of a conviction proportion in Aarhus (19% of all police-reported cases) similar to previously published data,<sup>17, 41, 64, 69</sup> and the fact that not all prosecuted cases end with sentences, forcing an increase in charges or prosecutions is not recommendable.

### *12.2.7 False allegations*

Great variation in the extent of false reporting from 1% to 80% has been demonstrated.<sup>75</sup> However, this study can also achieve a proportion of 45% if every case not charged is considered deceitful, showing the difficulties in classifying “true” or “false.” No doubt research in false allegations suffers because of diverse definitions and different police agency criteria regarding unfounded cases.<sup>76</sup>

### *12.2.8 Legitimacy of examination*

Medical forensic examinations are still required because some citizens cannot behave properly, and they commit criminal activity and violent acts against one another – illustrated by the unchanged incidence rate during the study period. Unfortunately, the importance of documentation and evidence collection for legal prosecuting and conviction could not be revealed. In addition, sperm detection and estimating the level of intoxication were inferior. However, the resulting forensic report should contain facts and conclusions not otherwise described (forensic clinician serving as a witness), and may be important during the primary investigation.

## **12.3 Posttraumatic impact of sexual violence on health**

### *12.3.1 Prevalence of PTSD*

The high prevalence of PTSD in this study (45%) is very similar to the results obtained by Rothbaum et al., who also examined a clientele sample from a rape crisis centre.<sup>19</sup> The findings ascertain the persistence of PTSD several years after the index trauma, which is in full agreement with Kessler and colleagues, who showed that 35% of victims once diagnosed

with PTSD failed to recover.<sup>34</sup> The prospective design of the present study with exact knowledge of assault onset is a powerful indicator of the need for rapid intervention before the chronicity of the victim's stress level is established.

### *12.3.2 Risk factors of PTSD, pelvic and back pain*

Identifying risk factors associated with PTSD, pelvic pain, and back pain may permit early intervention targeting victims at greatest risk of developing postassault psychopathology. The identification of completed intercourse as a risk factor for PTSD has also previously been stated.<sup>78</sup> It is remarkable that neither the degree of coercion nor injuries sustained seem to be of particular importance because several studies are ambiguous on that point.<sup>10, 87, 115, 118</sup>

The study disclosed 39% of the victims with both PTSD and pelvic or back pain (86% of victims with PTSD revealed pain) and strongly associated PTSD with pain. This indicates that pelvic or back pain is a possible independent conditioned stimulus of PTSD, with the pain being a reminder of the sexual assault and thus capable of maintaining PTSD.

It is difficult to assess the importance of delimiting separate determinants for sexual assault-induced after-effects. The study used mainly forensic variables, but other factors, such as preceding depression or PTSD from other trauma, coping strategies or social reactions from formal as well as informal caregivers, could explain the greater variance in the posttraumatic psychopathologic disorders in focus.<sup>104, 119, 121</sup>

## 13. Perspectives

This study has shown that valuable information available from forensic institutes and police departments can supplement sexual assault centre data to increase our knowledge of sexual violence in a restricted area. This kind of research is necessary in continuing the surveillance of victimisation in order to prevent assaults and side effects and to optimise the skills of examiners and police detectives.

### 13.1 Preventing assaults

Most victims were young females, approximately one half of the victims had imbibed alcohol prior to the assault, and several victims met their offender in public places. Prevention could target these risk groups, and future research should emphasise how to reach them. Furthermore, known perpetrators accounted for more than 2/3 of the assaults, and therefore prevention should take advantage of underlining the statement that “no” is “no”. Information about drinking habits and the wrongness of forcing a dating partner to sex, could further achieve this.<sup>38, 94, 153, 154</sup> Overall, the findings imply the need for attitude changes and behaviour control.

The data concerning male victims and repeat victimisation were insufficient. The character of the assault and legal outcome were different in male victims than they were in female victims. Unfortunately, male victims seldom contacted the WeDSAC. Sociodemographic, assault settings, and injury patterns at a Danish level associated with males should be estimated. Repeat victims also deserve attention in the future because previous research has shown that past victimisation is a risk factor for being sexually assaulted.<sup>10, 117</sup> The 18 women

in the Aarhus data are too few to allow for epidemiological research, but a psychological interview approach may be the solution while collecting further numbers of repeat victims.

The WeDSAC could also engage in assertive education of non-victimised people through classroom teaching to motivate the victim to leave high risk environments or to teach problem-solving skills.<sup>10, 51</sup>

### **13.2 Improving examination and charging**

Improving the forensic examination in order to optimise the legal process seems needed because no evidence collected or documented during the examination was significant for conviction. The examination protocol requires further evaluation, but improvement could arise if the medical examiner looked for sperm even after 48 hours, as sperm still were present at this time. Using techniques for quicker sperm detection (e.g. wet-mounted smears or the prostate specific antigen test) could be beneficial,<sup>155, 156</sup> because the medical examiner obviously did not have the proper implements for sperm screening.

Additionally, because 45% of all police-notified cases are either false or baseless, the examiner should in view of this not only pay attention to obtaining evidence in favour of the victim. From an economic point of view, based on the finding that sperm detection was inferior and had no association with conviction the medical examiner may hesitate sending the collected material for analysis, awaiting the preliminary outcome of the police investigation. A study is necessary that examines the primary outcome of the evidence collection and documentation used by the police detectives in the very early stages of investigation, as well as a study determining differences among subgroups of cases.

Other urgent studies covering rather unknown aspects of sexual violence are mapping the localisation of injuries and estimate characteristics of false allegations; both contribute to optimise the skills of examiners and police detectives as to what to expect under certain circumstances.

In the case of dropped charges, the police investigators and attorneys have a great responsibility in clarifying to the victim their beliefs regarding a true assault and the lack of evidence as the cause for not prosecuting.<sup>157</sup>

### **13.3 Preventing postassault sequelae**

The findings of treatment-demanding PTSD among 69% of the victims, and the long duration – also of pelvic pain and back pain – are alarming. Furthermore, lack of psychologic treatment in some victims, and the non-significant effect when treated make revision of follow-up procedures imperative.

First of all, nurses and physicians must be careful not to treat the victim differently or diffidently,<sup>158</sup> especially in cases of reported completed intercourse. Future emphasise should be put on how to reach the referred victims for immediate follow-up. New studies in follow-up duration and how to inform victims of sexual violence, relatives, health services, and the population about the magnitude of postassault PTSD, somatoform symptoms, and the prolonged duration, are also needed.

## 14. Conclusions

The findings in this dissertation support the following conclusions:

- 1 The method of using data from a sexual assault centre, an Institute of Forensic Medicine, and the police is useful and can be recommended for use in future research. The method procured new information otherwise not collectable.
- 2 Risk groups of sexual violence were young females in association with alcohol intake and a public place of assault. Prevention should be directed towards these high-risk groups.
- 3 Forensic evidence collection and documentation during medical examination have no association with conviction. A study examining the impact of the forensic report on early police decisions is required.
- 4 Several years postassault, 69% of the victims needed treatment for PTSD, and 1/3 had pain sensations, warranting a revision of the psychological follow-up.
- 5 In Greater Aarhus, no major changes in the annual incidence rate of sexual violence in the study period 1999-2004 were found.
- 6 The annual incidence rate was 29 per 100,000 females and 1 per 100,000 males aged 12-87 years.

- 7 The dark figure of sexual violence was estimated to be at least 1.3 – i.e. 30% had not reported the assault to the police.
- 8 Police notification ended without conviction of the defendant in 81% of the cases.
- 9 Somatoform symptoms were capable of acting as an independent conditional stimulus for PTSD, hence mental stress was transmittable to pain sensations.



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## **16. Summary**

This PhD dissertation is based on studies carried out at the Western Danish Sexual Assault Center (WeDSAC) in Aarhus and the Institute of Forensic Medicine at the University of Aarhus (IFM) in cooperation with the police departments in the former Aarhus County during the period 2004 to 2007.

### **Objectives**

The objectives of the research were to analyse the epidemiologic, forensic, legal, and health-related aspects of sexual violence by:

- a) Estimating the incidence rate and the “dark figure” in Greater Aarhus 1999-2004.
- b) Describing the victims, assault characteristics, and forensic findings.
- c) Assessing the legal and health consequences.
- d) Determining risk factors of assault, legal conviction, and development of posttraumatic stress and somatoform symptoms in order to prevent assaults, improve forensic examination, and optimise medical and psychological follow-up.

### **Methods and material**

The research is based on citizens within the admission area of the WeDSAC, the IFM and/or the police departments in Greater Aarhus. Persons (males/females) who claimed to have been exposed to sexual violence and arrived at the WeDSAC or at the police were registered and their data pooled. To illustrate the legal consequences of police-reported assaults, the law enforcement aspect was covered. To illustrate the late health consequences, a follow-up questionnaire survey was carried out. Different models of sociodemographic, assault, and forensic risk factors were constructed and logistic regression analyses were performed.

## **Results**

### Incidence and dark figure

From November 1999 to December 2004, a total of 423 cases of alleged sexual assault were referred to the WeDSAC and/or the police authorities in Greater Aarhus. The annual incidence rate was 29 per 100,000 females (12-87 years) and 1 per 100,000 males (12-87 years). As many as 34% of the victims were registered only at the WeDSAC (contributing to the dark figure).

### Characteristics and forensic findings

The sexual act included vaginal, anal, or oral intercourse in 59% of the cases, and in 69% of the cases the victim and assailant knew each other. A total of 216 (70%) of the victims notifying the police had a medical forensic examination. Documentation of injuries revealed that 58% had skin or bone injury, 19% had both extra-genital and genital lesions and 1% had genital damage alone. The correlation between self-reported and physician-estimated intoxication showed disagreements, and disagreement with the toxicology report and the estimated intoxication was found in 13% of the cases. Sperm detected on microscopic examination were seen in 30%. Comparison of sperm detection between the forensic clinician and the genetics laboratory revealed that in 19% of cases sperm were not found during the primary investigation. None of the evidence or documentation obtained by forensic investigation was shown to correlate with conviction as the legal outcome.

### Consequences of sexual violence

Of all police-reported cases, 81% ended without conviction of the defendant. A false allegation was identified in 11% of all police-reported cases. A return rate of 28% of duly

filled-in questionnaires was achieved. Forty-five percent fulfilled the diagnostic criteria for current PTSD, and another 24% had subclinical PTSD several years postassault. Thirty-three percent and 38% had experienced pelvic or back pain, respectively, during the follow-up.

### Risk factors

Use of physical violence was significantly more often identified in partner and stranger relationships. Young people had a four times higher risk and the consumption of alcohol doubled the risk for the assault to happen in a public place.

The risk factor most strongly associated with conviction was the report of severe coercion by the perpetrator (OR 7.1; 95% CI 1.8-27.3).

Both somatoform symptoms were strongly associated with PTSD, indicating that pain functions as an independent conditioned stimulus for PTSD.

### **Discussion and conclusions**

This study has contributed to our knowledge of sexual violence through a new approach because of the inclusion of victims not seen by either the police or the medical examiner. Pooling data from sexual assault centres, forensic institutes, and police/prosecutor departments is considered useful and recommendable. Victim and assault characteristics and the findings of forensic investigation are in agreement with those of other studies. Prevention of assault is important because 69% of the victims had treatment-demanding PTSD several years postassault. Future preventive implementations should be directed to these high-risk groups. New approaches concerning the impact of the forensic report on early police decisions are required, along with research as to how long a time the psychological follow-up should continue.

## **17. Danish summary (dansk resumé)**

Ph.d.-afhandlingen er baseret på studier udført ved Center for Voldtægtsofre, Århus, og på Retsmedicinsk Institut, Aarhus Universitet i samarbejde med politikredsene i det tidligere Århus Amt i perioden 2004-2007.

### **Formål**

Formålene med studiet var at analysere de epidemiologiske, retsmedicinske, retslige og helbredsmæssige aspekter af seksualiseret vold, herunder:

1. bestemme den årlige incidens rate og en tilnærmelse af ”mørke-tallet.”
2. beskrive ofrenes og overgrebenes karakter samt beskrive de retsmedicinske fund.
3. bestemme politimæssige og retslige udfald af de anmeldte sager og bestemme omfanget af de helbredsmæssige konsekvenser.
4. påvise særlige risikofaktorer for overgreb, dom og helbredsmæssige konsekvenser for derigennem at kunne opstille præventive forslag til forebyggelse af seksualiseret vold, til forbedringer af den retsmedicinske personundersøgelse og for optimering af den medicinske og psykologiske opfølgning af ofrene.

### **Metode**

Undersøgelsen er baseret på ofre (mænd/kvinder) der har henvendt sig til Center for Voldtægtsofre, Århus, eller til politikredsene i Århus Amt i en femårig periode og angivet sig udsat for voldtægt eller voldtægtsforsøg. Det retslige udfald af de anmeldte sager indhentes i politiet rapporter. En spørgeskemaundersøgelse blev foretaget for at bestemme omfanget af posttraumatisk belastningsreaktion og forekomsten af underlivs- og rygsmærter i efterforløbet

af den seksualiseret vold. Logistisk regression med sociodemografiske, overgrebs og retsmedicinske faktorer blev udført i flere modeller.

## **Resultater**

### Forekomst og mørketal

I studieperioden november 1999 til december 2004 blev der registreret 423 ofre. Den årlige incidens rate var for kvinder 29 pr. 100.000 indbyggere i alderen 12-87 og for mænd var den 1 pr. 100.000. Der fandtes ingen stigning i perioden. De ofre der udelukkende henvendte sig på Center for Voldtægts ofre udgjorde 34%, sv.t. et mørketal på 1.3.

### Offer, overgreb og retsmedicinske fund

Vaginalt, analt eller oralt samleje blev angivet i 59% og en kendt overfaldsmand i 69% af tilfældene. Blandt de ofre der anmeldte overgrebet til politiet, fik 216 (70%) foretaget en retsmedicinsk undersøgelse. Skader på kroppen blev påvist hos 58%, 19% havde på krop og genitalier mens 1% kun havde genitale skader. Der var uoverensstemmelser mellem den kliniske alkoholpåvirkethed vurderet af lægen og på den målte promille i 13% af tilfældene. Sæd blev i 30% af tilfældene påvist mikroskopisk i prøver udtaget ved undersøgelsen, og sammenholdt med laboratoriesvaret fandt den mikroskopiske undersøgelse ikke de 19%. Ingen af de retsmedicinske fund var associeret med det retslige udfald dom.

### Konsekvenser at et seksuelt overgreb

Ud af alle politi-anmeldte sager endte 81% uden dom af en gerningsmand. En falsk anmeldelse/anklage blev påvist i 11% af sagerne. En svarprocent på 28 i spørgeskemaundersøgelsen blev opnået. Af besvarelserne opfyldte 45% diagnosekriteriet for



PTSD og yderligere 24% havde subklinisk PTSD. 33% havde oplevet underlivssmerter og 38% rygsmerter i opfølgingsperioden efter overgrebet.

### Risikofaktorer og forebyggelse

Overgriberens brug af fysisk vold sås signifikant hyppigere ved partner- og overfaldsvoldtægt. Unge havde en 4 gange forhøjet risiko, og indtagelse af alkohol fordoblede risikoen for at et overgreb skete et offentligt sted. Den stærkest associerede faktor for dom var rapporteret brug af svær vold fra overgriberens side (OR 7,1; 95% CI 1,8-27,3). Begge somatoforme symptomer var associeret med PTSD, hvilket kunne indikere, at smerten kan fungere som en uafhængig betinget stimulus for PTSD.

### **Diskussion og konklusion**

Studiet frembyder ny viden inden for seksualiseret vold ved at inddrage ofre ikke anmeldt og ikke lægeundersøgt. Metoden med at samle data fra centre for voldtægts ofre og politi/anklagemyndighed er anvendelig og anbefales i fremtidige studier. De fundne epidemiologiske karakteristika og retsmedicinske undersøgelser er i overensstemmelse med andre studier. Forebyggelse er vigtig, da 69% af ofrene har en behandlingskrævende posttraumatisk belastningsreaktion selv flere år efter overgrebet. Fremtidige præventive tiltag kan målrettes de påviste risiko grupper. Nye undersøgelser om politiets brug af den retsmedicinske erklæring og om den psykologiske opfølgningens varighed er påtrængende.

# PAPERS



# PAPER I

## **Characteristics of victims and assaults of sexual violence – improving inquiries and prevention**

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## **Summary**

The purpose of our study was to provide descriptive data on victim and assault characteristics in sexual violence and to ascertain risk factors in the sequence of the assault events. Retrospective data were collected on all sexual assault victims presented to the sexual referral centre, the police and the Institute of Forensic Medicine in Aarhus, Denmark, during a five-year period. Four hundred and twenty three victims were included. The annual incidence rate was 14.5 per 100,000 inhabitants aged 12-87 years and the “dark figure” was estimated to be 1.34. Median age was 21 years; 69% of the victims knew the assailant, and penile intercourse was reported in 59% of the cases. Young age and drinking alcohol were risk factors for the assault to take place in a public place. Information to high-risk groups identified by this study should be integrated in approaches of modifying sexual behaviour. Furthermore, the results from this study are useful in supporting staff and police investigators in the guidance of their efforts regarding treatment and inquiries.

## **Key-words**

Sexual assault, epidemiology, prevention, multidisciplinary public centre

## 1. Introduction

Knowledge of the extent of sexual violence in Denmark as well as internationally has so far been based on police statistics of reported cases of sexual assault or on population surveys. The Danish police statistics have revealed the number of reported rapes/attempted rapes as rather constant during the last decade with around 500 cases a year (annual incidence rate 9.1 per 100.000 people > 12 years (average in 2000-2004)).<sup>1</sup> Danish studies during 1975-2001 have dealt with the characteristics of the victims and of the assaults, some studies covering rapes/attempted rapes reported to the police and medically examined, others with notification but without a medical examination, or medically examined victims but not police-reported.<sup>2-8</sup> Due to these differences in selection of study population assaults by strangers varied from 23% to 40%, physical coercion from 56% to 80%, and subjected to penile penetration (completed intercourse) from 57% to 78%. Genital and extra-genital injuries were reported as making up to 32% and 69% of the cases, respectively.

During recent years, the medical examination has taken place at one of several Danish sexual referral centres. The Western Danish Sexual Assault Center (WeDSAC) was established in Aarhus in November 1999 as the first multidisciplinary public centre for adolescent and adult victims of sexual assault in Denmark.<sup>9</sup> The centre runs a 24-hour service, offers professional medical and psychological treatment as well as forensic evidence collection and documentation. No referral is needed to attend the centre, nor is police notification.

The other Nordic countries established multidisciplinary public centres for victims of sexual assault earlier than Denmark, and the U.K, the U.S., and Canada also have a long tradition in treating victims of sexual assault following specific protocols.<sup>10-17</sup> Reported descriptive data on the victims and the assaults are, for the main part, at the Danish level<sup>18-26</sup>

except peaks at 67% strange assailants,<sup>17</sup> 90% exposed to physical coercion,<sup>14</sup> 92% completed intercourse,<sup>27</sup> genital lesions in 68%,<sup>28</sup> and body lesions up to 89% of the cases.<sup>29</sup>

Only few studies have reported annual incidences and they have been very diverse because of various definitions of sexual violence, different year of study, different settings, and different inclusion criteria. Nesvold and Nordic colleagues found annual incidences in Helsinki of 21 per 100,000 females >12 years, 60 in Oslo, and 110 in Reykjavik.<sup>30</sup> Magid et al estimated the annual incidence rate to be 185 per 100,000 females > 14 years (Colorado, U.S.),<sup>31</sup> and in a recent study Saltzman et al (U.S.) reported a rate of 25 per 100,000 inhabitants (i.e. both sexes and all ages).<sup>32</sup> None of these three incidence studies concerned assaults taking place only inside a specific geographic area.

The cited studies used various definitions of the sexual act. The terms rape, attempted rape, sexual assault, touching sexual parts, and sexual intercourse have all been used. Depending on the institution one represents, i.e. legal, criminal, medical, forensic, or psychological, sexual assault has a smaller or wider meaning. As a result this causes a variation in annual incidences and differences in characteristics of victims and assaults. It is very important to distinguish between the terms rape and sexual assault. Rape should be considered as a non-medical concept restricted for use by the legal system only, and sexual assault has an even more ambiguous set of meanings like the one WHO uses to define sexual violence.<sup>33</sup>

In this study the terms “sexual assault” and “sexual violence” cover episodes of involuntary interpersonal hetero- as well as homosexual acts/contacts, such as accomplished or attempt to accomplish penile penetration or use of objects in the vagina, anus, or mouth, irrespective of ejaculation of semen or not, and episodes in which a person is believed, or consider him/herself to be assaulted.



It is well known that not all cases of sexual assault are notified to the police, leaving a “dark figure” of sexual violence.<sup>34</sup> Now, because of the existence of several multidisciplinary public centres for sexual assaults, contribution to the epidemiology of victims and circumstances of sexual assaults has obtained another and more advanced implementation. This provides the opportunity to get a better estimate of the extent of sexual violence not known by the police.

Research lacks newer studies with larger sample sizes and studies challenging the indistinct pictures of characteristics and incidences of sexual assaults due to various definitions and diversities in settings. Furthermore, studies concerned with risk factors of sexual violence are very rare,<sup>35</sup> but studies of interpersonal violence show that assaults by strangers imply more severe violence, and that young people are more often assaulted in public places.<sup>36-38</sup> We speculate that this is also true for victims of sexual violence. Our experience and supposition from daily work is in contrast to the public/media opinion that stranger assaults are completed rapes. A greater insight into sexual violence epidemiology is desirable in order to take care of the victims and provide preventive innovations.

This study has three primary aims. The first is to estimate a more precise incidence of sexual violence and to approach the “dark figure” not notified to the police. The second is to give a thorough description of adolescent/adult sexual violence in a geographically well-defined area with focus on the victim’s demographics, the circumstances of the assault, and some of the medical findings at the forensic examination. The third is to elucidate risk factors in the sequence of assault events by testing three hypotheses: 1) knowing the perpetrator forces completeness of the intercourse, 2) not knowing the assailant leads to more physical violence, and 3) young people are assaulted in public.

## 2. Materials & Methods

The study was performed as a retrospective descriptive single-sample survey.

In a well defined geographical area cases of sexual assault were identified in a five-year period from November 1, 1999, to December 31, 2004, in the files of three data sources: a) the WeDSAC, b) the Institute of Forensic Medicine at Aarhus University (IFM), and c) the police departments. The area contains the second largest city in Denmark and had during the study period an average of 645,000 inhabitants (539,000 people between 12-87 years). This equates to 1/8 of Denmark's population.

Information from the victims undergoing a medical examination at WeDSAC (police reported or not) was listed in a standardized registration form and fed into a database. Genital lesions were identified by macroscopic visualisation during the gynaecological examination, and colposcopy was occasionally used. Information from victims seen by the psychologists at WeDSAC was identified in the psychologists' records. Cases notified to the police were identified in their files.

Victims medically examined, victims only seeing the psychologist with or without police notification and cases from the police were eligible for the study. Cases arising outside the County of Aarhus were excluded along with repeat victims and known false reports/allegations. A report was considered false if the victim later admitted he/she notified wrongly about the assault setting, the assailant, or the content, or if the police pressed charges for false report or accusation.

Information included in this study was sociodemographics of the victim, circumstances of the assault (place of assault, type of assault, ejaculation, coercion, victim's relationship to the assailant, alcohol consumption), and some of the findings at the medical examination (delay

assault-examination, bodily and genital injuries, alcohol-intoxication by clinical observation). Physical coercion could be mild (restrained), moderate (blow, kick, bite), or severe (weapons or strangulation). The type of sexual act was categorised as “complete” in cases of vaginal, anal and/or mouth penetration. The relationship to the assailant was differentiated into five levels: partner (victim and assailant know one another sexually, e.g. present or ex-husband/boyfriend), family (assailant is a relative), acquaintance (knowing one another but not having a sexual relationship previously), contact/date (victim and assailant have only just met, typically less than 24 hours before the alleged assault, hence have not had a sexual relationship previously) – all classified as victim knowing the perpetrator, and stranger (victim and assailant have not previously seen one another). Bodily and genital injuries were redness, bruising, abrasion, swellings, lacerations, and fractures. Alcohol intoxication was the medical doctors’ subjective judgement of relevant clinical signs as smell on breath, speaking, and walking in order to standardised protocol guidelines. Self-reported alcohol consumption prior to the assault and the clinically judged intoxication were fused in the regression analyses to obtain a complete estimate.

Permission to go through police reports was obtained from The Danish Ministry of Justice. The Danish Data Protection Agency allowed the collection of data.

Analyses and statistical calculations were made using STATA 8.2. Tests applied for categorical data were  $\chi^2_{\text{test}}$ ,  $\chi^2_{\text{trend}}$  and statistical significance was assumed if  $P < 0.05$ . Prevalence proportion ratio (PPR) was calculated, and multivariate logistic regression analysis was used to adjust ORs and 95% confidence intervals (95% CI) for confounding. Variables thought to have clinical or theoretical importance for the outcome were entered into the model regardless of significance.

Interaction terms like effect measure modification were examined in the published model.

### 3. Results

#### *3.1. Incidence and data source*

A total of 579 cases of sexual assault were identified in one or more of the three data sources: WeDSAC, IFM, or police. Thirty-one cases were either charged by the police or admitted by the victim to be false allegations and thus excluded along with 125 cases from outside Aarhus County. This gives 423 cases of sexual violence in the region around the town of Aarhus among 404 different persons (17 victims attended twice and one victim three times). Table 1 shows the number of victims and the registered incidences, which peaked in 2003. The average annual incidence rate during the study period was determined to 14.5 per 100,000 inhabitants aged 12-87 years. A significant ( $\chi^2_{\text{trend}}$ ) increase in psychology treatment of all registered assaults during the years was observed alongside a significant ( $\chi^2$ ) decrease in police reporting from 2000 to 2004, but the frequency of police reporting increased from 2001 to 2003.

Thirty percent of the victims appear in all three data sources, whereas only the psychologists or the police saw 22% and 15%, respectively. Contributing to the “dark figure” was the finding that as many as 34% of the victims of sexual assault in the study population were registered only at the WeDSAC and were not seen by the police.

#### *3.2. Characteristics of the victims*

Nearly all (97%) victims were females and only 17 victims were males. The mean age of the whole group was 25 and the median age was 21 years (range 12-87). In Table 2, 14% are

children (12-14 years) and 49% are in the young age group (15-24 years), both groups being heavily over-represented in relation to the age distribution in the general population of Greater Aarhus.

### *3.3. Characteristics of the assaults*

The assaults were distributed nearly equally throughout the year, with a small peak in the summer time (August and September) and the lowest frequency during winter (March) with significantly fewer assaults outdoors. No pattern was seen regarding the time of month (around payday). Day of week analysis showed a heavy concentration at week-ends (65%).

Regarding the type of assault, completed sexual assault happened in 59% of the cases with vaginal penetration as the most frequent (87%), oral (26%), and anal penetration (12%). The victim reported ejaculation by the perpetrator in 36%. When the victim and assailant knew each other, completed assault was seen in 70%, but in case of strangers only in 35%. As seen in Table 3 the assailant was a stranger in 31% of the cases. Table 3 further shows details of four situational determinants. Penetration into the mouth was significantly more often seen in the other relationships than if the assailant was a stranger. Both partner/family, acquaintance, and contact relationships showed a significant occurrence of reported assailant ejaculation in contrast to strangers ( $\chi^2_{\text{trend}}: P < 0.0001$ ).

Use of coercion is given in Table 4 and was seen in 73% of the cases, and severe coercion made up the 13%. Use of physical coercion was significantly ( $\chi^2_{\text{trend}}$ ) more often identified in partner and stranger relationships, whereas acquaintances used less violent coercion. Use of weapons and/or strangulation (severe coercion), was seen in 66% of cases with a perpetrator known to the victim.

### *3.4. Medical findings<sup>1</sup>*

To have evidence and documentation collected, it is necessary that the victim shows up for a forensic medical examination. Fifty-two percent came within 12 hours, another 18% came within 12-24 hours postassault, and within 48 hours 85% had shown up.

The forensic medical examination (and police inspection) revealed injuries in 73% of the victims;

53% suffered skin or bone injury, 19% both extra-genital and genital lesions (interfemoral, anogenital, vaginal and anal) and 1% genital damage alone. Sixty-three percent of the victims with body injuries had one to three lesions.

The self-reported alcohol intake prior to the assault revealed 43% of the victims had drunk more than one unit (i.e. 0.2 pro mille). According to the above-mentioned time delay and interpreting the clinical rating for alcohol intoxication, 80% of the victims examined no later than 12 hours after the assault were estimated as not being under the influence of alcohol.

### *3.5. Risk of different assault outcome*

The multivariate analysis in Table 5 compares characteristics of the victims and of the assault and medical findings. The youngest age groups (<24years) were significantly more often assaulted in a public place, and drinking of alcohol increased the risk of public place assault. Furthermore, victims assaulted in public had a significant risk of being exposed to physical coercion. Exploring the correlation between physical coercion, place of assault, and alcohol showed alcohol not was associated, though. Instead, age was identified as introducing

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<sup>1</sup> The following results are based on medically examined victims at the WeDSAC or IFM and consist 242 victims supplemented with six police-only cases concerning injuries. With regard to alcohol toxicology, only the examined and those in whom a report was filled are enrolled (n=189).

confounding but otherwise not effect measure modification. In case the victim knew the perpetrator, the risk of complete sexual assault increased three times compared to a stranger (OR 2.9, 95% CI: 1.35-6.28).

## **4. Discussion**

### *4.1. Main findings*

We focused on characteristics of victims and settings and risk factors in sexual victimisation as well as on estimating the “dark figure” of sexual assault. Thirty-four percent of the victims did not come to attention of the police because they were only registered at the WeDSAC. Only 3% were males. Sixty-three percent were children (12-14 yrs) or young people (15-24 yrs), age groups only constituting 19% of the general population and thus being heavily over-represented. The sexual act included vaginal, anal, or oral intercourse in 59% of the cases, and in 69% of the cases the victim and assailant knew each other. Knowing the perpetrator was associated with higher risk of completed assault, whereas the relationship to the perpetrator did not affect the use of violence. Young people had a four times higher risk and alcohol doubled the risk for the assault to happen in a public place.

### *4.2. Limitations and strengths*

Information regarding personal aspects and the alleged assault was given by the victim and could be deficient because of stress, tiredness, or intoxication. As a precaution, however, the police collected the same information later on as well as several times during the investigation

of the case, so in this context, we believe that the information is reliable. Unfortunately, misclassification due to false allegation is a risk and could increasingly bias the estimated annual incidence rate. We have excluded known false reports/accusations, but some unfounded cases may still exist and might turn out to be false. To further elucidate this problem a study on false allegation has been launched.

A problem in the study regarding selection of cases is that only registered cases were included. This is a common concern in sexual violence research based on cases known to the police and medical examiner.<sup>35</sup> Taken the resulting underreporting issue into consideration, both the incidence rate and “dark figure” must be underestimated in relation to the “real” number of cases because of selection bias. On the other hand, the WHO definition used has a broader range than in many other studies, hence overestimating the comparable incidence, but it is necessary to get as close as we can to the real figure of sexual violence. Further counteracting the underestimation is the above-mentioned information bias from false allegations, but we believe that this issue does not have any great potential to neutralise the two opposite effects, finally resulting in an underestimation of the “real” incidence.

Another selection which could bias the results is that factors like visible injuries or stranger assailant could promote referral, hence overestimating the occurrence of these factors, maybe at the expense of partner-relationships.<sup>39,40</sup>

Confounding can arise from all determinants used. Variables of particular interest are age and alcohol intake, which in turn could promote certain settings and encounters. Age were found to interact the association between place of assault and alcohol intake but was not subjected to effect measure modification. The above-mentioned problems with the selection overestimating some assault characteristics will not cause association biases, and thus not affect the outcome measures and maintain good intern validity.



This study was designed to accommodate for the “dark figure” because the cases come from different sources and also include pure psychologist cases. The strength of the study set-up can, with regard to the WHO definition, cause trouble in relating the results to other studies, considering the diversity in police filing and medical examination, thus lowering the external validity. This is the price for, what we believe, is the first case series of sexual violence that includes victims not examined medically or reported to the police. Also, the use of multivariate logistic regression analysis is warranted in estimating risk for different assault events and strengthens the outcome. Comparison with earlier studies in this field is always encumbered by precautions due to the various definitions and samples, but it should be possible to generalise the epidemiology revealed in the present study to countries with cultural norms and restrictive weapon legislation similar to Denmark.

#### *4.3. Comparison and interpretation of results*

The victim demographics parallel those found by others.<sup>4,25,30</sup> The proportion of males is, however, reported as being higher (10%) in Edinburgh and from emergency departments in the U.S.<sup>24,32</sup>

The estimated frequency of 58% for private residences as place of assault is reflected elsewhere.<sup>7,14,19</sup> In other studies this is even more frequent, e.g. in India and Greenland, where 87% and 84% of victims examined at a local forensic institute or by district medical staff were assaulted in privacy.<sup>26,41</sup> The percentage of sexual assault conducted by strangers is also similar to comparable studies,<sup>3,23,34,42</sup> whereas Bang reported 69% were strangers in a study including medically examined victims,<sup>11</sup> McGregor et al, who in two case series of police reported medical examined victims reported 67% and 57%, respectively,<sup>17,22</sup> and Haugen et

al, who found that 21% of perpetrators were strangers.<sup>18</sup> The great discrepancy could be because the study by Bang is 20 years old and from the modest beginnings of the Oslo Referral Centre where most cases were police reported, and in the two studies by McGregor from Vancouver, the distinction could be caused by the pure police involvement and otherwise local traditions. Population-based surveys have, however, demonstrated much lower rates of stranger relationships, indicating that assault by strangers promotes police filing.<sup>39,43</sup>

The proportion of cases with penile penetrating assaults in this study confirms results by Schei et al (2003) but is somewhat lower than proportions reported previously.<sup>20,27</sup> These studies either enrolled victims medically examined regardless of police involvement, or only included victims reported by the police, which would tend to increase the number of cases of completed intercourse. Another contribution to the difference could be the victim's need for examination for sexually transmitted diseases, which in Denmark might be obtained more easily elsewhere.

Of great importance in the collection of forensic evidence is the time delay from assault to medical examination, and the fact that victims allowed examination could predict the seriousness of the sexual assault. Our findings of delay are comparable with other studies, albeit at the better end, with 70% of the victims referred within 24 hours and distinctly better than the 50% observed by Santos et al.<sup>21</sup> We believe the generally quick referral is mainly due to the existence of excellent police authority co-operation, a teamwork integrated into the daily effort of WeDSAC to bring understanding for and interest in the medical examination.

The diagnosis of genital lesions is consistent with some published data<sup>18,20</sup> but other reports range from 10% to 87%.<sup>7,44-48</sup> Different use of colposcopy, emphasis on prepubertal girls, inclusion of redness/swelling, and differences in involvement of law enforcement can explain

this great variation. Slaughter et al, who used colposcopy, reported significantly fewer genital findings after vigorous consenting intercourse;<sup>28</sup> a fact very important for future examination protocols because genital lesions has not yet been proved to be significant for successful legal prosecuting.<sup>15,22,25,44,49</sup>

One of the stated hypotheses – that strangers use more violence to obtain the desirable – was not confirmed, which is in contrast to other studies.<sup>43,50,51</sup> This can be interpreted as meaning that the victims are so frightened that they do not resist or that partners are aggressive as well.<sup>52,53</sup> The other two hypotheses were confirmed as mostly young people were assaulted in public, and knowing the perpetrator caused more completed sexual intercourses. In concordance with Scott & Beaman,<sup>35</sup> assault by strangers could be characterised as an attempt with either a good chance of escape or a hopeless setting was chosen by the perpetrator due to impulsive action. Contrariwise, Ullmann & Siegel found 49% of stranger-rapes completed among an interviewed female population with no emphasis on unfounded allegations, though.<sup>52</sup>

Contrary to Scott & Beaman,<sup>35</sup> but similar to Brecklin & Ullman,<sup>54</sup> we did not find associations between alcohol consumption and reported intercourse completion.

The estimated annual incidence rate is higher than previously reported in other Danish studies,<sup>4,8</sup> but it may be due to the inclusion of psychologist only contacts in the study. Bang introduced the “rape-index” in 1993, and she reported an incidence in Oslo of 37 per 100,000 inhabitants.<sup>10</sup> WeDSAC previously showed incidences for major Nordic cities from 30 to 148 per 100,000 women aged 12-50 years, the larger the city, the smaller the incidence.<sup>9</sup> Most studies, however, rely on lifetime prevalence obtained by public surveys based on phone, questionnaires, or gynaecologic outpatients, ranging from one out of three to one out of 33 women.<sup>40,55-59</sup> This contrasts sharply with the incidences recognised by the police, and

accounts at 5% of the “real” incidence has been suggested.<sup>60</sup> Our approach to the “dark figure” is that one out of three victims are not reported to the police. Obviously, the figure is much larger because many victims first show up after several assaults, or, as suggested by the cited surveys, do not show up at all. However, population surveys and the present series could overestimate the “dark figure” of rape by illuminating the complainant’s feelings instead of legal judgment; but as mentioned in the beginning, sexual violence has a broad range of meanings depending on the persons asked. We believe the difference between referrals to the WeDSAC and the police reflect a tendency that the victims go to the WeDSAC for help instead of notifying the police, a trend that may increase the “dark figure” of sexual assault further.

## **5. Conclusion and perspectives**

The annual incidence rate has shown only minor changes during the years. Therefore it is important that medical examiners and police keep up to date regarding the information provided by characteristics and hypotheses tested in the present paper.

Risk factors as shown in this study along with the basic characteristics of victims and assault settings (i.e. most victims are school or college girls assaulted by someone they know, often in public and often when intoxicated) should be acknowledged in our efforts to suggest innovative and preventive implementations to sexual assault. From the news media one might easily get an unrealistic picture of victims of sexual assault, because it is not clear that 69% of the complainants had had a relationship to the perpetrator prior to the assault, and 41% of the intercourses were without penile penetration.

It is necessary to move from elusive to exclusive prevention by means of identifying promising practises, starting with how to reach the groups of interest as identified in this study, together with future research in the controversial “dark figure”. The results of our study are also important in the public debate as to how politicians and leaders of multidisciplinary public centres should prioritise endeavours.

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## Tables

Table 1

Number and incidence of sexual assault in Aarhus and data source distribution in the study period

Year	Numbers	Incidence*	Data source		
			Medical (%)	examiner (%)	Police (%)
1999/2000	81	12.9	53	72	56
2001	83	14.6	58	58	57
2002	83	15.4	57	76	67
2003	96	17.5	60	67	65
2004	<u>80</u>	14.7	59	56	70
Study- period	423	14.5	57	66	63
$\chi^2_{\text{test}}$			$P=0.93$	$P=0.03$	$P=0.25$
$\chi^2_{\text{trend}}$			$P=0.45$	$P=0.21$	$P=0.04$
Median age (range)			24 (12-87)	21 (12-87)	19 (13-54)

\*Annual rate per 100,000 inhabitants aged 12-87 years after removal of repeat victims in the study-period

Table 2

Gender, age, and sociodemographic data of victims of sexual assault in comparison to the general population of Greater Aarhus

	<b>Study population (n=423)</b>		<b>Greater Aarhus**</b>
	<b>Numbers</b>	<b>%</b>	<b>%</b>
<b>Gender</b>			
Male	13	3	
Female	410	97	
<b>Age</b>			
Median age males	15; range 13-25 yrs		
Median age females	21; range 12-87 yrs		
<b>Age group</b>			
12-14 yrs	59	14	4
15-17 yrs	84	20	4
18-24 yrs	122	29	11
25-35 yrs	77	18	20
36-87 yrs	81	19	61
<b>Occupation*</b>			
Employed	73	21	62
Unemployed	46	14	3
Education	187	54	10
Retiree	33	10	20
Other	3	1	5
<b>Ethnicity</b>			
Denmark	358	85	93
Rest of Scandinavia	14	3	0.5
Rest of Europe	14	3	2
Middle East	18	4	2
Africa	6	1.5	1
Asia	10	2	1
North/South America	3	0.5	0.5
<b>Type of dwelling*</b>			
Alone	98	26	
Alone with kids	32	8	
With partner	44	12	
By parents	120	32	
With others	44	12	
At an institution	28	7	
Place of education	13	3	

\*81 missing in occupation and 44 missing in dwelling

\*\*From Statistics Denmark, average 2000-2004, people at risk (12-87 yrs) only

Table 3

Place of assault and victim-assailant relationship in cases of sexual assault by completed assault, way of penetration, and ejaculation (N=423)

Determinant	Study-population		Penile intercourse									Ejaculation			
			No	Yes											
				Vaginal		Oral		Anal							
N	%	%	%	PPR	95% CI	%	PPR	95% CI	%	PPR	95% CI	%	PPR	95% CI	
<b>Place of assault</b>															
Private				1.8	1.4-2.3		2.1	1.2-3.9		1.6	0.7-6.6		2.6	1.7-3.9	
Victim's home	99	25	31	59			15			13			51		
Assailant's home	75	19	25	65			29			7			47		
Other home	55	14	30	67			13			7			46		
Public indoor				1.8	1.3-2.5		3.9	1.9-8.3		1.5	0.3-6.6		1.1	0.4-2.9	
Pub	14	4	57	43			21			7			18		
Place of education	7	2	33	33			40			20			0		
Work	3	1	0	67			33			0			2		
Public outdoor				1			1			1			1		
Street/backyard	78	19	71	23			6			7			16		
Park/forest/beach	59	14	50	47			12			6			28		
Other (e.g. car)	11	3	40	67			20			0			29		
Total*	401	101													
<b>Relationship</b>															
Partner	60	15	29	59	1.9	1.4-2.6	19	3.0	1.2-7.8	12	2.0	0.7-5.5	67	3.3	2.1-5.1
Family	12	3	18	82	**		0	**		0	**		67	**	
Acquaintance	121	30	32	57	1.7	1.2-2.3	24	4.5	1.9-10.1	10	1.9	0.7-4.9	33	1.6	1.0-2.7
Contact	85	21	31	62	1.8	1.4-2.5	20	3.7	1.5-9.1	8	1.5	0.5-4.4	27	1.8	1.0-3.1
Stranger	125	31	65	33	1		5	1		5	1		21	1	
Total*	403	100													

Note: Columns equals population number and 100% for study-population. Row for intercourse and ejaculation does not equal 100% because vaginal, oral, and anal intercourse could happen during the same assault.

\*22 missing in Place of assault and 20 missing in Relationship to assailant when Study-population. 48-68 missing when Penile intercourse. 167 missing when Ejaculation.

\*\* Family relationship is included in Partner when PPR estimate.

Table 4

Verbal threats or physical coercion during the

assault by relationship (in case of medical examination or police reporting)

Used coercion	Total		Partner		Family		Acquaintance		Contact		Stranger	
	N	%	N	%	N	%	N	%	N	%	N	%
None	80	27	9	18	4	40	30	38	19	32	18	17
Threats	6	2	1	2	0	0	2	3	3	5	0	0
Mild	148	49	23	47	3	30	37	48	28	47	57	55
Moderate	29	10	7	14	0	0	1	1	5	8	16	15
Severe	38	13	9	18	3	30	8	10	5	8	13	13
Total	301	101	49	99	10	100	78	100	60	100	104	100
$\chi^2_{\text{test}}^*$			$P=0.12$		$P=0.47$		$P=0.004$		$P=0.24$		$P=0.006$	
$\chi^2_{\text{trend}}^*$			$P=0.046$		$P=0.87$		$P=0.0008$		$P=0.09$		$P=0.003$	

30 cases missing

\*Test on 2x3 tables with coercion classified in none/threats, mild and moderate/severe groups

Table 5  
Multivariate logistic regression analysis showing the association (odds ratios – OR) between victim and assault characteristics of sexual violence along with the medical findings of genital lesions

Determinants	Public place of assault (n=223)		Victim knowing the perpetrator (n=221)		Victim exposed to physical coercion (n=214)		Complete sexual assault (n=205)		Genital lesion (n=205)	
	%	Adjusted OR (95% CI)	%	Adjusted OR (95% CI)	%	Adjusted OR (95% CI)	%	Adjusted OR (95% CI)	%	Adjusted OR (95% CI)
Age										
12-14	11	4.15 (1.50-11.5)	4	15.5 (2.74-87.2)	8	0.14 (0.05-0.44)	13	1.04 (0.28-3.84)	15	0.92 (0.24-3.50)
15-17	13	3.40 (1.33-8.70)	19	1.24 (0.42-3.70)	14	0.40 (0.15-1.05)	18	1.97 (0.59-6.51)	21	1.21 (0.41-3.61)
18-24	26	2.09 (0.90-4.84)	29	1.21 (0.47-3.11)	27	0.92 (0.39-2.17)	24	0.65 (0.26-1.64)	23	0.95 (0.35-2.55)
25-34	21	1.88 (0.78-4.55)	25	1.20 (0.44-3.25)	25	0.94 (0.38-2.30)	19	0.61 (0.24-1.56)	17	0.64 (0.21-1.93)
35+	29	1	22	1	25	1	26	1	23	1
Alcohol										
None	58	1	47	1	56	1	53	1	55	1
Yes	42	1.84 (1.03-3.31)	53	1.21 (0.59-2.49)	44	0.50 (0.27-0.94)	47	1.52 (0.77-3.03)	45	0.78 (0.38-1.64)
Place of assault										
Private			32	1	60	1	71	1	62	1
Public			68	0.09 (0.04-0.18)	40	3.96 (1.78-8.83)	29	0.49 (0.22-1.11)	38	1.34 (0.57-3.18)
Relationship to perpetrator										
Known					69	1.22 (0.56-2.68)	71	2.92 (1.35-6.28)	74	0.88 (0.36-2.17)
Unknown					31	1	29	1	26	1
Physical coercion										
None							30	1	41	1
Yes							70	1.82 (0.87-3.81)	59	0.60 (0.28-1.31)
Complete										
No									12	1
Yes									88	3.73 (1.31-10.6)



# PAPER II





## Legal aspects of sexual violence—Does forensic evidence make a difference?

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### ABSTRACT

A survey was done of 307 alleged victims of sexual violence reported to the police departments in Greater Aarhus, Denmark, in 1999–2004. The legal disposition was ascertained and related to victim and assault characteristics together with the forensic medical and laboratory findings. The police pressed charges in more than half of the cases and 11% turned out to be false allegations. Nineteen percent of all cases ended with sentencing of the defendant. Sperm was detected in 35% of the examined and analysed cases, and in 46% consumption of alcohol prior to the assault was reported. Information in the forensic report regarding injury documentation, intoxication, and detection of sperm and DNA match between victim and alleged assailant did not aid in the prosecution of the case. Severe coercion used by the assailant increased the likelihood of conviction. Intoxication estimation and sperm detection suffered from low sensitivity compared with laboratory analyses. Results suggest the need for new research and optimising the sexual assault examination protocol to strengthen the legal impact of forensic evidence.

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### 1. Introduction

As previously reported, 66% of the known sexual assaults in Greater Aarhus during a period from 1999 to 2004 were notified to the police authorities [1]. What were the legal consequences, and did the forensic examination make a difference?

Conviction rates of defendants in cases of sexual assault vary from 10% to 69%, and significant associations between successful prosecution and evidence of trauma, use of weapons and severe coercion, and young age have been found, but inconsistently [2–10]. In other studies, focus has been on the association with charge filing [11–14]. Previous Danish studies revealed conviction rates from 15% to 24% and that several injuries were associated with imprisonment [15–18].

Published studies concerning forensic findings reported sperm detection on microscopy in 13% to 63% of cases [2–6,12,15,16,19–23]. The documentation of genital lesions ranged from 10% to 87% [2,24–30], and bodily (extra-genital) lesions ranged from 25% to

90% of the cases [13,31]. Self-reported use of alcohol prior to the assault was reported in 42% to 71% of cases [16,24,31–35].

Complainants of sexual violence can report the incident to the police department, or they can seek help from the local rape crisis referral centre. Often, but not always, the police authorities in Aarhus request that a medical examination be conducted at the Western Danish Sexual Assault Center (WeDSAC). Since 1999, the centre has used a sexual assault examination protocol for documentation and forensic evidence collection [36]. At the centre, the victims of police-notified cases as well as victims without police filing are offered the same examination and support. In case of notification, a written report is subsequently mailed to the police department, and the samples collected are transferred to forensic laboratories for – upon police request – analysis. In the other case, protocols and biologic material and clothes are kept for three months awaiting the victim's decision regarding filing or not. In case of later filing, the police request a forensic report and ensure that the collected samples are transferred to laboratories for analysis.

Previous Danish studies were based on case material collected many years ago and sample sizes were small. Internationally, there is also a striking paucity of information to assess the impact of forensic evidence. The minimum amount of forensic evidence needed to aid the prosecution and whether service initiatives can be improved has not been rigorously determined [37]. Hence, a

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new study with a larger sample size that includes cases without examination is required to fulfill demands from the victims and the police for the best care concomitant with optimal forensic evidence collection.

The aims of this study were to ascertain the legal and law enforcement aspects of cases of sexual assault in a well-defined area and determine associations between conviction and victim characteristics, assault characteristics, and medical findings. In addition, the sexual assault examination protocol was evaluated with regard to the legal usefulness of collecting forensic samples and documentation with emphasis on injuries, alcohol, and sperm detection.

**2. Materials and methods**

The study was a retrospective descriptive single-sample survey. In this study sexual violence (or assault) is defined as involuntary attempted or achieved penile, finger, or object penetration of the vagina, anus, or mouth, which is in accordance with the WHO [38].

Cases of sexual assault in a well-defined geographical area were identified in a five-year period from November 1, 1999 to December 31, 2004 in the files of three data sources: (a) the police departments of Greater Aarhus, (b) the WeDSAC, and (c) the Institute of Forensic Medicine at the University of Aarhus (IFM). The area, covering 4561 km<sup>2</sup>, contains the second largest city in Denmark and had an average population during the study period of 645,000 inhabitants (539,000 people aged 12–87 years). This equates to 1/8 of Denmark's population.

Cases reported to the police were identified in police departments files using search criteria regarding sexual crimes in the Danish penal code in victims over the age of 12 years [39].

Cases from the WeDSAC included all referrals to the centre known to have been reported to the police. Information from the victims undergoing a medical examination had been recorded on a standardised registration form. Genital lesions were identified by macroscopic visualisation during the gynaecologic examination. Colposcopy was used occasionally. Sperm samples were taken from the mouth, vagina, or anus and examined by microscopy of dried and haematoxylin and eosin-stained slides.

Information of interest and possible determinants of the legal outcome were as follows:

(a) sociodemographics of the victim; (b) the assault characteristics comprising meeting place prior to assault, place of assault, type of the assault (complete when vaginal, anal and/or mouth penetration), ejaculation, use of coercion (mild (shackled), moderate (blow, kick, bite), or severe (weapons or strangulation)), and levels of relationship to the assailant: partner (victim and assailant knew one another sexually, e.g. present or ex-husband/boyfriend), family (assailant is a relative), acquaintance (knew one another but had not had a sexual relationship previously), contact/date (victim and assailant only just met, typically less than 24 h before the alleged assault, hence had not had a sexual relationship previously), and stranger (victim and assailant had not previously seen each another), (c) time delay from assault to filing and from assault to medical examination, (d) findings at the medical examination including presence of sperm, bodily injuries (redness, bruising, abrasion, swelling, laceration, and fracture), and genital injuries (abrasion, swelling, and laceration); (e) genetic findings including presence of sperm and DNA match between victim and suspect, (f) alcohol consumption (three measures: self-reported alcohol intake 6 h prior to the assault – information considered valid [40,41], clinical estimate by the medical examiner, and the blood-alcohol content (toxicology report)).

The legal outcomes of the sexual assault cases mentioned in the study are given in accordance with the Danish Administration of Justice Act and regrouped in order to improve comprehension of the management of the public prosecutor's onus of proof:

- A. No suspect or settings incompatible with rape,
- B. alleged assailant free—the public prosecutor failed to lift the onus of proof,
- C. alleged assailant convicted – guilty of charge,
- D. false report/accusation admitted by the “victim” or charged by the police.

The four groups (A–D) were used as the legal disposition of the police and can be seen in the Figure. Groups B and C were used in the regression analysis for conviction.

Fig. 1.

Permission to go through police reports was obtained from The Danish Ministry of Justice. The Danish Data Protection Agency allowed the collection of data.

Statistical analysis was made using STATA 8.2. Tests applied for categorical data were Pearson's  $\chi^2$ -test, Fisher's exact test,  $\chi^2_{trends}$ -test, and statistical significance was assumed if  $P < 0.05$ . Male gender was associated with conviction, but since very few males were present, and none of the charged cases ended without conviction, male gender was excluded from the regression analysis. Variables with bivariate significance for females were included in the multivariate logistic regression analysis and used to estimate the strength of the association of the selected variables with the legal outcome by crude and adjusted odds ratios (OR) and 95% confidence intervals (95% CI). Interaction terms as effect measure modification were examined upon the published model.

**3. Results**

*3.1. Legal disposition*

In total, 307 cases of sexual violence reported to the police departments in Aarhus were identified, and the legal outcome was known in 277. The notification happened within 24 h after the assault in 71% of the cases. The top of the Figure shows the preliminary legal outcomes. It is seen that charges were filed in 151 (54.5%) cases, and 97 (35%) were cases with no identified perpetrator or evidence clearly revealed the suspect could not have been the assailant or obviously had no desire to commit sexual aggression. The bottom of the Figure shows the final legal outcomes. Regarding filing charges, 89 cases (59%) were dropped before prosecution – the vast majority because of insufficient evidence. A conviction was secured in 52 (19%) of cases. The convictions ranged from fines, conditioned sentences, and social supervisory control to two and a half year's imprisonment.

*3.2. Description of the filing victim and reported assault*

Table 1 summarises the victim and assault characteristics of the cases reported to the police. Twelve (4%) victims were males with a median age of 14.5 (range 13–28 years), and the female median age

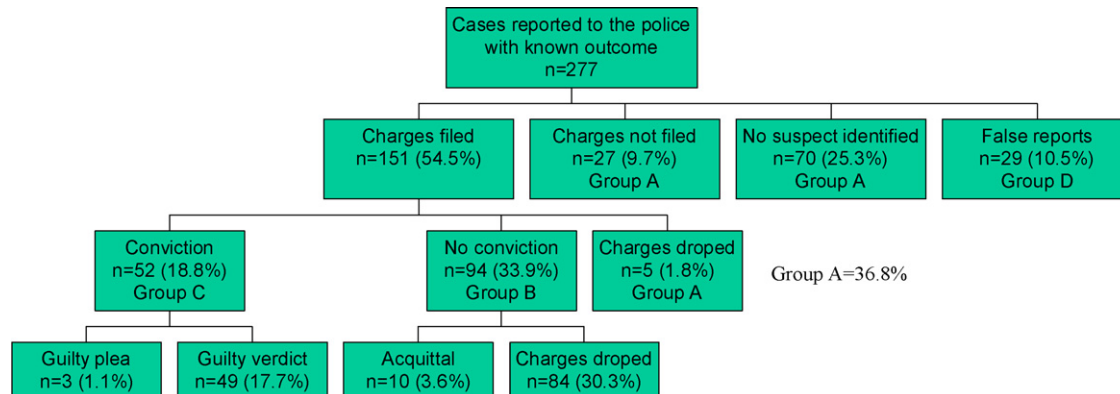


Fig. 1. Legal disposition of cases of sexual assault reported to the police departments in Greater Aarhus between November 1999 and December 2004.

**Table 1**  
Distribution of victim sociodemographics and assault characteristics of all police-reported cases, of female cases only, and of charged female cases ( $n = 140$  excluded 5 dropped cases due to baseless charge) by conviction

Variable	Total reported		Conviction (females)		P
	All, $n$ (%) ( $N = 307$ )	Females, $n$ (%) ( $N = 295$ )	Yes, $n$ (%) ( $N = 46$ )	No, $n$ (%) ( $N = 94$ )	
<b>Victim</b>					
<b>Sex</b>					
Male	12 (4)		6 (12)	0	0.002 <sup>a</sup>
Female	295 (96)		46 (88)	94 (100)	
<b>Age</b>					
Mean age males (range)		16 (13–28)	14 (13–16)	–	
Mean age females (range)		26 (12–87)	29 (13–81)	26 (12–87)	
<b>Age-groups</b>					
12–14 years	46 (15)	40 (14)	8 (17)	17 (18)	0.8
15–17 years	53 (17)	48 (16)	4 (9)	16 (17)	0.2
18–24 years	92 (30)	92 (31)	11 (24)	19 (20)	0.9
25–34 years	57 (19)	56 (19)	11 (24)	20 (21)	1.0
35–87 years	59 (19)	59 (20)	12 (26)	22 (23)	Ref.
<b>Type of dwelling (<math>n = 272</math>)</b>					
Alone/with kids	88 (32)	88 (34)	16 (37)	32 (37)	1.0
With somebody else	184 (68)	172 (66)	27 (63)	55 (36)	
<b>Occupation (<math>n = 262</math>)</b>					
Employed/education	192 (74)	182 (73)	25 (60)	64 (79)	0.02
Unemployed	70 (26)	68 (27)	17 (40)	17 (21)	
<b>Ethnicity</b>					
Denmark	262 (85)	251 (85)	36 (95)	83 (94)	0.8
Middle East/Africa	21 (7)	20 (7)	2 (5)	6 (6)	
Rest	24 (8)	24 (8)			
<b>Assault characteristics</b>					
<b>Meeting place (<math>n = 262</math>)</b>					
Private	115 (44)	112 (44)	34 (74)	50 (56)	0.04
Public	147 (56)	140 (56)	12 (26)	40 (44)	
<b>Place of assault (<math>n = 304</math>)</b>					
Private	158 (52)	150 (51)	37 (80)	63 (67)	0.1
Public	146 (48)	142 (49)	9 (20)	31 (33)	
<b>Identical place (<math>n = 262</math>)</b>					
Yes	193 (74)	186 (74)	36 (78)	65 (72)	0.4
No	69 (26)	66 (26)	10 (22)	25 (27)	
<b>Assailant relationship (<math>n = 305</math>)</b>					
Known			38 (83)	75 (80)	0.7
Partner	48 (16)	48 (16)			
Family	9 (3)	9 (3)			
Acquaintance	73 (24)	63 (21)			
Contact	57 (19)	57 (19)			
Stranger	118 (39)	116 (40)	9 (17)	19 (20)	
<b>Sexual intercourse (<math>n = 291</math>)</b>					
Attempted	104 (36)	103 (37)	17 (38)	25 (27)	0.2
Completed	187 (64)	176 (63)	28 (62)	67 (73)	
<b>Anal penetration (<math>n = 287</math>)</b>					
Yes	30 (10)	22 (8)	6 (13)	10 (11)	0.7
No	257 (90)	253 (92)	39 (87)	80 (88)	
<b>Coercion (<math>n = 280</math>)</b>					
None/verbal threats	77 (27)	76 (28)	8 (18)	31 (33)	Ref.
Light	147 (53)	140 (52)	21 (48)	51 (55)	0.3
Moderate	25 (9)	24 (9)	5 (12)	4 (4)	0.03
Severe	31 (11)	30 (11)	11 (22)	7 (8)	0.003

$n$  highlighted if  $n \neq 307$ .

<sup>a</sup> Fisher's exact test.

was 21 (range 12–87 years). A known assailant was reported in 61% of the cases.

Fifty-five percent experienced vaginal intercourse, 10% were subjected to anal intercourse, and 17% were exposed to oral intercourse (>64% because different sexual acts could take place during the same assault). In 41% of the cases, the victim reported ejaculation by the perpetrator. If the assault was not completed, strangers were involved in 65% of the cases. In 32% of the cases

with severe violence, the perpetrator was a partner, and in 63% of the severe violence cases, the intercourse was completed. The unemployed victims suffered from partner-rape twice as often as the employed/students.

Table 2 shows that the most frequent meeting place prior to the assault was a private setting (44%), but street encounters were also often seen (28%). In almost every case in which victim and assailant met at their own residences, the sexual assault also took place

**Table 2**  
Meeting place prior to the assault, place of assault, and how often they were the same

Place	Meeting place		Place of assault		Identical places
	N	%	N	%	
Private					
Victim's residence	60	23	73	24	92
Assailant's residence	29	11	52	17	97
Other private home	26	10	33	11	58
Public					
Street/backyard	72	28	75	25	79
Pub/bar	35	13	11	4	29
Park/forest/beach	23	9	46	15	83
Other places (e.g. car)	8	3	7	2	50
Place of education	6	2	4	1	50
Work	3	1	3	1	67
Total	262 <sup>a</sup>	100	304 <sup>a</sup>	100	74 <sup>b</sup>

<sup>a</sup> 45 and 3 cases missing, respectively.

<sup>b</sup> In average.

there, whereas this occurred in only 29% of the cases when victims met their offenders at a pub or discotheque.

### 3.3. Medical and laboratory findings

Two hundred and sixteen (70%) victims underwent a forensic medical examination. The forensic medical examination revealed that 78% of the victims had injuries: 58% had skin or bone

injuries, 19% had both extra-genital and genital lesions, and only 1% had genital damage alone. No significant differences ( $\chi^2 = 0.9$ ) were found regarding presence of bodily injuries and time from assault to examination if less than 72 h postassault, and no significant trend ( $\chi^2 < 0.05$ ,  $\chi^2_{\text{trends}} = 0.1$ ) was established regarding genital lesions. Table 3 summarises the medical and laboratory findings of the cases notified to the police.

**Table 3**  
Distribution of forensic medical findings and forensic laboratory results of all medically examined police-reported cases, females only, and charged female cases ( $n = 140$  excluded five dropped cases due to baseless charge) by conviction

Variable	Total examined		Conviction (females)		P-value ( $\chi^2$ )
	All, n(%) (N = 216)	Females, n(%) (N = 210)	Yes, n(%) (N = 46)	No, n(%) (N = 94)	
Time-delay assault-examination					
<24 h	163 (76)	157 (75)	37 (80)	73 (78)	0.7
>24 h	53 (24)	53 (25)	9 (30)	21 (22)	
Bodily injuries (n = 209)					
Yes	162 (78)	160 (77)	31 (84)	52 (79)	0.5
No	47 (22)	47 (23)	6 (16)	14 (21)	
Genital injuries					
Yes	42 (19)	41 (19)	7 (19)	20 (29)	0.3
No	174 (81)	170 (81)	30 (81)	49 (71)	
≥4 Lesions (n = 212)					
Yes	63 (30)	63 (31)	16 (42)	17 (25)	0.07
No	149 (70)	143 (69)	22 (58)	52 (75)	
Self-reported alcohol consumption of more than 1 unit (n = 188)					
Yes	86 (46)	86 (46)	9 (28)	23 (38)	0.4
No	102 (54)	102 (54)	23 (72)	38 (62)	
Clinically intoxicated (n = 208)					
Yes	47 (23)	47 (23)	5 (14)	11 (16)	0.7
No	161 (77)	161 (77)	31 (86)	56 (84)	
Blood-alcohol >0.00 (n = 62)					
Yes	41 (66)	41 (66)	6 (50)	12 (67)	0.4
No	21 (34)	21 (34)	6 (50)	6 (33)	
Sperm seen in microscope (n = 152)					
Yes	45 (30)	45 (30)	10 (31)	10 (23)	0.4
No	107 (70)	106 (70)	22 (69)	34 (77)	
Sperm by laboratory (n = 119)					
Yes	42 (35)	42 (35)	11 (38)	17 (35)	0.8
No	77 (65)	77 (65)	18 (62)	31 (65)	
Positive DNA match <sup>a</sup>					
Yes	31 (14)	31 (15)	13 (26)	17 (18)	0.3
No	185 (86)	181 (85)	38 (74)	77 (82)	

n highlighted if  $n \neq 216$ .

<sup>a</sup> Between samples from victim and reference from suspect. No is due to no material detected, no reference, no suspect, no samples taken or no analysis of sample.

Regarding the self-reported alcohol intake 6 h prior to the assault, 46% had drunk more than one unit (0.2 pro mille) of alcohol. According to the time delay from assault to examination and interpreting the clinical rating for alcohol intoxication, 34% of the victims examined no later than 12 h after the assault were estimated to be under the influence of alcohol. The correlation between self-reported and physician-estimated consumption 12 h prior to the assault showed disagreement regarding not reported drinking and estimated influence in 5%, and disagreement regarding reported drinking and estimated no influence in 34% of the medically examined cases. Concerning the objective data, the toxicology report displaying the blood alcohol content revealed that 66% had a positive pro mille with a mean level of 0.58 (range 0.01–2.27). Disagreement with the physician-estimated intoxication was found in 13% of the cases. However, in 154 (71%) of the medically examined cases, a toxicology reports was missing, either because no blood sample was taken (113) or because no analysis was performed/test result not found in police report. Forty-two percent of the victims with no blood sample taken arrived for medical examination later than 24 h postassault. The cases without a toxicology report disclosed a majority (122/154–79%) of victims had been estimated clinically not to be intoxicated.

Microscopic detection of sperm revealed that spermatozoa were seen in 30%. No significant differences ( $\chi^2 = 0.3$ ) were found regarding microscopic detection of sperm and time from assault to examination up to 72 h postassault. The medical examiner did not find sperm in 19% (8/42) of the cases detected by the genetics laboratory.

### 3.4. Associations of conviction

Tables 1 and 3 also give the victim and assault characteristics, and the medical and laboratory findings, respectively, in the charged female cases by conviction. In general, the forensic determinants investigated were not associated with conviction. Bivariate significant findings were use of moderate or severe coercion by the assailant, victim unemployment, and a private meeting place prior to assault. Regarding alcohol, the three different variables showed no associations.

Use of severe coercion by the assailant was the only determinant significantly associated with conviction after adjustment (OR 7.1), as seen in Table 4.

## 4. Discussion

### 4.1. Findings

Determinant for conviction was use of severe coercion by the perpetrator. No forensic findings were associated with conviction.

**Table 4**  
Multivariate logistic regression analysis showing the association (odds ratio – OR) between female victim and assault characteristics and forensic medical findings of police-reported cases of sexual assault and the legal outcome: conviction ( $n = 117$ )

Determinants	Crude OR	95% CI	Adjusted OR	95% CI
Victim/assault variables				
Coercion used				
Severe	6.1	1.8–20.3	7.1	1.8–27.3
Moderate	4.8	1.1–21.0	4.8	0.9–25.1
Mild	1.6	0.6–4.0	1.7	0.6–4.7
None/verbal threats	Ref.			
Unemployment	2.6	1.1–5.7	2.2	0.8–5.8
Private meeting place	2.3	1.0–4.9	1.8	0.7–4.6
Age 12–17 <sup>a</sup>	1.0	0.5–2.0	1.4	0.5–3.8

CI: Confidence interval.

<sup>a</sup> Age-variable dichotomised.

The police authorities filed charges in 55% of the cases, and 19% of all cases ended with conviction. In 19% of cases, the forensic clinician did not find sperm detected by the genetics laboratory.

### 4.2. Limitations, strengths

Information regarding personal aspects and the alleged assault is frequently given by the victim just after the assault and could be deficient because of stress, tiredness, or alcohol intoxication. But the police questioned the complainant several times and took notice of the testimony of the alleged perpetrator and possible witnesses and the victims had chosen to notify the police, and therefore this information is not believed to cause bias. However, false accusations are clearly nothing but information problems and will increase the characteristic features of false allegation, but they will have no influence on the associations with conviction. The real information problem concerns cases in which charges were not filed due to unfounded accusation. Are false statements also involved in these cases? Such cases probably lowered the false allegation rate, thus increasingly bias the number of cases not charged and cases with no conviction.

The police officer selects which victims will have a forensic examination, and chooses whether or not to send biological material for alcohol or genetic analysis. This creates selection problems in the estimates of association with conviction, because not every single victim is examined or supplies forensic evidence. However, no bias is believed to occur because the non-examined victims, assuming the police stuck to the instructions, probably had experienced attempted sexual assaults or delayed reporting. The possible DNA match between victim and alleged perpetrator is thus not consistent and is difficult to interpret as a factor for conviction because its influence is reduced by the missing evidence collection. Concerning injuries, lack of an examination could also decrease the association with conviction.

Confounding can arise in connection with all determinants used. Variables of special interest are age and gender that in turn could promote certain settings and encounters. For instance, age and gender can confound the association with place of assault, sexual act, and relationship to perpetrator. This was, however, eliminated by use of regression analysis for female victims only. Gender stratification was not possible because of the very low number of male cases. However, conditions and associations specific to males deserve further examination, but await more material. The above-mentioned problems with selection overestimating some assault characteristics will not cause association biases, and thus not affect the outcome measures and maintain good intern validity.

Another matter to be taken into account is the differences between the Danish and the Anglo-American administration of justice. One of the most outstanding differences in the Danish practice of law is the public prosecutor's possibility of dropping the filed charge without involving the court. This appraisal implementation is constructed in part to protect the complainant in case of expected acquittal due to the lack of convicting evidence. Charging, importantly, is also decided with regard to the defendant's rights. Hence, this could mean more charges. The kind of trial – court judge, lay judge, or grand jury – may also affect the legal outcome conviction because lay people are more influenced by emotions than are professional judges and give higher credibility to the victim's statements [42]. Thus, different charging and trial procedures lower international extern validity.

### 4.3. Comparison and interpretation of results

The identified incidence of charging in this study is higher than in four Canadian and American series, which revealed that 29% to

33% of police files end with charges, even though all victims had a medical examination [2,4,5,12]. Furthermore, the cited studies had higher proportions of severe coercion (17% to 28%) and more genital and extra-genital injuries – determinants known to be associated with charging. Thus, comparing studies shows that Danish judicial practice results in more charges and that a higher number of cases are dropped before prosecution. This indicates that comparison by charges is difficult across national borders and that the preferred end-point should be conviction.

The rate of conviction in relation to notification was 19%. The same percentage was found in an Aarhus study published in 1993 [16]. Based on this figure and acknowledging the small sample size, the improved training for sexual assault examiners after the establishment of the WeDSAC has not increased the efficacy of forensic evidence for successful prosecution. American and Canadian studies from the early 1980s through late 1990s report rates from 10% to 69% [2–5,7,10,12], and in Norway 29% of the cases end with sentences [6]. The proportion of conviction in relation to cases taken to court was consistent with previous reports [6,31]. Overall, the conviction rate in Aarhus was in line with compared studies, because they generally only included forensically examined cases and weapons, severe coercion and completed penile penetration were more often involved. For a change in charging and prosecuting procedures to be relevant, it would require a new study comparing convictions more thoroughly, together with cases of charges dropped due to insufficient evidence.

Forensic evidence collection and injury documentation cannot by themselves reveal whether an examined case of sexual violence is a crime against the complainant or not. Nor can this judgement rest on the complainant's credibility alone or the prosecutor's assessment of the likelihood of conviction. The latter practice is previous stated [7,13]. Hence, as the circumstances in sexual assault cases most often only involve the complainant and the accused, a third part – the forensic medical examiner – should serve as a witness. However, our study of forensic reports shows no associations between successful conviction and injury documentation, intoxication, and detection of sperm or DNA match. Instead, the perpetrator's use of severe coercion (strangulation or presence of weapons) was significantly associated with conviction after regression adjustment. This is in concordance with other studies [4,6]. Extra-genital injuries and young age are the only two factors found elsewhere to be significantly related to conviction, but this could not be corroborated in the present study [2,4,5,10,16,43].

The low frequency of sperm detected by microscopic examination reflects that 36% of the cases concerned attempts at penile penetration and that completed intercourse did not mean ejaculation (reported by victim in 41%). Another issue could be the 19% mismatch between clinical microscopy and genetics laboratory analyses. Some of the disagreement is due to the use of the phosphatase test and sediment microscopy by the geneticists. No studies have shown an association between sperm finding and conviction [2–6,12,15,16,19–22]. Hence, the presence of sperm has poor sensitivity in predicting sexual assault and securing conviction. Of course, the possibility of detecting DNA from an unknown perpetrator is potentially important and should be pursued.

The number of victims in Aarhus reporting alcohol intake was lower or equal to rates of 46% to 71% reported in previous Scandinavian studies [24,33–35]. We cannot explain this difference but drinking habits might not be the same throughout Scandinavia. It is difficult to evaluate the physician's skill in estimating the victim's alcohol intoxication in correlation with the self-reported estimate because of the time delay between assault and examination. The examples of discrepancy between the estimate and the laboratory measurement are inexpedient and

show the deficiencies in the clinical test used. Neither measures of self-reported or clinically estimated alcohol intake nor laboratory analysis were associated with unsuccessful prosecution, as otherwise indicated by Schei et al. [6]. Thus, these observations could explode the myth that alcohol intoxication prior to sexual assault is an attenuating circumstance and that the assault is therefore the victim's own fault.

One can state that a forensic examination is a medical procedure done in the dark, because we hope to find evidence, and the evidence found is of low sensitivity regarding assault or not. Many tests are for safety reasons only [44]. This situation would not be accepted in other medical disciplines [45]. However, the resultant reports should be of great use in the preliminary investigations, e.g. because detection of sperm, used by the police as a first step in the elimination of doubtful cases, especially when the complainant states amnesia, and additionally helping the victim realise the context of the assault, seems useful. A study is necessary which examines the primary outcome of the evidence collection and documentation used by the police detectives in the very early stages of investigation, as well as one that determines differences among subgroups of cases.

The varying results of intoxication and sperm detection and the missing association between conviction and forensic findings suggest that the sexual assault examination protocol needs to be optimised. Improvements could be achieved if the medical examiner looked for sperm even after 48 h and used techniques for quicker sperm detection like wet-mounted smears or prostate specific antigen-test [46,47]. Additionally, the medical examiner should improve the clinically estimated alcohol intake. What may not be relevant is routine genetic analysis of biological material, as it has no special influence on conviction. This is not surprising, because most complainants know their offender, and the offender seldom denies having sexual intercourse with the woman involved. Furthermore, the medical examiner may hesitate sending the collected material for analysis, awaiting the outcome of the primary police investigation.

#### 4.4. Conclusions

Acknowledging the lower external validity because of different systems of legislation worldwide, this study does give medical examiners and law enforcement officers a helpful tool by drawing attention to specific details important for the legal outcome. Documenting injuries carefully, having certain expectations of one finding leading to another, and creating a realistic image of a victim rather than a stereotype are important and should underline the responsibility of assuring the defendant's rights [14], which is extremely important when living in a community governed by law. Because up to 45% of all police-notified cases are either false or baseless, the examiner not only pays attention to obtaining evidence in favour of the victim. Furthermore, the finding that only an assault variable had any association with conviction could indicate that the forensic findings make no difference regarding conviction, and the question of guilt – after the doubtful cases are eliminated with the help of forensics documentation and evidence – is essentially a matter of trust and credibility.

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# PAPER III



**SEXUAL ASSAULT-INDUCED SEQUELAE: POSTTRAUMATIC STRESS  
DISORDER AND PRESENCE OF PAIN**

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## **Abstract**

The purpose of this paper was to estimate the prevalence of Post-Traumatic Stress Disorder (PTSD) and the presence of pelvic pain and back pain following a sexual assault in victims attending a rape crisis center, and to examine the interrelationships among these sequelae, victim and assault characteristics, and forensic findings. Ninety-three victims completed a questionnaire 2 to 5 years after the assault. Measures included the Harvard Trauma Questionnaire and a checklist for pelvic and back pain. Forty-five percent met the full PTSD diagnosis. Thirty-three percent and 38% had experienced pelvic or back pain, respectively, following the assault. Completed intercourse was a predictor for PTSD development, and unemployment was identified as a predictor for pelvic pain. PTSD increased the likelihood of pelvic and back pain 4-7 times. The results suggest that many victims are suffering from severe health outcomes several years after a sexual assault, indicating a need for follow-up monitoring and intervention.

## **Key-words**

Sexual assault, posttraumatic stress disorder, pelvic pain, back pain

Negative mental and physical health sequelae are consequences of sexual victimization, and research has established associations of sexual assault with posttraumatic stress disorder (PTSD) and somatoform symptoms (Helzer, Robins, & McEvoy, 1987; Koss, Dinero, Seibel, & Cox, 1988; Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992; Ford, 1997; Stein, Walker, & Forde, 2000; Frans, Rimmo, Aberg, & Fredrikson, 2005; Sack, Lahmann, Jaeger, & Henningsen, 2007). Several studies have indicated a higher frequency of PTSD in victims of sexual assault than in victims of other traumatic events (Kilpatrick et al., 1989; Norris, 1992; Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Perkonig, Kessler, Storz, & Wittchen, 2000; Elklit, 2002; Cortina & Kubiak, 2006).

A number of studies have revealed a high prevalence and persistence of PTSD several years postassault. Short term follow-up studies in settings like the one used in our study 94% of rape victims suffered from PTSD 2 weeks after the sexual assault, 65% after 1 month, and 47% after 3 months (Rothbaum et al., 1992), and in legally decided rape victims, 95% met the criteria for PTSD after 9 months (Faravelli, Giugni, Salvatori, & Ricca, 2004). In non rape crisis center settings with samples recruited and examined later after a sexual assault PTSD was shown to persist in 70% of a community cross-sectional sample of women recalling sexual violence (Ullman, Filipas, Townsend, & Starzynski, 2005), and in 65% of a convenient sample of women seeking treatment for premenstrual syndrome and reporting former episodes of sexual assault (Golding, Taylor, Menard, & King, 2000). U.S. national samples determined a lifetime prevalence of PTSD following rape of 46% and 32% (Kessler et al., 1995; Resnick et al., 1993).

Because sexual assault is not an uncommon lifetime event with a prevalence of 7% to 33% of adolescent/adult people (depending on the definition of a sexual assault, study design, sampling, and setting) (Acierno, Resnick, Kilpatrick, Saunders, & Best, 1999; Resnick et al.,

2000; Wijma et al., 2003; Olshen, McVeigh, Wunsch-Hitzig, & Rickert, 2007), and because PTSD is a rather common consequence of sexual violence, specific and immediate predictors alerting e.g. rape crisis center employees seem imperative in order to prevent or at least reduce the deleterious postassault sequelae.

Several studies from non rape crisis center settings have examined possible predictors of PTSD using different kinds of analyses in order to identify the victims most likely to develop the disorder. Young age, complete intercourse, and physical injury were identified to be individually associated with PTSD (Kilpatrick et al., 1989; Bownes, O'Gorman, & Sayers, 1991). Exposure to moderate/severe coercion and physical injury during the assault were found to be associated with PTSD in multivariate analysis (Stein et al., 2000; Cortina & Kubiak, 2006; Acierno et al., 1999). The relationship to the perpetrator was also reported as indicative of PTSD (Bownes et al., 1991; Campbell et al., 1999; Ullman, Filipas, Townsend, & Starzynski, 2006), whereas the media-recruited sample by Ullman and Filipas (2001) had no significant associations of either injury or relationship with PTSD after multivariate analysis. In the only study examining the relationship of PTSD with the legal outcome of the case, no association with PTSD by univariate test was found (Frazier & Haney, 1996). Socioeconomic information as occupation used by Kilpatrick et al. (1989) found no association with PTSD. More recent sexual assault studies used educational level as a correlate to PTSD with inconsistent findings of association with low level of education (Acierno et al., 1999; Ullman & Filipas, 2001; Ullman et al., 2006). In consistency with a negative impact of employment status and low education to postassault sequelae, a strong socioeconomic status-pain gradient was seen in a large U.S. community-based telephone survey (Krueger & Stone, 2008).

Chronic pelvic pain is also regarded as a posttraumatic health consequence in victims of physical (Schei, 1990) and sexual violence (Reiter, Shakerin, Gambone, & Milburn, 1991;

Walling et al., 1994b; Walling et al., 1994a; Golding, 1996; Lampe et al., 2000; Leserman, Li, Drossman, & Hu, 1998; Chandler, Ciccone, & Raphael, 2006). Holmes, Resnick, & Frampton (1998) – the exception of a study using a rape crisis center sample – described 18% of forensically examined sexual assault victims with pelvic pain at 6 weeks follow-up. Hilden et al. (2004) and Campbell, Lichty, Sturza, & Raja (2006) found 12% and 50%, respectively, of patients in a women's clinic with a history of sexual assault having pelvic pain. Faravelli et al. (2004) reported 83% of rape victims with defendants convicted in court having genital pain still after 9 months. Chronic back pain is another posttraumatic health consequence (Butler, Evans, Greaves, & Simpson, 2004; Manchikanti, Pampati, Beyer, Damron, & Barnhill, 2002; Hoffman, Papas, Chatkoff, & Kerns, 2007; Henningsen, Zipfel, & Herzog, 2007). Both chronic pelvic and back pain are considered as somatoform symptoms (Sack et al., 2007). Research of predictors of chronic pain in sexual violence is limited and inconsistent, and is absent regarding back pain. Predictors of chronic pelvic pain were reported as partner or stranger relationship to the assailant, physical injury, violent coercion, and completed intercourse, whereas the relationship to the abuser was non-significant in one study (Campbell et al., 2006; Golding, 1996; Hilden et al., 2004).

Although the studies just reviewed have examined the prevalence of PTSD and pelvic pain postassault, few focused solely on victims attending a rape crisis center in a yearlong prospective way. Theoretically, preassault factors, assault-related factors, and/or postassault attributions may lead to PTSD which in turn may lead to pelvic pain and/or back pain. The association between sexual assault and PTSD or chronic pelvic pain is already well established supporting that chronic back pain – as another somatoform symptom – also correlates with sexual assault. The interrelation of PTSD and pelvic/back pain is thought as a somatization of the trauma leading to physical revival instead of mental arousal (Elklit, 2000), further supported by studies showing people suffering from PTSD complaining of more non-

somatic symptoms (e.g. musculoskeletal and neurological) than non-PTSD subjects (Creamer, McFarlane, & Burgess, 2005; Davidson, Stein, Shalev, & Yehuda, 2004).

In the present study of a sample of sexual assault victims visiting a rape crisis center, the aims were to describe the prevalence of PTSD, pelvic pain, and back pain, and to determine the victim- and assault-related predictors of PTSD, pelvic pain, and back pain. It was hypothesized that completed intercourse, stranger assailant, physical coercion, young victim age, and injury would predict PTSD, pelvic pain, and back pain, based on past research and the expectancy of predictors of PTSD predicting pelvic and back pain as well. Furthermore, we hypothesized that PTSD itself could predict pelvic and back pain, and that unemployment would predict pelvic or back pain. The latter hypotheses were based on the expectation that PTSD patients would be likely to somatize postassault, and that unemployed people a priori have fewer resources and daily activities, thus being more engaged in own well being and pain signals. After the assault, then, the person is now both unemployed and victimized creating a diathesis of vulnerability. Ideally, victims' disclosure to rape crisis center (forensic examination and psychologist treatment) or police authorities should be positive social reactions and expected to be unrelated to PTSD, pelvic and back pain (Ullman & Filipas, 2001; Ullman, Filipas, Townsend, & Starzynski, 2007), whereas a notified case without conviction was expected to be related. Finally, we expected no decrease in prevalence of PTSD during the study period due to chronicity (Kessler et al., 1995).

## **Methods**

### *Participants*

We define sexual assault (or violence) as involuntary attempted or achieved penile, finger, or object penetration of the vagina, anus, or mouth.

Survey and register data were collected from a sample of adolescents/adults more than 12 years of age representing the entire caseload of victims at the Western Danish Center for prevention, treatment, and research of Sexual Assault (WeDSAC) during a five-year period from November 1, 1999 to October 31, 2004 (Ingemann-Hansen O, 2006). Forensic examination is offered within 48 hours of the assault with subsequent referral to a psychologist. Psychology treatment is also available without forensic examination and offered to victims within a 2 months period. The area of referral to WeDSAC includes Aarhus, the second largest city in Denmark, and covers 890,000 people of whom 750,000 are older than 12 years of age. Every referral to the WeDSAC was interpreted as a case of sexual assault.

Four hundred and nineteen victims (8 males and 411 females) were identified retrospectively in the WeDSAC files. Twenty-seven false allegations were excluded. A referral was considered false if the victim later admitted he/she lied or if the police pressed charges for false report/accusation. In case of more than one referral by the victim during the study period only the latest referral counted. Thirteen cases were excluded for this reason. Victims with unknown mail addresses (24), deceased victims (4), victims mentally disabled or unable to answering the questionnaire due to reading difficulties (4), or unwilling to have further contact with the WeDSAC (14) were also excluded. This leaves 333 eligible victims. All victims were at the primary visit asked to accept possible future requests from the WeDSAC either personally or to their general practitioner for research or follow-up. The survey was mailed to the sample victims 2, 3, 4, or 5 years postassault along with a cover letter describing the study. No compensation was offered.

Two hundred and forty victims failed to return the questionnaire ending with 93 victims. The total response rate was 28%. For the 2-year sample, 169 victims were available and 33% returned the questionnaire, for the 3-year sample, 10% (5) of 52 responded, 56 received the questionnaire in the 4-year sample with 13% response rate, and finally 64 had been at the

center 5 years ago and were reachable with a 45% return rate. Eighty-six percent had enough information to determine PTSD. Ninety-four percent and 92% had answered questions regarding pelvic and back pain respectively.

In total, 95% of the participants were ethnical Danes. Thirty-five percent were students, 30% employed, 10 % unemployed, and 8 % retirees - occupation unknown in 18%.

The 240 victims not completing the questionnaire did not differ (i.e.  $p > 0.2$ ) from the participants with regard to sociodemographics, assault histories, or forensic findings and legal outcomes.

### *Measures*

Basic background information collected in the files was the victim's age (1), gender, and occupation (employed/under education or unemployed) (2). Assault characteristics as the place of assault, use of coercion by assailant (3), the sexual act (4), and the victim and the alleged assailant's relationship (5) were also noted in the files. Postassault measures, such as time from assault to WeDSAC referral, bodily (6) and/or genital injuries (7) identified at the medical examination, having an examination (8), treatment by the psychologist (9), police notification (10), and the legal disposition in case of notification (11) were other variables collected.

The victim's relationship to the assailant was classified as knowing (partner, family, acquaintance, contact) or not knowing (stranger). The sexual act during the assault was complete in case of vaginal, anal, or mouth penetration. Use of coercion was categorized as none/verbal threats or physical coercion. Bodily injury was defined as redness, bruising, abrasion, swellings, lacerations, and fractures on body surface or bones. Genital lesions were abrasion, swelling, and lacerations interfemoral, anogenital, vaginal, or anal. The legal outcome according to the Danish Administration of Justice Act was dichotomized (conviction



yes = suspect guilty of charge, conviction no = no suspect, setting incompatible with rape (no charge or charge dropped due to baseless charge), or suspect free (acquittal or charge dropped due to insufficient evidence)).

The *Harvard Trauma Questionnaire Part IV* (HTQ) measures the occurrence of psychological symptoms associated with trauma and was used to provide a reliable diagnosis of current PTSD corresponding to the DSM-IV (Mollica et al., 1992; American Psychiatric Association, 1994). The answers were scored on a 4-point Likert scale (0 = not at all, 3 = very often). Scale items  $\geq 2$  were counted toward PTSD. The  $\alpha$ -values for the dimensions and scale in the present study were as follows: intrusion ( $\alpha = 0.81$ ), avoidance ( $\alpha = 0.82$ ) and arousal ( $\alpha = 0.85$ ). Total HTQ scale  $\alpha$  was 0.96. The Danish version was validated by Bach (2003).

A 4-item checklist developed for self-report assessment of pelvic pain and back pain was used. Victims were asked close-ended to check the symptoms they had had since the assault (e.g. “have you since the assault ever experienced pelvic pain“) - responses were rated on a 4-point Likert scale (0 = not at all, 3 = very often) - and whether they had the symptoms at the time of being questioned. The checklist was not standardized with established reliability and validity.

As mentioned above, the victims received the questionnaire 2, 3, 4, or 5 years after the primary examination or treatment at WeDSAC. However, despite the passage of time, no significant differences ( $\chi^2$ -test) were identified for the final outcomes: PTSD ( $p=0.6$ ), pelvic pain ( $p=0.7$ ), and back pain ( $p=0.7$ ). Therefore, the year factor was not taken into consideration in the further analysis.

### *Procedure*

The questionnaire covering cross-sectional outcomes (PTSD, pelvic pain, and back pain) was sent by mail to the victim's home address with a stamped return envelope at one of four distinct occasions postassault: 2, 3, 4, or 5 years after the primary referral to WeDSAC. The justification for this rationale of choice is in part logistic to include as many victims as possible during a limited period of time, and in part to test the chronicity issue hypothesized. A new questionnaire was sent in case of no answer after 2 months. Hence, each victim only had to return one questionnaire and the timing depended on the time since referral. Sociodemographics, assault characteristics, and legal outcome (baseline variables) were identified in the files of WeDSAC and police. Permission to go through police reports was obtained from The Danish Ministry of Justice. The Danish Data Protection Agency allowed the collection of data.

Statistical analysis was made using STATA 8.2. Tests applied for categorical data (bivariate analyses) were Pearson's  $\chi^2$ -test and Fisher's exact test, and statistical significance was assumed if  $p < 0.05$ . Tests were made on all three outcome variables PTSD, pelvic pain, and back pain (dependent) with all numbered predictor variables (independent). Significant predictor variables in the bivariate analysis were included in three multivariate logistic regression analyses and used to estimate the strength of the association with the dependent variables by crude and adjusted odds ratios (OR) and 95% confidence intervals (95% CI). Introducing an interaction term between forensic examination and completed intercourse removed the significance of completed intercourse for PTSD development, but the term itself was non-significant. Thus, no effect measure modification could be revealed and the examination variable was kept.

## Results

### *Sample demographics*

The most common type of sexual assault among the respondents was completed intercourse (61%) by vaginal penetration (86% of completed). Seventy-four percent knew their assailant (partners/family and acquaintances each making up 22%, and 30% were contact). A private residence was the place of assault in 61% of the cases. The perpetrator used physical coercion of some kind in 71% - weapons and strangling attempts composed 13%. Among the victims, 74% had a forensic medical examination within a median time of 11 hours (range: ½ to 140 hours) after the assault, whereas the victims treated only by psychologists received this after a median of 6 days (range: 0 to 180 days).

### *Prevalence and bivariate analyses*

Table 1 shows the prevalence and distribution of PTSD, pelvic and back pain. Fully, 45% of the assault victims met the PTSD criteria; 24% missed a PTSD diagnosis by one criterion (classified as subclinical PTSD).

At the time of questioning, 81% and 88% of victims revealing having experienced pelvic or back pain postassault stated they still felt pelvic or back pain, respectively. A cross-tab analysis revealed that 20% of all victims had had both pelvic and back pain and 31% only one of them.

In Table 2, an overview of possible predictors of the final outcomes is presented at the bivariate level. Stranger assailant, physical coercion, injuries, or neither treatment by a psychologist nor the legal disposition in case of police notification were associated with any of the outcomes. Correlations of the significant variables and used in the regressions are provided in Table 3. *Current* pain at the time of questioning did not correlate with PTSD diagnosis (data not shown).

### *Regression analyses*

Table 4 summarizes the results of three different logistic regression analyses with PTSD, pelvic pain, and back pain as the dependent variables together with the predictors significant at the bivariate level. Completion of the intercourse was associated with PTSD (OR 4.0) whereas the significance disappeared for forensic examination after adjustment. Unemployment was the only factor significantly associated with pelvic pain. PTSD was statistically significant for co-occurrence of pelvic pain or back pain (OR 4.0 and 7.0), and pelvic pain and back pain had a non-significant increased risk for one another.

### **Discussion**

This study examined prevalence and correlates of PTSD, pelvic and back pain with measures of victim, assault situation, and postassault attribution in a sample of sexual assault victims disclosing to the Western Danish Sexual Assault Center. Two to five years postassault, 45% fulfilled the diagnostic criteria for PTSD, and 33% and 38% had experienced pelvic or back pain. Completed intercourse was a predictor for PTSD development, and unemployment was related to pelvic pain. PTSD itself was associated with pelvic and back pain.

The high prevalence of PTSD in this study is very similar to the results obtained by Rothbaum and colleagues (1992), who examined a sample from a rape crisis center and with of similar size, but obtained a somewhat higher response rate (67%). Ullman et al. (2005) reported an even higher prevalence but in a convenient study with a very high response rate (90%). Our findings suggest the persistence of PTSD several years after the index trauma and no differences during our 2 to 5 year span were seen. This is in agreement with Kessler and colleagues (1995), who in a population study showed remission of symptoms with a median time of 3 years, and an expectancy of 35% of victims once diagnosed with PTSD failing to

remit. Furthermore, the design of the present study with exact knowledge of assault onset is a more powerful indicator of the chronicity of the victim's stress level, provided that the sexual assault a priori is the releasing trauma. Additionally, one should be aware of the considerable number of victims belonging to a subclinical group.

The self-reported pelvic and back pain measured in the present study should be considered as an attempt of approaching the somatoform symptoms chronic pelvic pain and chronic back pain (Sack et al., 2007). Acknowledging the lack of reliability of the measurement, the findings of pelvic and back pain after a significant trauma are, however, consistent with past research (Lampe et al., 2000; Manchikanti et al., 2002), and could be interpreted as psychosomatic symptoms needing specific attention.

Examination on PTSD predicting pelvic or back pain showed 39% of the victims having PTSD and at least one subjective pain (or 86% of victims with PTSD revealed pain), and demonstrates that PTSD was strongly associated with pain supporting our hypothesis and being in concordance with others (Elklit, 2000; Zoellner, Goodwin, & Foa, 2000; Sharp, 2004; Poleshuck et al., 2005; Campbell, Greeson, Bybee, & Raja, 2008; Clapp, Beck, Palyo, & Grant, 2008). We argue that pelvic or back pain is a possible independent conditioned stimulus of PTSD, the pain being a reminder of the sexual assault and capable of maintaining PTSD.

Identifying predictors of PTSD and pelvic or back pain may permit early intervention with victims at greatest risk of developing postassault psychopathology. That completed intercourse should increase the likelihood of PTSD has previously been stated (Kilpatrick et al., 1989). Nevertheless, forensic examination as independent variable is thought to result in confounding with completed intercourse when controlled by regression. An interaction term explainable by victims exposed to completed intercourse have more believe in the justification and necessity of police involvement and subsequent an examination. No effect

measure modification could be revealed, however, but the PTSD risk should be interpreted carefully. It is remarkable that neither the degree of coercion nor injuries sustained seem to be of special importance because several studies are ambiguous on that point (Resnick et al., 1993; Bownes et al., 1991; Acierno et al., 1999; Stein et al., 2000). Examination of correlates to pelvic and back pain shows that unemployment is compatible with our diathesis of vulnerability in concordance with others (Morrell, Taylor, Quine, Kerr, & Western, 1994). We could not replicate the findings of Hilden et al. (2004) and Campbell and colleagues (2006) regarding pain and association with injury.

It is not entirely clear why the legal outcome in the cases notified to the police did not affect posttraumatic outcome; however, the findings are consistent with the only other study to date (Frazier & Haney, 1996). We argued that acquittal or charges dropped by the defendant would cause posttraumatic symptoms. Apparently, the legal outcome is not decided until after a period of inquiry, a period preceding the chronicity of symptoms possibly obtained by the assault.

This study has a number of limitations susceptible to biases. Victim's recollection of postassault aftermath is liable to recall bias due to lack of memory and interpretation. This may underestimate the prevalence of pelvic and back pain and lower the association with PTSD, sociodemographics, and assault determinants. Another possibility is recall bias due to victim's normative expectations of some kind of symptom caused by the assault. This may overestimate the prevalence of pain and increase the association with PTSD, sociodemographics, and assault determinants. Unfortunately, it is not known whether PTSD or pain preceded or followed the assault because mental and physical states at the initial referral could not be judged without influence of the present incident. Further, no information on or control of prior health symptoms was considered. This should be acknowledged as an information bias - together with the use of non-validated pain questions - contributing to

decrease associations with pain. The victims were sampled from a distinct subpopulation of sexual assault victims, and whether generalization is possible to any victim of sexual assault is unclear. The response rate is modest, which is no surprise keeping in mind the vulnerability of the group in focus. However, we find good internal validity, because no significant differences between respondents and nonrespondents occurred. Thus, no selection bias affecting the outcome associations is expected to have occurred. In support, it has been argued that the women who came forward and participated in interviews or questionnaires were women more able to cope (Ullman & Filipas, 2001), and nonparticipants in questionnaires have been demonstrated to be mentally more affected than participants (Elklit & Brink, 2003; Holen, 1990; Weisaeth, 1989). With regard to the specific subsample, this may in fact lead to an underestimation of prevalence of PTSD, pelvic pain, and back pain.

We used mainly forensic information, but other factors, such as preceding depression or PTSD from other trauma, coping strategies, or social reactions from formal as well as informal caregivers, could explain a greater variance in the posttraumatic psychopathology. Acknowledging the limitations of this study, the severe and prolonged health related problems in victims of sexual assault are underlined, and the notion that mental stress is transmittable to pain sensations is supported. It is known that victims suffering from PTSD and somatoform symptoms use community service resources like medical consultations and sick leave (Barsky, Orav, & Bates, 2005). Together with the prolonged health problems, and the findings that not all victims attending the WeDSAC accept the offer of psychological treatment, and the non-significant effect when they do, seem to call for further follow-up monitoring and intervention.

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## Tables

Table 1

*The distribution and prevalence of PTSD, pelvic pain, and back pain 2-5 years after referral to a sexual assault center*

Criteria	Respondents fulfilling requirements	
	Number	%
Re-experiencing (n=85)	63	74
Avoidance (n=85)	47	55
Arousal (n=87)	52	70
No. of PTSD symptom clusters		
0	15	19
1	10	12
2 (subclinical PTSD)	19	24
3 (full PTSD)	36	45
Total	80	100
Pelvic pain	29	33
Back pain	33	38
PTSD/pain in combination		
No PTSD/no pain	32	40
PTSD/no pain	5	6
No PTSD/Either pain	12	15
PTSD and either pain	31	39
Total	80	100



Table 2

*Distribution of victim sociodemographics, assault characteristics, and forensic medical findings collected right after the assault by postassault after-effects collected after 2-5 years follow-up*

Predictors	Total* N	PTSD			Pelvic pain			Back pain		
		No N	Yes N	<i>p</i> -value	No N	Yes N	<i>p</i> -value	No N	Yes N	<i>p</i> -value
Unemployment	17	4	9	0.10	5	10	0.001	8	7	0.64
Employment	59	30	23		44	13		33	22	
Strange assailant	24	14	8	0.28	15	8	0.90	15	8	0.70
Known	67	28	28		42	21		37	24	
No coercion/threats	20	7	9	0.56	13	7	0.93	11	9	0.58
Physical coercion	49	23	21		30	17		28	17	
Completed	51	17	27	0.005	29	20	0.20	28	20	0.53
Attempt	33	21	8		22	8		19	10	
Alcohol victim	38	17	15	0.81	24	12	0.85	23	12	0.63
No	31	14	14		20	11		18	12	
Genital lesion	14	8	5	0.28	10	4	0.53	8	5	0.90
No	55	21	26		33	20		31	21	
Bodily lesions	49	21	22	0.86	30	18	0.77	28	19	0.42
No	16	6	7		10	5		10	4	
Forensic exam	69	29	31	0.04	43	24	0.31	39	26	0.59
No	24	15	5		16	5		14	7	
Psychologist	65	30	25	0.90	43	18	0.30	39	21	0.33
No	28	14	11		16	11		14	12	
Police filing	63	30	27	0.50	41	21	0.78	34	26	0.15
No	30	14	9		18	8		19	7	
Conviction**	11	5	5	0.57	7	4	0.44	5	5	0.47
No	32	15	13		23	9		18	13	
Back pain	33	-	-	-	16	17	0.003	-	-	-
No	53	-	-		42	11		-	-	
Pelvic pain	29	-	-	-	-	-	-	11	17	0.003
No	59	-	-		-	-		42	16	
PTSD (current)	36	-	-	-	15	21	<0.001	13	23	<0.001
No	44	-	-		37	7		34	8	

\*N=93 but n=69 for lesions, n=43 for conviction, n=88 for pelvic pain, n=86 for back pain, n=80 for PTSD \*\* Fisher's exact test

Table 3

*Correlations among predictor variables*

	1	2	3	4	5	6
1. Age						
2. Employment	0.26*					
3. Completed assault	0.14	0.15				
4. Forensic exam	0.23*	0.02	0.44*			
5. Pelvic pain	0.12	0.21	0.14	0.11		
6. Back pain	-0.06	0.06	0.07	0.06	0.32*	
7. PTSD	0.03	0.21	0.33*	0.23*	0.44*	0.46*

*Note.* PTSD=Posttraumatic stress disorder. Age: 0=12-17, 1=

18-24, 2=25-; Employment: 0=*employed*, 1=*unemployed*;

Completed assault: 0=*attempted penetration*, 1=*completed*

*penetration*; Forensic examination: 0=no, 1=yes; Pelvic pain:

0=no, 1=yes; Back pain: 0=no, 1=yes, PTSD: 0=no, 1=yes.

\* $p < 0.05$ .

Table 4

*Multivariate logistic regression analyses*

*showing the association (odds ratio – OR) between predicting variables and PTSD, pelvic pain, and back pain*

Predictors	Crude		Adjusted	
	OR	95% CI	OR	95% CI
Outcome: PTSD (n=73)				
Age 12-17	1		1	
18-24	1.1	0.3-3.3	0.6	0.1-3.2
25-56	1.2	0.4-3.5	0.6	0.1-3.1
Attempt	1		1	
Completed	4.2	1.5-11.3	4.6	1.1-19.8
Forensic exam No	1		1	
Yes	3.2	1.1-9.6	1.9	0.4-8.6

Note: model  $\chi^2=9.3$ ,  $df=4$ ,  $p<.05$

Predictors	Crude		Adjusted	
	OR	95% CI	OR	95% CI
Outcome: Pelvic pain (n=64)				
Age 12-17	1		1	
18-24	1.2	0.4-3.9	1.4	0.2-8.1
25-56	1.9	0.6-5.8	1.4	0.3-7.4
Employment	1		1	
Unemployment	6.8	2.0-22.5	10.8	2.1-56.4
Back pain	4.1	1.6-10.4	3.0	0.7-12.8
PTSD	7.4	2.6-20.6	4.0	1.1-16.5

Note: model  $\chi^2=23.0$ ,  $df=5$ ,  $p<.001$

Predictors	Crude		Adjusted	
	OR	95% CI	OR	95% CI
Outcome: Back pain (n=78)				
Age 12-17	1		1	
18-24	0.3	0.1-0.9	0.2	0.1-0.8
25-56	0.7	0.2-1.9	0.5	0.1-1.7
Pelvic pain	4.1	1.6-10.4	2.0	0.6-6.5
PTSD	7.5	2.7-20.7	7.0	2.1-22.5

Note: model  $\chi^2=23.0$ ,  $df=4$ ,  $p<.001$

# APPENDIX



# **Appendix A**

**The Danish penal code  
(in Danish)**

## **Bekendtgørelse af straffeloven**

LBK nr 1260 af 23/10/2007 Gældende

### **24. kapitel**

#### *Forbrydelser mod kønssædeligheden*

§ 216. Den, der tiltvinger sig samleje ved vold eller trussel om vold, straffes for voldtægt med fængsel indtil 8 år. Med vold sidestilles hensættelse i en tilstand, i hvilken den pågældende er ude af stand til at modsætte sig handlingen.

Stk. 2. Straffen kan stige til fængsel i 12 år, hvis voldtægten har haft en særlig farlig karakter eller der i øvrigt foreligger særligt skærpende omstændigheder.

§ 217. Den, som skaffer sig samleje ved anden ulovlig tvang, jf. § 260, end vold eller trussel om vold, straffes med fængsel indtil 4 år.

§ 218. Den, der ved udnyttelse af en persons sindssygdom eller mentale retardering skaffer sig samleje uden for ægteskab med den pågældende, straffes med fængsel indtil 4 år.

Stk. 2. Den, der skaffer sig samleje uden for ægteskab med en person, der befinder sig i en tilstand, i hvilken den pågældende er ude af stand til at modsætte sig handlingen, straffes med fængsel indtil 4 år, medmindre forholdet er omfattet af § 216.

§ 219. Den, der er ansat eller tilsynsførende ved fængsel, forsorgshjem, børne- eller ungdomshjem, hospital for sindslidende, institution for personer med vidtgående psykiske handicap eller lignende institution, og som har samleje med nogen, der er optaget i institutionen, straffes med fængsel indtil 4 år.

§ 220. Den, som ved groft misbrug af en persons tjenstlige eller økonomiske afhængighed skaffer sig samleje uden for ægteskab med den pågældende, straffes med fængsel indtil 1 år eller, såfremt forholdet er begået over for en person under 21 år, med fængsel indtil 3 år.

§ 221. Med fængsel indtil 6 år straffes den, der tilsniger sig samleje med en person, der vildfarende anser samlejet som ægteskabeligt eller forveksler gerningsmanden med en anden.

§ 222. Den, som har samleje med et barn under 15 år, straffes med fængsel indtil 8 år.

Stk. 2. Har barnet været under 12 år, eller har gerningsmanden forskaffet sig samlejet ved tvang eller fremsættelse af trusler, kan straffen stige til fængsel indtil 12 år.

§ 223. Den, som har samleje med en person under 18 år, der er den skyldiges adoptivbarn, stedbarn eller plejebarn eller er betroet den pågældende til undervisning eller opdragelse, straffes med fængsel indtil 4 år.

Stk. 2. Med samme straf anses den, som under groft misbrug af en på alder og erfaring beroende overlegenhed forfører en person under 18 år til samleje.

§ 223 a. Den, der som kunde mod betaling eller løfte om betaling har samleje med en person under 18 år, straffes med bøde eller fængsel indtil 2 år.

§ 224. Bestemmelserne i §§ 216-223 a finder tilsvarende anvendelse med hensyn til anden kønslig omgængelse end samleje.

§ 225. Bestemmelserne i §§ 216-220 og 222- 223 a finder tilsvarende anvendelse med hensyn til kønslig omgængelse med en person af samme køn.

§ 226. Har i de tilfælde, hvor efter foranstående bestemmelser gerningens strafbarhed afhænger af den krænkede persons fra det normale afvigende åndelige eller legemlige tilstand eller af personens alder, gerningsmanden handlet uden kendskab til pågældendes tilstand eller alder, og handlingen af denne grund ikke kan tilregnes ham som forsætlig, bliver, hvis han dog har handlet uagtsomt, en forholdsmæssig mindre straf at anvende.

§ 227. Straf efter §§ 216-226 kan nedsættes eller bortfalde, når de personer, mellem hvilke kønslig omgængelse har fundet sted, er indtrådt i ægteskab med hinanden eller har ladet deres partnerskab registrere.

§ 228. Den, der

1) forleder nogen til at søge fortjeneste ved kønslig usædelighed med andre,

2) for vindings skyld forleder nogen til kønslig usædelighed med andre eller afholder nogen, der driver erhverv ved kønslig usædelighed, fra at opgive det, eller

3) holder bordel,

straffes for rufferi med fængsel indtil 4 år.

Stk. 2. På samme måde straffes den, der tilskynder eller bistår en person under 21 år til at søge erhverv ved kønslig usædelighed, samt den, der medvirker til en persons befordring ud af riget, for at denne i udlandet skal drive erhverv ved kønslig usædelighed eller benyttes til sådan usædelighed, når den befordrede person er under 21 år eller uvidende om formålet.

§ 229. Den, der fremmer kønslig usædelighed ved for vindings skyld eller i oftere gentagne tilfælde at optræde som mellemmand, eller som udnytter en andens erhverv ved kønslig usædelighed, straffes med fængsel indtil 3 år eller under formildende omstændigheder med bøde.

Stk. 2. Den, der udlejer værelse i hotel eller gæstgiveri til benyttelse til erhvervsmæssig utugt, straffes med fængsel indtil 1 år eller under formildende omstændigheder med bøde.

§ 230. Den, der optager utugtige fotografier, film eller lignende af en person under 18 år med forsæt til at sælge eller på anden måde at udbrede materialet, straffes med bøde eller fængsel



indtil 2 år eller under særligt skærpende omstændigheder med fængsel indtil 6 år. Som særligt skærpende omstændigheder anses navnlig tilfælde, hvor barnets liv udsættes for fare, hvor der anvendes grov vold, hvor der forvoldes barnet alvorlig skade, eller hvor der er tale om optagelser af mere systematisk eller organiseret karakter. § 226 finder tilsvarende anvendelse.

§ 231. Har den, som skal dømmes efter §§ 228 eller 229, tidligere været dømt for nogen i disse bestemmelser omhandlet forbrydelse, eller har han for en berigelsesforbrydelse været dømt til fængsel, kan straffen forhøjes med indtil det halve.

§ 232. Den, som ved uterligt forhold krænker blufærdigheden eller giver offentlig forargelse, straffes med bøde eller fængsel indtil 4 år.

§ 233. Den, som opfordrer eller indbyder til utugt eller stiller usædelig levevis til skue på en måde, der er egnet til at forulempe andre eller vække offentlig forargelse, straffes med bøde eller fængsel indtil 1 år.

§ 234. Den, som sælger utugtige billeder eller genstande til en person under 16 år, straffes med bøde.

§ 235. Den, som udbreder utugtige fotografier eller film, andre utugtige visuelle gengivelser eller lignende af personer under 18 år, straffes med bøde eller fængsel indtil 2 år eller under særligt skærpende omstændigheder med fængsel indtil 6 år. Som særligt skærpende omstændigheder anses navnlig tilfælde, hvor barnets liv udsættes for fare, hvor der anvendes grov vold, hvor der forvoldes barnet alvorlig skade, eller hvor der er tale om udbredelse af mere systematisk eller organiseret karakter.

Stk. 2. Den, som besidder eller mod vederlag gør sig bekendt med utugtige fotografier eller film, andre utugtige visuelle gengivelser eller lignende af personer under 18 år, straffes med bøde eller fængsel indtil 1 år.

Stk. 3. Bestemmelsen i stk. 2 omfatter ikke besiddelse af utugtige billeder af en person, der er fyldt 15 år, hvis den pågældende har givet sit samtykke til besiddelsen.

§ 236. Når nogen dømmes efter §§ 216, 217, 218, stk. 1, 222 eller 223, stk. 2, eller efter §§ 224, 225 eller 226, jf. en af fornævnte bestemmelser, eller efter § 232, kan der ved dommen gives den pågældende pålæg om ikke at indfinde sig i offentlige parker eller anlæg, på fælledele, ved skoler og legepladser, ved opdragelseshjem, ved sindssygehospitaller og institutioner for personer med vidtgående psykiske handicap, i bestemt angivne skove og på bestemt angivne badeanstalter og strandbredder.

Stk. 2. Der vil derhos ved dommen kunne gives personer, der dømmes efter de i stk. 1 nævnte paragraffer eller efter §§ 228 og 229, pålæg om, at de ikke må lade børn under 18 år tage ophold i deres bolig eller uden politiets tilladelse selv tage ophold hos personer, hos hvem der opholder sig børn under nævnte alder. Pålægget gælder dog ikke med hensyn til børn, over for hvilke den domfældte har forsørgelsespligt.

Stk. 3. Når der er forløbet 3 år efter straffens udståelse, kan den dømte forlange spørgsmålet om ophævelse af et pålæg efter stk. 1 eller 2 forelagt retten. Begæringen fremsættes over for

anklagemyndigheden, der snarest muligt indbringer spørgsmålet for retten. § 59, stk. 2, finder tilsvarende anvendelse. Afgørelsen træffes ved kendelse. Tages begæringen ikke til følge, kan den dømte ikke fremsætte ny begæring, før der er forløbet 3 år fra kendelsens afsigelse. Når særlige omstændigheder taler derfor, kan justitsministeren tillade, at indbringelse for retten sker før udløbet af denne frist.

Stk. 4. Overtrædelse af de i henhold til stk. 1 og 2 meddelte pålæg straffes med fængsel indtil 4 måneder.



# **Appendix B**

**Victim and assault characteristics,  
forensic findings and legal outcomes  
outlined in tables**

Variables/Danish	Helweg <sup>1</sup>	Worm <sup>2</sup>	Eskildsen <sup>3</sup>	Charles <sup>4</sup>	Rohde <sup>5</sup>	Schei <sup>6</sup>	Hilden <sup>7</sup>
<b>Year of data</b>	1975+1980	1992-1995	1993	1999-2000	2000-2001	2003	2001-2003
<b>Place</b>	Copenhagen	Copenhagen	Aarhus	Aarhus	Aarhus	Copenhagen	Copenhagen
<b>Sample</b>	Pol. + exam.	Pol. + exam.	Pol. + exam.	Pol. or exam.	Pol. or exam.	Exam. +/- pol.	Exam +/- pol. Penetration
<b>Age range</b>	14-50+	15-80	15-48	13-81	13-85	?	>12
<b>Number</b>	74 (51) (m/f)	178 (m/f)	30 (f)	58 (f)	87 (f)	156 (m/f)	249 (f)
<b>Males</b>		0.02%	-	-	-	0.01%	-
<b>Mean age</b>		25 (median)	Median 25		28	-	
<b>Crimescene priv</b>	71%			48%		50%	60%
<b>Relationship</b>	12%		16%	13%	16%	15%	20%
Partner							
Acquaintance	14%		10%	Incl. contact	Incl. contact	23%	28%
Contact	39%		29%	47%	60%	21%	26%
Stranger	29%	40%	45%	40%	23%	25%	26%
<b>Penile penetrate</b>		78%	77%		57%	58%	85%
<b>Violence used</b>		57%				56%	80%
Severe		7%				31%	
<b>Lesions</b>		11%	16%	13%	11%	19%	32%
Genital		incl. ex-genital					
Extra-genital	69%		74%	43%	58%	60%	61%
<b>Delay exam&lt;24h</b>	97%			63%		62%	78%
<b>Filing</b>	-	-	-			60%	77%
<b>Alcohol</b>		46%	51%				67%
<b>Work employ</b>	59%	61%					67%
<b>Dwelling alone</b>		65%					
<b>Sperm found</b>	33%		52%				
<b>Incidence</b>	10 (all ages m/f)						
<b>Legal outcome</b>							
Charges							
Case closed	24%		10%				
Baseless	12%		10%				
Charge dropped	35%		51%				
Acquittal	2%		10%				
Convicted	24%		19%				
<b>Focus</b>	No association between forensic variables and conviction	Penile penetration if drunk alcohol and known offender	Lesions associated to conviction; sperm is not		Penetration, lesions, sperm; no association to filing and conviction	Known offender associated to filing	Genital lesions more often if anal and virgin
<b>Main findings</b>							

Variables/Nordic	Penttilä <sup>8</sup>	Bang <sup>9,10</sup>	Schei <sup>11</sup>	Nesvold <sup>12</sup>	Haugen <sup>13</sup>	Mejlvang <sup>14</sup>
<b>Year of data</b>	1978-84	1987	1989-1992	1996 (1994 Den)	2000-2003	2002
<b>Place</b>	Helsinki	Oslo	Trondheim	Nordic Countries	Trondheim	Greenland
<b>Sample</b>	Pol. + exam.	Exam. +/- pol.	Exam. +/- pol.	Exam. +/- pol.	Exam. +/- pol.	Police
<b>Age range</b>		14-89	8-84	12-80	5-59 yr	>12
<b>Number</b>	249 (f)	168 (m/f)	141 (m/f)	380 (m/f)	162 (f)	82 (f)
<b>Males</b>	-	0.02%	0.01%	6%	-	-
<b>Mean age</b>		27 (median)	-	24-28	24	
<b>Crimescene priva</b>	44%	57%	57%	37-57%	64%	84%
<b>Relationship Partner</b>	11		18%		11%	
<b>Acquaintance</b>	10				46%	35%
<b>Contact</b>				Incl stranger	23%	23%
<b>Stranger</b>	75%	69%		57-77%	21%	8%
<b>Penile penetrate</b>	95%	81%	78%	64-90%	91%	85%
<b>Violence used</b>	80%		53%	49-81%	75%	20%
<b>Severe violence</b>	Min 28%		24%		12%	
<b>Lesions Genital</b>	?		13%	12-35%	24%	
<b>Extra-genital</b>	90%		35%	50-65%	58%	
<b>Delay exam &lt; 24h</b>			62%	35-94%		
<b>Filing police</b>	-	73%	77%		59%	-
<b>Alcohol victim</b>	64%		40%	50-70%	71%	71%
<b>Work employ</b>	57%	76%			88%	
<b>Dwelling alone</b>					59% + at parents	
<b>Sperm found</b>			16%			30%
<b>Incidence</b>	2.7	37 (all ages m/f)		12-58 (>12yrs f)		
<b>Legal outcome Charges</b>	50%					
<b>Case closed</b>						
<b>Baseless</b>						
<b>Charge dropped</b>	32%					
<b>Acquittal</b>						
<b>Convicted</b>	36%		29%			
<b>Focus Main findings</b>	Lesions associated to imprisonment		All variables in-significant for filing. Severe violence significant for conviction	Differences between the centres. Fewer victims at forensic institutes	Victims-offender relationship	Description of Greenland characteristics

**Canada and USA with emphasis on legal outcome**

<b>Variables/study</b>	<b>McGregor<sup>15</sup></b>	<b>McGregor<sup>16</sup></b>	<b>Scott<sup>17</sup></b>	<b>Rambow<sup>18</sup></b>	<b>Spears<sup>19</sup></b>	<b>Gray-Eurom<sup>20</sup></b>
<b>Year of data</b>	1992	1993-1997	1996	1983	1989	1993-1995
<b>Place</b>	Vancouver	Vancouver	Canada	Minneapolis	Detroit	Florida
<b>Sample</b>	Pol. + exam.	Pol. + exam.	Police	Pol. + exam. <36h	Pol. And arrest of suspect	Pol + exam Arrest of suspect
<b>Age range</b>	14-68	?	>13	>16	all	12-77
<b>Number</b>	95 (m/f)	462 (m/f)	108 (f)	182 (f)	321	355 (m/f)
<b>Males</b>	4%	4%	-	-	-	3%
<b>Mean age</b>	28	27	24	-	-	Median 24
<b>Crimescene priva</b>			56%			
<b>Relationship</b>			15%			
<b>Partner</b>						
<b>Acquaintance</b>			41%			
<b>Contact</b>			Incl.			
<b>Stranger</b>	67%	57%	44%		15%	35%
<b>Penile penetrate</b>	91%	76%	54%			
<b>Violence used</b>						
<b>Severe violence</b>	17% (min.)		Min 8%		18%	28% (min)
<b>Lesions</b>	32%	42%	Incl ex genital	10%	Incl	35%
<b>Genital</b>						colposcopy
<b>Extra-genital</b>	89%		33%	50%	25%	45%

<b>Delay exam &lt; 24h</b>																						
<b>Filing police</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Alcohol victim</b>				44%																		
<b>Work employ</b>																						
<b>Dwelling alone</b>																						
<b>Sperm found</b>	13%	38%																			31%	
<b>Incidence</b>																						
<b>Legal outcome Charges</b>	33%	33%	37%																		33%	
<b>Case closed</b>	29%	63% together																			-	
<b>Baseless</b>	14% (victim refuse further)	with baseless																			24%	
<b>Charge dropped</b>	12%	4%																			43%	
<b>Acquittal</b>		21%																			0.01	
<b>Convicted</b>	12% (=35% of charged)	11% (=30% of charged)																			23% (=33% of charged)	
<b>OR/p&lt; focus</b>	Moderate/severe lesions associated to charges (multivariate)	Lesions, known offender, exam. Associated for charges. Lesion for conviction (multivariate)	Old age, partner/stranger, resistant, associated to lesions. Young age, alcohol, lesion, associated to completeness. Attempt associated to charges. Resistant lowers complete, hence less post-traumatic reaction																			Age <18, lesion, use of weapons associated to conviction (multivariate)



**USA and UK with emphasis on legal outcome**

Variables	Tintinalli <sup>21</sup>	Frazier <sup>22</sup>	Spohn <sup>23</sup>	Wiley <sup>24</sup>	Evrard <sup>25</sup>	Bowyer <sup>26</sup>
<b>Year of data</b>	1980	1991	1997	1997-1999	1976-77	?
<b>Place</b>	Detroit	Midwest USA	Miami	Seattle	Rhode Island	Sunderland UK
<b>Sample</b>	Exam.	Police	Pol. and arrest of suspect	Prosecuted cases	Exam	Charges + exam.
<b>Age range</b>	13-78	16-86	>12	>15	2-61	16-48
<b>Number</b>	372 (f)	569 (f)	140(f/m)	396 (f)	126 (m/f)	83 (f)
<b>Males</b>	-	-	?	-	0.8%	-
<b>Mean age</b>	25	28	29		15 (median)	25
<b>Crimescene priva</b>			69%		39%	
<b>Relationship Partner</b>	6%		35%		31% (+children!)	
<b>Acquaintance</b>	25%		20% (family)			
<b>Contact</b>			32%		26%	
<b>Stranger</b>	54%		Incl. stranger		Incl. stranger	
<b>Penile penetrate</b>			13%		37%	
<b>Violence used</b>			-		87%	
<b>Severe violence</b>			14%		42%	
<b>Lesions Genital</b>	19%		Incl. ex-genital		12%	27%
<b>Extra-genital</b>	32% (max.)		29%		0	
<b>Delay exam &lt; 24h</b>	79%				51%	82%
<b>Filing police</b>	19%		-		73%	
<b>Alcohol victim</b>					60%	-
<b>Work employ</b>					29%	
<b>Dwelling alone</b>						
<b>Sperm found</b>	31%				32%	
<b>Incidence</b>						
<b>Legal outcome Charges</b>						-
<b>Case closed</b>	3%					

Baseless	1%			41%				
Charge dropped	18%			11½%				
Acquittal	9%			1½%				
Convicted	69%	12% (76% of charged)		46%			85%	
<b>OR/p&lt;</b> focus	Lesion and sperm no association to convictions	Lesions, use of threats, stranger, associated to charges. No relation to PTSD		Prosecutors rejection of case. Young age, weapons, known offender, lesions related to prosecution	Charging	Examination protocol is a must	Lesions must be important in court	

**USA, Europe, and Asia with emphasis on victim and assault characteristics and medico-legal evidence**

Variables/USA	Brecklin <sup>27</sup>	Koss <sup>28</sup>	Ullman <sup>29</sup>	Slaughter <sup>30</sup>	Slaughter <sup>31</sup>	Ullman <sup>32</sup>
<b>Year of data</b>	1984-1985	?	1985?	1985-90	1985-93	?
<b>Place</b>	USA	USA	L.A. USA	San Luis USA	San Luis USA	L.A. USA
<b>Sample</b>	Survey - mail College students	Survey College students	Survey+interview Population	Exam < 48h Penetration	Exam	Survey Mail
<b>Age range</b>	16-77		>16	13-85	11-85	16-48
<b>Number</b>	3187 (f)	468 (f)	240 (f)	131 (f)	311 (f)	155 (f)
<b>Males</b>	-	-	-	-	-	-
<b>Mean age</b>	22	18	23	25	24	20
<b>Crimescene priva</b>			-			
<b>Relationship</b>	49%	41% incl. family	29% 3% family			
<b>Partner</b>						
<b>Acquaintance</b>	Incl. contact	26%	46%			
<b>Contact</b>	44%	22%				
<b>Stranger</b>	6%!	11%	22%			13%
<b>Penile penetrate</b>	29%!		48%	-	80%	74%
<b>Violence used</b>	38%		70-83%			
<b>Severe violence</b>		3-15%	5-24%			
<b>Lesions</b>			10-29%	87% colposcopy	68% colposcopy	
<b>Genital</b>						
<b>Extra-genital</b>				-	-	44%
<b>Delay exam &lt; 24h</b>				89%		
<b>Filing police</b>		2-21%				2%!
<b>Alcohol victim</b>	42%					
<b>Work employ</b>						71%
<b>Dwelling alone</b>						
<b>Sperm found</b>						
<b>Incidence</b>		15% lifetime prevalence	15% lifetime prevalence			
<b>OR/p&lt; focus</b>	Self-defence training causes more attempts than completed assaults	Victim-offender relationship. No differences in violence or posttraumas	Victim-offender relationship, More violence when partner or stranger. Violence and posttraumas. If only an attempt less posttraumas	Colposcopy	11% with genital lesions after consensual sex. Significant relation delay/genital lesion	Social reactions and recovery Coping.

Variables/USA	Acierno <sup>33</sup>	Resnick <sup>34</sup>	Magid <sup>35</sup>	Ullman <sup>36</sup>	Riggs <sup>37</sup>	Sommers <sup>38</sup>
<b>Year of data</b>	1989-1991	1989-1991	1991	?	1992-1995	1998-2002
<b>Place</b>	USA	USA	USA	Chicago	Denver	USA
<b>Sample</b>	Pop. survey	Pop. survey	Pol. + exam. A&E	Survey	Pol + exam	Exam < 72h
<b>Age range</b>	>18	>18	14+	?	1-85	
<b>Number</b>	4006 (f)	214 (f)	155 (f)	323 (f)	1076	120 (f).
<b>Males</b>	-	-	-	-	4%	-
<b>Mean age</b>	36		24	20	25	-
<b>Crimescene priva</b>			62%		42%	
<b>Relationship Partner</b>						
<b>Acquaintance</b>						
<b>Contact</b>					24%	
<b>Stranger</b>		27%	43%	24%	39%	
<b>Penile penetrate</b>			94%	86%	83% (min.)	
<b>Violence used</b>			81%		80%	
<b>Severe violence</b>					27% (min)	
<b>Lesions Genital</b>			12%		53%	45%
<b>Extra-genital</b>			64%		67%	51%
<b>Delay exam &lt; 24h</b>		66% (<48h)		33%		
<b>Filing police</b>		20%	-		-	
<b>Alcohol victim</b>						
<b>Work employ</b>						
<b>Dwelling alone</b>						
<b>Sperm found</b>					48%	
<b>Incidence</b>	15% lifetime prevalence	7% lifetime prevalence	185 (f>14)			
<b>Focus Main findings</b>	Risk factor for assault is young age, ex-victim, present PTSD	Determinants for examination	More violence if known offender	Social reactions and PTSD	Private place for assault and known offender. Un-known more violence	Lesions

<b>Variables/Europe</b>	<b>Lacey<sup>39</sup></b>	<b>Alempijevic<sup>40</sup></b>	<b>Grossin<sup>41</sup></b>	<b>Kerr<sup>42</sup></b>	<b>Santos<sup>43</sup></b>	<b>Thompson<sup>44</sup></b>
<b>Year of data</b>	1989	1995-1999	1998	2000-2001	2002-2003	2002-2004
<b>Place</b>	Manchester	Belgrade	Paris	London	Lissabon	Edinburgh
<b>Sample</b>	Exam. +/- police STD-screen	Police Court cases	Police + exam. Exam. < 72h	Exam. +/- police	Exam. +/- police Exam. in A&E	Exam.
<b>Age range</b>	13-77	5-80	1½-79	11-66	0-86 yr	10-76
<b>Number</b>	90 (f)	113 (f)	161 (m/f)	676 (m/f)	352 (m/f)	212 (m/f)
<b>Males</b>	-	-		6%	8%	10%
<b>Mean age</b>	25	24	14 (median)	26	18 (53% < 14 yrs)	21
<b>Crimescene</b> priva	50%		50%			
<b>Relationship</b>				16%	Uses other definitions	
Partner						
Acquaintance				29%		
Contact				20%		
Stranger	47%		51% (incl.contact)	32%		47%
<b>Penile penetrate</b>	100		92%	88%		
<b>Violence used</b>	90%		44%	50%		20%
Severe violence						
<b>Lesions</b>						
Genital			36% + colposcopy	24%		
Extra-genital		63%	39%	39%	28%	
<b>Delay exam &lt; 24h</b>		52%			50%	
<b>Filing police</b>			-			53%
<b>Alcohol victim</b>						
<b>Work employ</b>					68%	
<b>Dwelling alone</b>						
<b>Sperm found</b>			30%		23%	
<b>Incidence</b>						
Focus	STD	Ex-gen lesion	Delay for exam.	Sexual Assault Center in London	Needs for sexual assault centres	STD
Main findings						

<b>Variables/study</b>	Ullman <sup>45</sup>	Masho <sup>46</sup>	Saltzman <sup>47</sup>	Avegno <sup>48</sup>	Logan <sup>49</sup>	Sahu <sup>50</sup>
<b>Year of data</b>	?	2002-2003	2001-2002	2000-2004	2001-2004	98-00
<b>Place</b>	Midwest	Virginia	USA	USA	Southeast USA	India
<b>Sample</b>	Survey Population	Survey Population	Exam. A&E	Exam. A&E	Exam. A&E	Pol. + exam.
<b>Age range</b>	>14		>0	6-89	14-65	
<b>Number</b>	1084 (f)	1769 (f)	3893 (f/m)	1172 (f/m)	331 (f)	92 (f)
<b>Males</b>	-	-	10%	7.4%		-
<b>Mean age</b>				27		
<b>Crimescene priva</b>					26-85%	87%
<b>Relationship</b>					16%	1%
Partner	22%	42%		2%		
	13% (family)			3% (family)		
Acquaintance	45%	22%		45%	40%	61%
Contact	Incl.	18%		5%	20%	16%
Stranger	20%	12%		45%	24%	22%
<b>Penile penetrate</b>	72%					
<b>Violence used</b>	-			72%		
Severe violence						
<b>Lesions</b>						
Genital		17% incl. ex-gen		52% incl. ex-gen	68-87%	
Extra-genital					+ colposcopy	
Delay exam < 24h					52-83%	
<b>Filing police</b>					87-97%	
Alcohol victim		12%				
Work employ				54%	30-80%	7%
Dwelling alone					35-50%	
<b>Sperm found</b>						
<b>Incidence</b>		28% lifetime prevalence	25 (all m/f)			
Focus	Victim/assailant relationship, stranger more violence + PTSD	Prevalence study. (78% victimises <18)	10% of patients in A&E are victims of sexual assaults	Old age, threats, alcohol increased physical trauma. 55% know assail.	Partner: older and private and more injuries, and less alcohol than other	Vulnerable victims

- Incidence is annual incidence rate per 100,000 individuals (different age range and gender – see table) unless stated lifetime prevalence
- m is male
- f is female

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# **Appendix C**

**Questionnaire used in substudy 3  
(Paper III) to measure  
PTSD by HTQ (page 3) and  
pelvic/back pain (page 5)**

Dato for henvendelse i centret:

Dato for udfyldning af skema:

Bor du alene? I par Hos forældre 

Andet: \_\_\_\_\_

Har din boform ændret sig siden overgrebet?

Nej Ja  Hvordan:  
\_\_\_\_\_  
\_\_\_\_\_

Hvordan er din sikkerhedsfølelse nu? (Sæt kryds):

1 2 3 4 5 6 7 Jeg er bange for, at  
der let kan ske et nyt  
overgrebJeg føler mig helt  
sikker på, at der ikke  
sker et sådant  
overgreb igen

Har du fysiske gener i dag efter overgrebet?

Nej Ja  Hvilke:  
\_\_\_\_\_  
\_\_\_\_\_

Har du haft bebrejdelser mod andre efter overgrebet?

Nej Ja  Mod hvem:  
\_\_\_\_\_  
\_\_\_\_\_Har overgrebet betydet ændringer i din familie eller vennekreds? Nej Ja  Hvilke:  
\_\_\_\_\_  
\_\_\_\_\_Har overgrebet ændret dit syn på livet i positiv eller negativ retning? Er der ting, du har tænkt mere på efter overgrebet?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(fortsæt evt. på bagsiden)

Har du lært noget nyt af overgrebet?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(fortsæt evt. på bagsiden)

Har du siden overgrebet været ude for andre større livsændringer/-begivenheder (dødsfald, sygdom, skilsmisse, flytninger, familieændringer, jobændringer eller andet?):  
\_\_\_\_\_  
\_\_\_\_\_

	Har du haft kontakt med (sæt kryds):	Fik du den hjælp du ønskede? Nej = 1, Til dels = 2, Ja = 3	Var de venlige og forstående? Nej = 1, Til dels = 2, Ja = 3
Politi			
Domstol			
Egen læge			
Gynækologisk afdeling			
Psykolog			
Arbejdsplads			
Forsikring			
Socialforvaltning			
Advokat			
Medierne			
Andre (hvem?):			

Hvordan oplever du dine omgivelser i dag? ( Sæt ét x ved hvert spørgsmål )						
1. Når du har behov for at snakke, hvor tit er der nogen, der er villig til at lytte?						
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Aldrig		Nogle gange			Altid	
2. Har du kontakt med andre i samme situation eller folk med lignende oplevelser?						
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Aldrig		Nogle gange			Altid	
3. Er du i stand til at tale om dine tanker og følelser?						
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Aldrig		Nogle gange			Altid	
4. Udviser folk sympati og støtte?						
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Aldrig		Nogle gange			Altid	
5. Er der nogen, der hjælper dig med praktiske ting?						
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Aldrig		Nogle gange			Altid	
6. Føler du dig nogle gange svigtet af folk, som du regner med vil støtte dig?						
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Aldrig		Nogle gange			Altid	
7. Alt i alt er du tilfreds med den støtte, du modtager i dag?						
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Overhovedet ikke		Nogle gange			Ja, meget	



De følgende spørgsmål drejer sig om symptomer, som folk kan have efter at have oplevet et overgreb. Vil du læse hvert enkelt spørgsmål omhyggeligt og angive, hvor meget det pågældende symptom har generet dig i den sidste måneds tid?				
(Sæt ét x ved hvert spørgsmål)	Overhovedet ikke	Sjældent	Noget af tiden	For det meste
1. Tilbagevendende tanker eller erindringer om overgrebet.				
2. Føler i glimt, at det er ligesom at overgrebet gentager sig.				
3. Gentagne mareridt.				
4. Føler mig uengageret eller isoleret fra mennesker.				
5. Ude af stand til at vise følelser.				
6. Bliver nemt forskrækket.				
7. Svært ved at koncentrere mig.				
8. Besvær med at falde i søvn/sove igennem.				
9. Følelsen af at være på vagt.				
10. Føler mig let irriteret og har let ved at blive vred.				
11. Undgår aktiviteter, som minder mig om overgrebet.				
12. Ude af stand til at huske dele af overgrebet.				
13. Mindre interesse i dagligdags aktiviteter.				
14. Føler jeg ikke har nogen fremtid.				
15. Undgår tanker eller følelser forbundet med overgrebet.				
16. Pludselige følelsesladede eller fysiske reaktioner, når jeg bliver mindet om overgrebet.				
17. Føler at mennesker ikke forstår mig.				
18. Besvær med at udføre arbejde eller daglige gøremål.				
19. Giver mig selv skylden for overgrebet.				
20. Skyldfølelse over at have klaret mig godt.				
21. Håbløshed.				
22. Føler skam pga. det overgreb, som har fundet sted.				
23. Tilbringer tid med at tænke over, hvorfor det skete for mig.				
24. Føler det som om jeg bliver sindssyg.				
25. Føler at jeg er den eneste, der har været udsat for et sådan overgreb.				
26. Føler at andre er fjendtlige mod mig.				
27. Føler at jeg ikke kan stole på nogen.				
28. Finder ud af, eller bliver fortalt af andre, at jeg har gjort noget, jeg ikke kan huske.				
29. Føler at jeg er blevet delt i to, og at den ene halvdel af mig iagttager den anden.				
30. Føler at nogen, jeg har stolet på, har forrådt mig.				
31. Føler skyld fordi jeg kunne have gjort noget/jeg ikke havde gjort nok.				

Hvor tit har du oplevet følgende den sidste måneds tid ?				
(Sæt ét x ved hvert spørgsmål)	Nej	Ja, nogle gange	Ja, ofte	Meget tit
1. Har du problemer med at falde i søvn?				
2. Sover du uroligt?				
3. Har du mareridt?				
4. Vågner du op tidligt om morgenen - og kan ikke falde i søvn igen?				
5. Har du dårlig appetit, væggtab?				
6. Føler du dig isoleret fra andre?				
7. Føler du dig ensom?				
8. Har din sexlyst været lille?				
9. Har du følt dig trist?				
10. Har du forstyrrende tanker eller billeder om overgrebet?				
11. Taber du tråden, forsvinder du i dine tanker?				
12. Har du hovedpine?				
13. Har du problemer med maven?				
14. Græder du sommetider?				
15. Føler du dig bange eller på vagt?				
16. Har du svært ved styre dit temperament?				
17. Har du svært ved at komme ud af det med andre?				
18. Føler du dig vred eller irriteret?				
19. Lider du af svimmelhed?				
20. Besvimer du?				
21. Har du ønsker om at skade dig selv fysisk?				
22. Har du ønsker om at skade andre fysisk?				
23. Har du seksuelle problemer?				
24. Er du seksuelt meget aktiv?				
25. Er du bange for mænd?				
26. Er du bange for kvinder?				
27. Vasker du dig meget? (Overdreven hygiejne).				
28. Føler du dig underlegen eller usikker?				
29. Har du selvbeprejdelser?				
30. Har du en følelse af uvirkelighed?				
31. Har du problemer med at huske?				
32. Føler du, at det nogen gange er, som om du er ude af din krop?				
33. Føler du dig anspændt?				
34. Har du problemer med at trække vejret?				
35. Føler du dig uoplagt?				

De følgende spørgsmål drejer sig om brug af læge og om symptomer, som folk kan have efter et overgreb. Sæt ét kryds ved hvert spørgsmål på nær 4. og 7. hvor der kan sættes flere.

1.	Har du siden overgrebet lidt af underlivssmerter?	Nej <input type="checkbox"/> <sub>0</sub>	Ja <input type="checkbox"/> <sub>1</sub>	(hvis nej, gå til 5.)	
<b>- hvis ja til 1.</b>		Nej	Ja, nogle gange	Ja, ofte	Ja, meget tit
2.	lider du af det endnu?	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
3.	og har du søgt læge pga. underlivssmerterne?	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
<b>- hvis ja til 3.</b>					
4.	hvilken læge har du konsulteret? (Gerne flere kryds)				
		Nej	Ja		
a	- din egen læge	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>		
b	- speciallæge i gynækologi	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>		
c	- anden læge	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>		
5.	Har du siden overgrebet lidt af smerter i ryggen?	Nej <input type="checkbox"/> <sub>0</sub>	Ja <input type="checkbox"/> <sub>1</sub>	(hvis nej, gå til 9.)	
<b>- hvis ja til 5.</b>		Nej	Ja, nogle gange	Ja, ofte	Ja, meget tit
6.	lider du af det endnu?	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
7.	og har du søgt læge pga. rygsmerterne?	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
<b>- hvis ja til 7.</b>					
8.	hvilken læge har du konsulteret? (Gerne flere kryds)				
		Nej	Ja		
a	- din egen læge	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>		
b	- speciallæge i ryg sygdomme	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>		
c	- anden læge	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>		
		Nej	Ja, nogle gange	Ja, ofte	Ja, meget tit
9.	Har du siden overgrebet fået ordineret af lægen				
a	- smertestillende medicin?	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
b	- beroligende medicin?	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>
10.	Har du været sygemeldt efter overgrebet?	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>

# **Appendix D**

**Registration of victims at the WeDSAC  
(Journal og registreringskema)**

ID: \_\_\_\_\_

# Undersøgelse af voldtægts ofre

## Journal- og registreringsskema

MODTAGELSE	
CPR:	Navn: Erhverv:
Adresse:	
Tlf (privat):	Tlf (arbejde): Tlf:
Ankomstdato:	Kl: Transportmåde til center:
Undersøgelse påbegyndt kl: Undersøgelse afsluttet kl:	
Ledsaget af	Navn:
Relation:	Adresse:

**(kopi til patient)**

Medicinordinationer

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Udfør hjemmetest  d. \_\_\_\_\_

**Henvisninger**

Psykolog	<input type="checkbox"/>	Aftalt tid	d.	kl.
Egen læge	<input type="checkbox"/>	Aftalt tid	d.	kl.
Gynækologisk Afd.	<input type="checkbox"/>	Aftalt tid	d.	kl.
Center for Voldtægts ofre	<input type="checkbox"/>	Aftalt tid	d.	kl.
Infektionsmedicinsk Afd.	<input type="checkbox"/>	Aftalt tid	d.	kl.
Andet (notér): _____	<input type="checkbox"/>	Aftalt tid	d.	kl.

**Svar på prøver**

<input type="checkbox"/>	Egen læge
<input type="checkbox"/>	Gynækologisk Afd.
<input type="checkbox"/>	Center for voldtægts ofre
<input type="checkbox"/>	Anden aftale (notér): _____

Undersøgt af: Læge: \_\_\_\_\_

Sygeplejerske: \_\_\_\_\_

Indlagt	<input type="checkbox"/>
Afd.:	_____
Årsag:	_____

Medicinordinationer

Udleveret hjemmetest	<input type="checkbox"/>	Nej	<input type="checkbox"/>	Ja
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Henvisninger				
Psykolog	<input type="checkbox"/>	Aftalt tid	d.	kl.
Egen læge	<input type="checkbox"/>	Aftalt tid	d.	kl.
Gynækologisk Afd.	<input type="checkbox"/>	Aftalt tid	d.	kl.
Center for voldtægts ofre	<input type="checkbox"/>	Aftalt tid	d.	kl.
Infektionsmedicinsk Afd.	<input type="checkbox"/>	Aftalt tid	d.	kl.
Andet (notér): _____	<input type="checkbox"/>	Aftalt tid	d.	kl.

Svar på prøver
<input type="checkbox"/> Egen læge
<input type="checkbox"/> Gynækologisk Afd.
<input type="checkbox"/> Center for voldtægts ofre
<input type="checkbox"/> Anden aftale (notér): _____

Profylaksemedicin
<input type="checkbox"/> Kontraceptiva (notér): _____

Profylaksemedicin - henvist til skadestuen mhp.:
<input type="checkbox"/> Antibiotika (notér): _____
<input type="checkbox"/> Tetanus (notér): _____
<input type="checkbox"/> Hep B vacc. (notér): _____
<input type="checkbox"/> Andet (notér): _____

**EGEN LÆGE:** \_\_\_\_\_  
(husk adresse)

**SYGEPLEJERSKE:** \_\_\_\_\_

# Registreringsskema ved undersøgelse af ofre for voldtægt

Det attesteres at modtagelse og undersøgelse samt biologisk materiale og effekter er håndteret i.h.t. forskrifterne.

Læge: \_\_\_\_\_ Underskrift \_\_\_\_\_ Dato \_\_\_\_\_  
 Sygeplejerske: \_\_\_\_\_ Underskrift \_\_\_\_\_ Dato \_\_\_\_\_

## POLITIANMELDELSE

- Ikke politianmeldt  
 Politianmeldt

Dato: \_\_\_\_\_ Klokken: \_\_\_\_\_  
 Politikreds: \_\_\_\_\_ Journalnr.: \_\_\_\_\_

## Patientsamtykke - politianmeldt

Undertegnede er gjort bekendt med, at der ved undersøgelsen bliver foretaget registrering af skader, også ved fotografering, og sikring af bevismateriale som tøj, biologisk materiale o.l. samt at undersøgende læge og sygeplejerske fritages for tavshedspligt. Samtidigt giver jeg "Center for Voldtægts ofre" min tilladelse til at indhente og videregive de helbredsoplysninger, der måtte vedrøre de anbefalede kontrolbesøg.

Århus d. \_\_\_\_\_ Dato \_\_\_\_\_

Underskrift \_\_\_\_\_

## Patientsamtykke - IKKE politianmeldt

Undertegnede er gjort bekendt med, at der ved undersøgelsen bliver foretaget registrering af skader, også ved fotografering, og sikring af bevismateriale som tøj, biologisk materiale o.l. Jeg er informeret om, at det indsendte bevismateriale opbevares indtil en eventuel politianmeldelse foreligger. Hvis der ikke er politianmeldt 3 måneder efter undersøgelsen, destrueres det opbevarede bevismateriale (bortset fra journal). Jeg samtykker til, at såfremt der politianmeldes, så udleveres bevismaterialet og kopi af denne journal til politiet, og undersøgende læge og sygeplejerske fritages for tavshedspligt. Samtidigt giver jeg "Center for Voldtægts ofre" min tilladelse til at indhente og videregive de helbredsoplysninger, der måtte vedrøre de anbefalede kontrolbesøg.

Århus d. \_\_\_\_\_ Dato \_\_\_\_\_

Underskrift \_\_\_\_\_

## ETNISKE OG SOCIALE OPLYSNINGER

B. BAGGRUNDSOPPLYSNINGER			
HVOR ER DU FØDT ?			
<input type="checkbox"/> 0 Danmark (inkl. Grønland)	<input type="checkbox"/> 1 Øvrig Skandinavien	<input type="checkbox"/> 2 Øvrig Europa	<input type="checkbox"/> 3 Mellemøsten
<input type="checkbox"/> 4 Afrika	<input type="checkbox"/> 5 Asien & Fjernøsten	<input type="checkbox"/> 6 Øvrig udland (inkl. USA & Sydamerika)	

ER DINE FORÆLDRE FØDT I DANMARK ?	
<input type="checkbox"/> 0 Ja	(Svar ja, når mindst en af forældrene er født i DK og ved adoptivforældre født i DK)
<input type="checkbox"/> 1 Nej	

BOLIGFORHOLD		
<input type="checkbox"/> 0 Bor alene	<input type="checkbox"/> 1 Bor alene med barn/børn	<input type="checkbox"/> 2 Bor sammen med partner/ægtefælle
<input type="checkbox"/> 3 Bor sammen med forældre	<input type="checkbox"/> 4 Andet (notér): _____	

Til notater:

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## S. EFFEKTER

Effekter (tøj) udleveret til <b>politiet</b>	<input type="checkbox"/> 0 Nej	<input type="checkbox"/> 1 Ja
Modtager signatur	_____	
Dato	_____	

Sporskringskassen med indhold udleveret til <b>politiet</b>	<input type="checkbox"/> 0 Nej	<input type="checkbox"/> 1 Ja
Modtager signatur	_____	
Dato	_____	

Sporskringskassen med indhold udleveret til <b>Retsmedicinsk Institut</b>	<input type="checkbox"/> 0 Nej	<input type="checkbox"/> 1 Ja
Modtager signatur	_____	
Dato	_____	

Sporskringskassen med indhold <b>destrueret</b>	<input type="checkbox"/> 0 Nej	<input type="checkbox"/> 1 Ja
signatur	_____	
Dato	_____	

## T. KOPI AF REGISTRERINGSSKEMA

Kopi af registreringsskema udleveret til <b>politiet</b>	<input type="checkbox"/> 0 Nej	<input type="checkbox"/> 1 Ja
signatur	_____	
Dato	_____	





D. ANAMNESE VEDRØRENDE SEKSUELLE HANDLING				
	Nej <sub>0</sub>	Ja <sub>1</sub>	Forsøgt <sub>2</sub>	Ved ikke <sub>3</sub>
Vaginalt samleje				
Analt samleje				
Har gerningsmanden slikket / kysset i ansigtet/på kroppen				
Hvis ja, hvor:				
Oral kopulation af gerningsmandens kønsorganer				
Oral kopulation af ofrets kønsorganer				
Penetration med fremmedlegeme				
Hvis ja, hvor:				
Berøring af ofrets kønsorganer				
Hvis ja, hvor				
Andre handlinger (beskriv):				
Kondom benyttet				
Ejakulation				
Hvis ja, hvor:				
	<input type="checkbox"/> Vaginalt	<input type="checkbox"/> Analt		
	<input type="checkbox"/> Oralt	<input type="checkbox"/> På kroppen		
	<input type="checkbox"/> På tøjet	<input type="checkbox"/> Andre steder		

E. ANAMNESE VEDRØRENDE FYSISKE SKADER OG ANVENDT VOLD	
Fysiske skader og/eller smerter beskrevet af patienten:	

Q. PRØVETAGNING I TILSLUTNING TIL LÆGEUNDERSGØRSELSEN					
	Udstrykningspræparat		Sekretprøver (2 tørre vatpinde per sted)		Bakteriologisk us. (chlamydia <sub>1</sub> , gonokokker <sub>2</sub> , svamp <sub>3</sub> , trichomonas <sub>4</sub> , andet <sub>5</sub> )
	Nej <sub>0</sub>	Ja <sub>1</sub>	Nej <sub>0</sub>	Ja <sub>1</sub>	
Mundhule					Hvilke
Vagina (introitus & fornix post)					
Anus					

Serologiske undersøgelser		
	Nej <sub>0</sub>	Ja <sub>1</sub>
HIV		
Hepatitis-B		
Syfilis		
Alkohol		
Medicin		

DNA reference		
	Nej <sub>0</sub>	Ja <sub>1</sub>
DNA - Kindskrab		

Urin		
	Nej <sub>0</sub>	Ja <sub>1</sub>
Graviditetstest		
Medicin		
Andet		

Prøver fra kroppen med tør eller fugtig vatpind		
	Nej <sub>0</sub>	Ja <sub>1</sub>
Sæd		
Blod		
Spyt		
Andet		

Materiale til sporsikring		
	Nej <sub>0</sub>	Ja <sub>1</sub>
Negleskrab		
Beklædning		Antal:
Bind/Tampon		
Andet		

Voldsmiddel benyttet ved overgrebet (flere kan afkrydses)			
1.	Slag med hånd/næve	<input type="checkbox"/>	Ingen
2.	Spark	<input type="checkbox"/>	Notér fodtøj _____
3.	Rusken	<input type="checkbox"/>	
4.	Fastholdelse/fixering	<input type="checkbox"/>	
5.	Bid	<input type="checkbox"/>	
6.	Trusler med våben	<input type="checkbox"/>	hvilke _____
7.	Trusler om vold	<input type="checkbox"/>	hvilke _____
8.	Trusler om at udøve vold mod andre end patienten	<input type="checkbox"/>	hvilke _____
9.	Andet	<input type="checkbox"/>	hvad _____

Har der været greb/strangulation om halsen?			
<input type="checkbox"/>	Nej		
<input type="checkbox"/>	Ja		
<input type="checkbox"/>	Har der været åndedrætsbesvær	<input type="checkbox"/>	Nej <input type="checkbox"/>
<input type="checkbox"/>	Har der været besvimelse	<input type="checkbox"/>	Nej <input type="checkbox"/>
<input type="checkbox"/>	Har der været sortnen for øjnene	<input type="checkbox"/>	Nej <input type="checkbox"/>
<input type="checkbox"/>	Har der været bevidstløshed	<input type="checkbox"/>	Nej <input type="checkbox"/>
<input type="checkbox"/>	Har der været ekskretafgang	<input type="checkbox"/>	Nej <input type="checkbox"/>
<input type="checkbox"/>	Angives der synkebesvær	<input type="checkbox"/>	Nej <input type="checkbox"/>
<input type="checkbox"/>	Angives der hæshed	<input type="checkbox"/>	Nej <input type="checkbox"/>

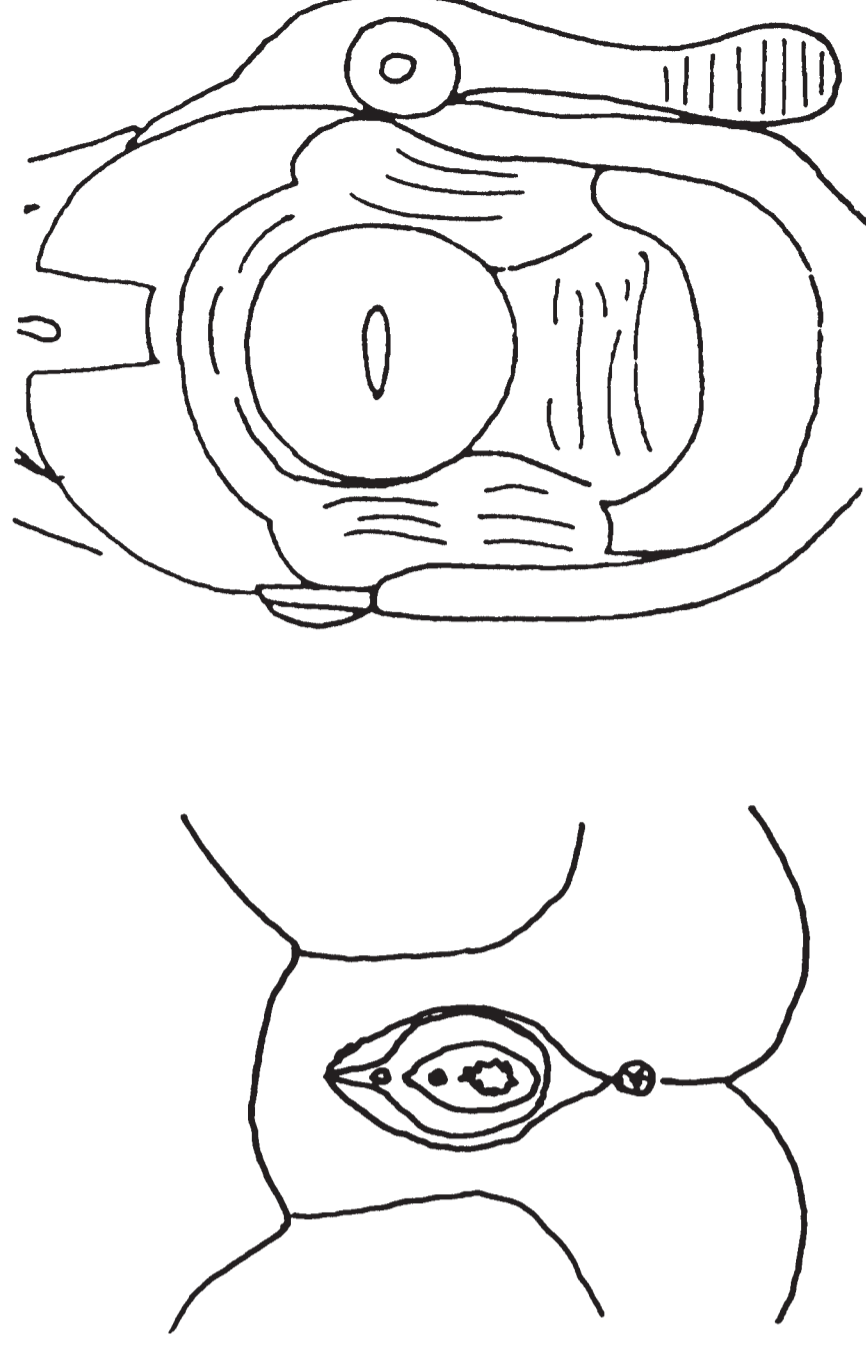
F. UNDERSØGTES OPLYSNINGER OM GERNINGSMANDEN		
		<b>Antal gerningsmænd:</b>
<input type="checkbox"/>	Kæreste/samlever/ægtefælle (incl. tidl. - sv.t. parvoldtægt)	<input type="checkbox"/> 1
<input type="checkbox"/>	Familie: (notér) _____	<input type="checkbox"/> 2
<input type="checkbox"/>	Bekendt (ikke tidl. haft seksuelle relationer - sv.t. voldtægt ml. bekendte)	<input type="checkbox"/> 3
<input type="checkbox"/>	Tilfældig bekendt (sv.t. kontaktvoldtægt)	<input type="checkbox"/> > 3
<input type="checkbox"/>	Aldrig set før (sv.t. overfaldsvoldtægt)	<input type="checkbox"/> Ved ikke
	<b>Gerningsmanden alkoholpåvirket:</b>	<b>Nationalitet af</b>
<input type="checkbox"/>	Nej	<b>Gerningsmand:</b> _____
<input type="checkbox"/>	Ja	
<input type="checkbox"/>	Ved ikke	Gerningsmandens alder: _____
	<b>Gerningsmanden medicinpåvirket:</b>	
<input type="checkbox"/>	Nej	
<input type="checkbox"/>	Ja	
<input type="checkbox"/>	Ved ikke	

G. EFTER OVERGREBET			
	Nej <sub>0</sub>	Ja <sub>1</sub>	Ved ikke <sub>3</sub>
Haft vandladning			
Haft afføring			
Tørrer/vasket genitalia			
Badet			
Fjernet eller indsat tampon/bind			
Børstet tænder			
Skiftet tøj			
Andet _____			
			Hvad: _____

H. MEDICINSK ANAMNESE			
Kronisk sygdomme	<input type="checkbox"/> <sub>0</sub>	Nej	<input type="checkbox"/> <sub>1</sub> Ja, hvilke _____
Fast medicin	<input type="checkbox"/> <sub>0</sub>	Nej	<input type="checkbox"/> <sub>1</sub> Ja, hvilken _____

Har du indtaget alkohol inden for de seneste 6 timer forud for overgrebet?	<input type="checkbox"/> <sub>0</sub>	Nej	<input type="checkbox"/> <sub>1</sub> Ja, hvor mange genstande: _____
Har du indtaget medicin inden for de seneste 24 timer (inkl. euforiserende stoffer) forud for overgrebet?	<input type="checkbox"/> <sub>0</sub>	Nej	<input type="checkbox"/> <sub>1</sub> Ja, hvilken medicin og dosis _____

I. GYNÆKOLOGISK ANAMNESE			
Sidste menstruation: _____			
Benyttede prævention?	<input type="checkbox"/> <sub>0</sub>	Nej	<input type="checkbox"/> <sub>1</sub> Ja, hvilken _____
<b>Har der været nogen form for ano-genitale læsioner inden for de seneste to måneder?</b>			
Tidligere graviditet	<input type="checkbox"/> <sub>0</sub>	Nej	<input type="checkbox"/> <sub>1</sub> Ja, hvilke _____
Aktuel graviditet	<input type="checkbox"/> <sub>0</sub>	Nej	<input type="checkbox"/> <sub>1</sub> Ja
<b>Hvornår har du senest haft frivilligt samleje inden for de seneste 2 uger?</b>			
	<input type="checkbox"/> <sub>1</sub>	< 1 døgn siden	
	<input type="checkbox"/> <sub>2</sub>	1 - 6 døgn siden	
	<input type="checkbox"/> <sub>3</sub>	1 - 2 uger siden	
	<input type="checkbox"/> <sub>4</sub>	> 2 uger siden	
	<input type="checkbox"/> <sub>5</sub>	Ikke haft seksuelt debut	
<b>Tidligere udsat for voldtægt eller voldtægtsforsøg</b>			
	<input type="checkbox"/> <sub>0</sub>	Nej	<input type="checkbox"/> <sub>1</sub> Ja



P. KONKLUSION PÅ DEN OBJEKTIVE LÆGEUNDERSGØGELSE - besvares kun ved positive objektive fund			
Er skaderne / læsionerne friske?	<input type="checkbox"/> <sub>0</sub>	Nej	<input type="checkbox"/> <sub>1</sub> Ja
Kan læsionerne være fremkommet på det angivne tidspunkt?	<input type="checkbox"/> <sub>0</sub>	Nej	<input type="checkbox"/> <sub>1</sub> Ja
Kan læsionerne være fremkommet på den angivne måde?	<input type="checkbox"/> <sub>0</sub>	Nej	<input type="checkbox"/> <sub>1</sub> Ja
Skønnes det efter det foreliggende, at tilskadekomne vil få			
a)	fysisk forbigående mén	<input type="checkbox"/> <sub>0</sub>	Nej <input type="checkbox"/> <sub>1</sub> Ja
b)	fysisk varige mén	<input type="checkbox"/> <sub>0</sub>	Nej <input type="checkbox"/> <sub>1</sub> Ja

BEMÆRKNINGER I ØVRIGT (Anden undersøgelse, evt. behandling, henvisning til anden speciallæge eller indlæggelse.	

Digitale fotos til internt brug	<input type="checkbox"/> <sub>0</sub>	Nej	<input type="checkbox"/> <sub>1</sub> Ja
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## O. OBJEKTIVE FUND VED DEN GYNÆKOLOGISKE UNDERSØGELSE

Inspektion af ydre kønsorganer	<input type="checkbox"/>	Nej	<input type="checkbox"/>	Ja
Vaginalinspektion og eksploration	<input type="checkbox"/>	Nej	<input type="checkbox"/>	Ja
Anal inspektion og eksploration	<input type="checkbox"/>	Nej	<input type="checkbox"/>	Ja
Oral inspektion	<input type="checkbox"/>	Nej	<input type="checkbox"/>	Ja

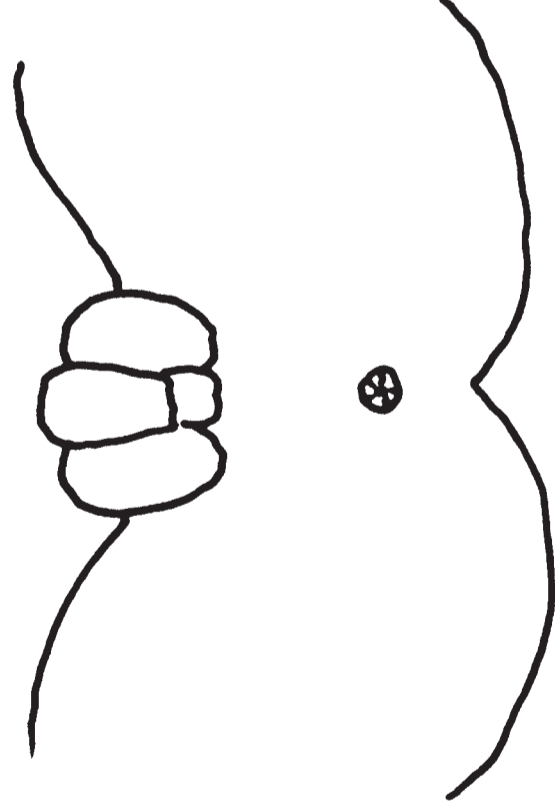
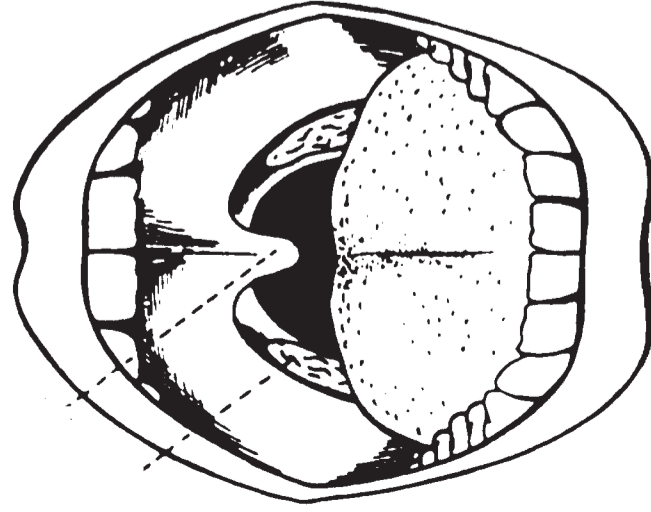
Tilsmudsning med sæd/blod på huden anogenitalt?  Nej  Ja

Tegn på infektion anogenitalt  Nej  Ja, beskriv (irritation, udslæt, udfliåd, ildelugt, vorter, ekssem): \_\_\_\_\_

Læsioner/skader

a) Interfemoralt	<input type="checkbox"/>	Nej	<input type="checkbox"/>	Ja
b) Anogenitalt	<input type="checkbox"/>	Nej	<input type="checkbox"/>	Ja
c) Vaginalt	<input type="checkbox"/>	Nej	<input type="checkbox"/>	Ja
d) Rectum/anus (erkendt ved exploration/anoscopi)	<input type="checkbox"/>	Nej	<input type="checkbox"/>	Ja
e) Mundhule	<input type="checkbox"/>	Nej	<input type="checkbox"/>	Ja

Hvis ja, angiv og beskriv på skitserne (Lokalisation, art, størrelse)



## OBJEKTIV LÆGEUNDERSØGELSE

**J. PSYKISK TILSTAND**

Beskriv psykisk tilstand, herunder hukommelsestab for det passerede:

**K. ALKOHOLPÅVIRKETHED**

<input type="checkbox"/>	Opåvirket	<input type="checkbox"/>	Nej
<input type="checkbox"/>	Let grad (ex. let læspen, stor talelyst, alkohol foetor)	<input type="checkbox"/>	Ja
<input type="checkbox"/>	Middel grad (ex. læspen, let usikker gang)	<input type="checkbox"/>	Ved ikke
<input type="checkbox"/>	Svær grad (ex. snøvlede tale, slingrende gang, ramler ind i ting)		
<input type="checkbox"/>	Beruset (ex. udflydende/gryntende tale, kan ikke sidde oprejst alene)		

**STOFFPÅVIRKET**

<input type="checkbox"/>	Nej
<input type="checkbox"/>	Ja
<input type="checkbox"/>	Ved ikke

**L. BEKLÆDNINGEN OG TILSMUDSNING PÅ KROPPEN**

Er der skiftet tøj (excl. trusser) siden overgrebet  Nej  Ja

Medbringes det skiftede tøj  Nej  Ja

Hvorledes er det skiftede tøj transporteret (ex. i plasticpose, papirpose), noter: \_\_\_\_\_

Er der skiftet trusser siden overgrebet  Nej  Ja

Medbringes de skiftede trusser  Nej  Ja

Hvorledes er de skiftede trusser transporteret (ex. i plasticpose, papirpose, noter: \_\_\_\_\_

**Beklædningens tilstand**

Iturevet tøj  Nej  Ja

Tilsmudset tøj  Nej  Ja

Dele mangler  Nej  Ja

Hvis dele mangler, beskriv hvilke: \_\_\_\_\_

**Tilsmudsning af hoved/krop**

Hvis ja, angiv lokalisationen:  Hoved  Krop  Arme  Ben

angiv tilsmudsning:  Snavs  Blod  Sæd  Andet \_\_\_\_\_

**M. GREB/VOLD MOD HALSEN**

Er der punktformede blødninger (petechier) i:

Øjne	<input type="checkbox"/>	Nej	<input type="checkbox"/>	Ja
Mundslimhinde	<input type="checkbox"/>	Nej	<input type="checkbox"/>	Ja
Ansigt	<input type="checkbox"/>	Nej	<input type="checkbox"/>	Ja
Bag ører	<input type="checkbox"/>	Nej	<input type="checkbox"/>	Ja

Er der foretaget røntgen af larynx  Nej  Ja

Hvis ja, hvad viste røntgen: \_\_\_\_\_

Er der henvist til øre-næse-hals læge  Nej  Ja

Højde: \_\_\_\_\_ cm Vægt: \_\_\_\_\_ kg

ID: \_\_\_\_\_

**N. LÆSIONER** (Gynækologiske læsioner beskrives særskilt på side 12-13)

Mistanke om selvdestruktiv skade

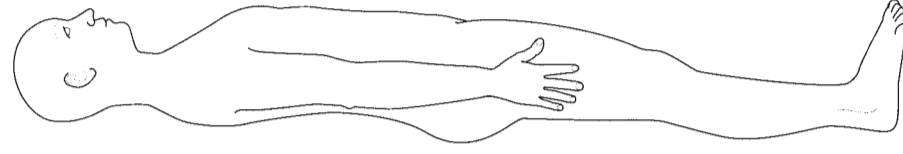
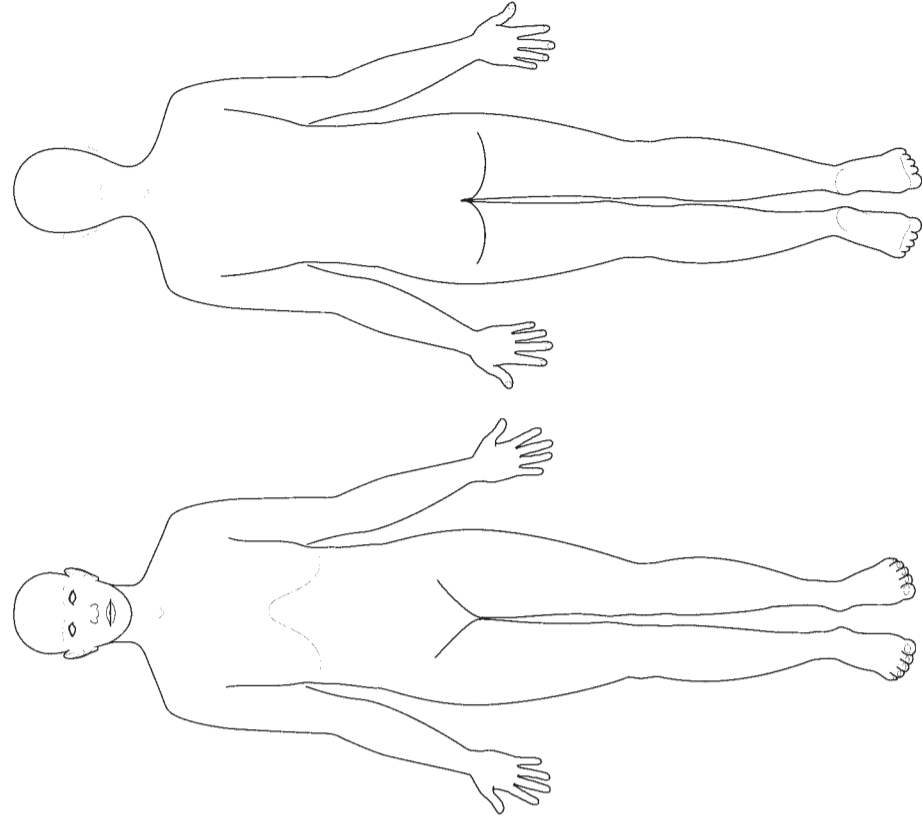
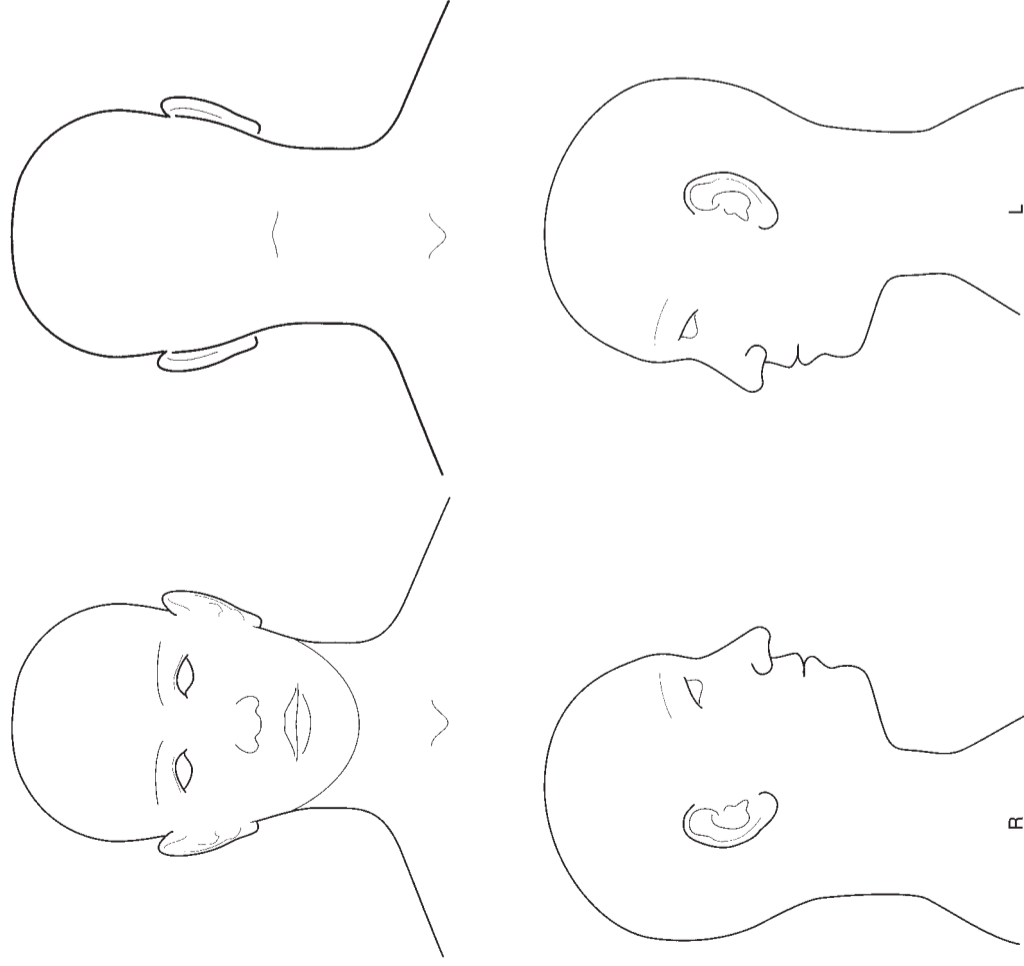
\_0 Nej \_1 Ja

Læsioner

\_0 Nej \_1 Ja

Hvis ja, angiv og beskriv på skitserne side 10-11 (Lokalisation, art, størrelse)

Antal læsioner: \_\_\_\_\_



ID: \_\_\_\_\_