

Attrition in Danish rape reported crimes

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Abstract This study investigated attrition in reported rape crimes in the earlier processing phases, including decisions by the police and the prosecution regarding case closure. Furthermore, this study examined potential differences in attrition patterns and legal decisions regarding case closure between a group of victims in contact with a specialized multidisciplinary treatment unit for rape victims compared to a group of victims not in contact with this unit. The study was conducted as a case-file analysis of all rape cases reported to a regional Danish police department (n=282) over a three-year period. Most cases were closed in the initial processing phases, with the police closing 61.7 % of the cases and the prosecution closing 53.7 % of the cases referred by the police. Insufficient evidence and the victim's unwillingness to participate in the investigation were important factors for attrition. We found no significant differences in attrition patterns or legal reasons regarding case closure between the group of victims who had been in contact with the specialized multidisciplinary treatment unit for rape victims and those who had not. More research is needed to explore effects of specialized multidisciplinary treatment units for rape victims on the legal process following a rape crime.

Keywords Rape · Sexual Assault · Attrition · Legal-Processing

Introduction

Rape is a serious criminal act with long-term health consequences for the victim (Campbell et al., 2009). In Denmark, 500 rapes are reported annually but this number is estimated to represent only 25% of all rapes committed nationally (Amnesty International, 2010; Laudrup et al., 2011). In addition, national statistics indicate that only a minority of reported rape cases are prosecuted by the criminal justice system in Denmark (Amnesty International, 2010; Laudrup et al., 2011). Attrition refers to the filtering process by which cases drop out of the criminal justice system. Although most serious crimes have some level of attrition, rape crimes seem to have one of the highest attrition rates (Lea et al., 2003) with only 5-10 % resulting in a conviction (Campbell, 2008; Kelly et al., 2005). Furthermore, in the past ten years, more rape cases have been reported to the police, but fewer cases have ended with conviction (Lovett & Kelly, 2009).

Most studies investigating attrition are now over a decade old and have mainly focused on the prosecution process and the court outcomes, rather than on earlier time points in the criminal process (Alderden & Ullman, 2012). Rape prosecution is a complex and multi-level process (Campbell, 2008) and the lack of research in the earlier stages of case processing may have serious consequences for understanding how cases are processed by the legal system as a whole (Alderden & Ullman, 2012). Newer studies in the area show that most rape cases are closed in the initial phases of the legal system (Alderden & Ullman, 2012; Brown et al., 2007; Spohn & Tellis, 2012) and decisions by the police and the prosecution are considered important 'gateways' to the courtroom (Kerstetter, 1990). Brown et al. (2007) suggested that it is

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necessary to differentiate between legal and extra-legal concepts when investigating factors that influence case processing by the police and the prosecution. The first category refers to decisions by the police and the prosecution regarding case closure based on legal practicalities such as the presumed likelihood of conviction in the court. Extra-legal factors, on the other hand, represent the impact of factors such as personal attitudes when closing a case (Brown et al., 2007). Only a few studies have investigated legal decisions behind case closure. These studies suggest that insufficient evidence and the victim's unwillingness and ability to participate in the investigation are the main reasons for cases being closed both by the police and by the prosecution (Brown et al., 2007; Gregory & Lees, 1996; Murphy et al., 2013). Unfortunately, data on attrition in rape cases and decisions by the police and the prosecution regarding case closure have mainly been gathered in the UK and the USA. Research has indicated that cross-country variations and similarities may exist (Lovett and Kelly, 2009) and studies from other countries are needed in order to explore whether different legal systems and cultures may influence the legal processing of rape crimes.

Furthermore, public and legal initiatives have been developed in recent years to improve the legal process following a rape crime (Spohn & Tellis, 2012). One of these initiatives is the establishment of coordinated multidisciplinary approaches to victims of sexual assaults (Campbell et al., 2005; Spohn & Tellis, 2012). These public treatment approaches were (among other things) developed to improve the response of the criminal justice system and increase the likelihood of a fair trial (Bramsen et al., 2009; Spohn & Tellis, 2012). In 1999, Denmark established its first regional center for victims of rape and sexual assault (Center for Rape Victims – CRV; Bramsen et al., 2009). The CRV offer specially trained nurses, medical treatment if needed, forensic examination, counseling by licensed psychologists, and facilities for police questioning if requested. Also, the investigators at the regional police department receive specialized training in interviewing victims of sexual violence and participate in interagency training and case-conferences with medical examiners, nurses, and psychologists from the CRV (Bramsen et al., 2009). The effects of specialized multidisciplinary units on the legal process following a sexual assault have largely been untested (Spohn & Tellis, 2012) but existing research indicates that the establishment of multidisciplinary treatment models can enhance prosecution rates following a rape crime (Campbell et al., 2012a, b; Campbell et al., 2009; Campbell et al., 2005).

The current Study

This study investigated attrition of rape cases reported to a Danish police department at the earlier points in the legal process, including decisions by the police and the prosecution regarding case closure. Two crucial stages were examined at

which case attrition normally occurs: 1) the police decision to present the case to the prosecution, and 2) the prosecution decision to press charges. We explored the legal decisions by the police and the prosecution for case closure by conducting a content analysis of the case files for the closed cases. In addition, this study examined whether attrition patterns as well as the legal reasons regarding case closure differed between a group of victims in contact with the CRV compared to a group of victims not in contact with the CRV. We explored potential differences in victim age and assault characteristics (identified perpetrator, known vs. unknown perpetrator, and the number of perpetrators) between these two study groups.

This study aimed to contribute to the knowledge on attrition in rape cases at the earlier phases of the legal process, including the legal decisions for case closure by the police and the prosecution based on a sample of rape cases reported to a Danish police station. In addition, the study aimed to contribute to the sparse amount of existing literature on the potential effects of specialized multidisciplinary treatment units for rape victims on the legal process following a rape crime.

Methods

Sample

The initial sample consisted of 296 case files reported to a regional police department in Jutland, Denmark, between 1 January 2008 and 31 December 2010. The police department covers a region with approximately 540,000 citizens and includes Aarhus, which is the second largest city in Denmark. We excluded all cases where the victims had been charged for a false rape allegation or cases where the victim had admitted during questioning that the allegation was false ($n=14$); leaving 282 cases for further analysis.

The reported cases represented 161 cases of rapes, 82 cases of rape attempts and 53 cases were the victims reported another forced sexual act such as forced oral intercourse or forced sexual touching. The sample consisted of victims ranging in age from 12 to 68 years. The lower age limit was set at 12 years because this is the age limit set for treatment inclusion at the CRV (Bramsen et al., 2009). Furthermore, in Denmark, victims below the age of 12 years are questioned by the police using videotaping whereas victims of 12 years or above are questioned following the standard procedure for adults (unless specific circumstances like cognitive impairment, mental illness or developmental immaturity are present). All cases, initially reported under the penal code for 'rape' based on the Danish penal code system, were included (Vestergaard, 2012). Furthermore, in the Danish penal code

system there exist several penal codes that characterize the definition of rape but are not termed rape in the judicial system. As examples, rapes against a person of the same sex or rapes with anal penetration are not registered under the penal code for rape but under the penal code for 'homosexuality with violence' and 'other sexual act with violence' respectively. Although these cases do not follow the judicial definition of rape we included such cases because they represent the definition of rape held by the general public. Cases involving both genders were also included as well as intra-familial rape cases.

Out of the 282 included cases, 138 victims had been in contact with the CRV while 136 victims had not. In eight cases information on the victims contact with the CRV was not available due to the lack of a personal identification number (CPR; see Data Collection). These eight cases were included in the analysis of overall attrition patterns and legal reasons regarding case closure but they were excluded from the analysis of differences between victims in contact with the CRV and victims not in contact with the CRV.

Data Collection

The included cases were identified using the electronic Danish police data system (POL-SAS). POL-SAS contains all the police reports containing victim, witness and perpetrator statements, as well as crime scene investigation reports, forensic medical examiner reports, prosecutor reports, and court papers. All reported rape cases in the time period were reviewed file by file in order to extract information on the legal process of the case as well as information on victim age and assault characteristics (e.g. perpetrator-victim relation and number of perpetrators). In addition, all files in POL-SAS containing any sexual offence were reviewed to identify potential rape cases misfiled by the police. Two cases were identified by doing this.

In order to make a content analysis of the police and the prosecution decisions for case closures all cases that were closed either by the police ($n=174$) or the prosecution ($n=59$) prior to court proceedings were identified. All statements, reported in POL-SAS either by the police or the prosecutor concerning why the case was closed, were extracted from these files. In Denmark, the police have the authority to close a case if it is estimated that no crime has been committed, which need to be pursued by the public system, or if it is estimated that it is not likely that further investigation will lead to the identification of the perpetrator. The prosecution has the authority to close a case without a legal trial if it is estimated that the case will not lead to a conviction of the suspected perpetrator, or if the public costs are not reasonable compared to the importance and expected legal outcome of the case. In addition, the prosecution can close a case without a legal trial if the perpetrator is already convicted for a crime

and it is estimated that a further conviction will not increase the existing legal punishment.

In order to compare cases where the victims had been in contact with the CRV with those cases where the victims had not been in contact with the CRV we used the victims CPR. In Denmark, all citizens have a CPR. The CRV register all victims in contact with the center including the victim's CPR. Likewise, the police register the victim's CPR when filing a case. We therefore cross-checked the victim's CPR of the included rape cases with the victim database of the CRV. Thereby, we were able to identify those victims who had been in contact with the CRV and those victims who had not. In eight cases the victim's CPR was lacking either because the victim was not a Danish citizen or because the victim's identity was unknown (e.g. anonymous police reporting).

All of the data material was collected at the police station and data were treated anonymous in the further data processing. In order to gain access to the data material it was very important that the collected data material and any reporting of the results could not be referred back to the victim- or the perpetrator's identity. Furthermore, the study was approved by the Danish Data Agency and all data were handled according to the guidelines of the agency.

Analyses

The analysis of overall case attrition was conducted at two case-processing points: 1) whether police presented the case to the prosecutor, and 2) whether the prosecutor charged the perpetrator for felony crimes.

Decisions by the police and the prosecution regarding case closure were examined by conducting a content analysis on the extracted material from the POL-SAS files containing all statements by the police or the prosecution concerning why the specific case was closed. This information was content analysed by a psychologist trained in the conventional content analysis approach (Hsieh & Shannon, 2005). All material was reviewed file by file and the main argument for case closure was noted separately. The main argument was selected based on the following criteria. In many cases both the police and the prosecution only stated a single argument referring to a legal paragraph for case closure. In cases with several arguments both the police and the prosecution often used the sentence 'in the decision to close the case I have put particular emphasis on...'. The argument which had a particular emphasis on the decision to close the case was then chosen as the main argument for case closure. In some cases, the police stated that it was not estimated that further investigation would lead to the identification of the suspected perpetrator because the victim did not participate in the investigation. In these cases we chose the victim's behaviour as the main argument although the case was also closed because of lack of identified perpetrator. When this procedure was used for all the included cases,

categories were developed by identifying similarities between the arguments for case closure. This process continued until all case files were divided into categories. Subsequently, the first author reviewed all the data material and repeated the process of coding and categorizing the arguments for case closure. Cohen's kappa coefficient (Cohen, 1960) was then used to assess inter-rater agreement. Cohen's kappa is a widely used statistical measure of inter-rater agreement for qualitative items (Lambard, Snyder-Duch & Bracken, 2002). The inter-item agreement was .97 for the police categories and .95 for the prosecutor categories, which according to Fleiss's guidelines (Fleiss et al. 1981) is excellent. The inconsistent categories (n=4) were then discussed between the first and second coder and an agreement was reached.

Differences between the group of victims in contact with the CRV (yes/no) and attrition patterns were assessed using Chi-square tests for independence. Associations between victims' contact with the CRV (yes/no) and the police decision to present the case for prosecution decision (yes/no) were explored, as well as associations between victims' contact with the CRV (yes/no) and the prosecutor decision to charge the perpetrator for felony crimes (yes/no). Chi-square tests for independence were also used to assess differences between victim contact with CRV (yes/no) and the identified legal categories for case closure. In addition, Chi-square tests for independence were used to explore potential between-group differences on perpetrator identification (identified/unidentified), perpetrator-victim relation (known/unknown), and number of perpetrators (one/several). Independent samples t-test was used to explore potential between-group differences of the victims' age.

All statistical analyses were conducted using the 'Statistical Package for the Social Sciences' (SPSS) version 21.

Results

Sample Description

Descriptives of the total sample and the two study groups are presented in Table 1. Chi-square tests for independence (with Yates Continuity Correction because of a 2 by 2 table) indicated a significant association between the two study groups and perpetrator-victim relation. The group of victims who had been in contact with the CRV included more cases where the perpetrators and victims knew each other before the assault (χ^2 (1, n=273)=4.46, $p=.03$, $\phi=-1.35$) compared to the group of victims without contact to the CRV. There were no statistically significant differences between the two groups in relation to the age of the victims and the number of identified perpetrators, as well as the number of reported perpetrators.

Attrition Patterns

The majority of cases were closed in the initial phase of the legal process, where the police closed 61.7 % of the reported cases and the prosecutors closed 53.7 % of the cases referred by the police. When the cases were sent to trial (17.7 % of the total amount of cases), perpetrators were convicted in three out of four cases. The perpetrator was convicted in 13.5 % of the total reported cases. Overall attrition patterns are presented in Table 1.

Table 1 Descriptives and Attrition Patterns of the Total Study Sample and the Two Study Groups

	No contact CRV (n=138)	Contact CRV (n=136)	Total (n=282)
Age victim (<i>M/SD</i>)	22.2 years/10.9	24.9 years/10.3	23.3 years/10.6
Gender victim (<i>M/%</i>)	128 women/92.8	133 women/97.8	269 women/95.4
Perpetrator-victim relation			
- Known (<i>n/%</i>)	57 /41.3	61/45.2	146/51.7
- Unknown (<i>n/%</i>)	81/58.7	74/54.8*	135/47.9*
Perpetrator identified (<i>n/%</i>)	95/68.8	78/57.4	177/62.8
Age perpetrator (<i>M/SD</i>)	29.0 years/11.8	29.3 years/10.9	29.1 years/ 11.2
Gender perpetrator (<i>n/%</i>)	136 men/98.6**	132 men/97.1***	276 men/97.1
Cases with more than one perpetrator (<i>n/%</i>)	9/6.5	16/11.8****	25/8.9
Cases referred to prosecutor (<i>n/%</i>)	59/42.8	48/35.3	108/38.3
Perpetrator charged by prosecutor (<i>n/%</i>)	28/20.3	22/16.2	50/17.7
Conviction (<i>n/%</i>)	22/15.9	16/11.8	38/13.5

*Unknown in one case

**Unknown in one case

*** Unknown in four cases

**** Unknown in nine cases

Legal Decision for Case Closure

The content analysis of the case files revealed five categories for case closure by the police (see Table 2). The three largest categories were 'insufficient evidence' (37.4 %), 'lack of identified suspect' (33.3%), and 'victim unwillingness' (26.4%). 'Insufficient evidence' included cases where there was not enough evidence (such as forensic evidence, potential eye-witness testimony or other evidence material e.g. videos) to support the victim's explanation and hence build a case. Also, some cases had a lack of evidence because the victim could not recall many details of the assault. 'Lack of identified perpetrator' involved cases closed by the police because it was estimated that further investigation would not lead to the identification of the suspected perpetrator. The category of 'victim unwillingness' mainly included cases in which the victim wanted charges dropped and hence declined to give further statements. Some cases also included statements concerning the lack of victim participating in the investigation. 'Legal characteristics of the case' (1.1 %), included cases closed due to legal reasons, (e.g., because the suspected perpetrator was under the age of criminal responsibility; 15 years in Denmark). In three cases (1.7 %) the police closed the case because they estimated that no crime had been committed.tgroup

The content analysis of the case files revealed three categories for case closure by the prosecution (see Table 3). The majority of cases were closed because of 'insufficient evidence' (76.3 %). This category mainly covered cases where the collected evidence material supported neither the victim's nor the suspected perpetrator's explanation and the cases were therefore closed because it was 'word against word'. The remaining cases were closed because of 'legal characteristics of the case' (18.6 %) or 'victim unwillingness' to continue the case (5.1%).

Victim Contact with the CRV

A Chi-square test for independence (with Yates Continuity Correction) indicated no significant association between contact with the CRV (yes/no) and whether the perpetrator was referred for prosecution by the police

Table 2 Police Decisions for Case Closure

	n	%
Total cases closed by the police*	174	-
Insufficient evidence	65	37.4
Lack of identified suspect	58	33.3
Victim unwillingness	46	26.4
Legal characteristics of the case	2	1.1
No crime committed	3	1.7

*One file was missing and could not be identified.

Table 3 Prosecutor Decisions for Case Closure

	n	%
Total cases closed by the prosecution	59	-
Insufficient evidence	45	76.3
Victim unwillingness	3	5.1
Legal characteristics of the case	11	18.6

(yes/no), χ^2 (1, n=274) =1.30, $p=.25$, $phi=-.08$. A Chi-square test for independence (with Yates Continuity Correction) indicated no significant association between contact with the CRV (yes/no) and whether the prosecution charged the perpetrator (yes/no), χ^2 (1, n=107) = .00, $p=1.0$, $phi=-.02$.

Also, Chi-square test for independence indicated no significant association between contact with CRV (yes/no) and the categories for case closure by the police, χ^2 (4, n=167) =6.60, $p=.16$, $phi=.20$ or between contact with CRV (yes/no) and the categories for case closure by the prosecution, χ^2 (2, n=58) =1.35, $p=.51$, $phi=.15$.

Discussion

This study set out to examine attrition patterns in 282 reported rape cases from a regional Danish police department. Consistent with other studies, we found that the majority of rape cases were closed in the initial phases of the legal system by the police and the prosecution (Alderden & Ullman, 2012; Brown et al., 2007; Frazier & Haney, 1996; Gregory & Lees, 1996). Furthermore, results from our study and the newest studies on attrition in rape crimes seem quite similar to findings reported 30 years ago (Galvin & Polk, 1983; La Free, 1980; Myers & LaFree, 1982). As such, current research indicates that the attrition pattern in rape crimes is unfolding in a seemingly predictable way across different countries and that the pattern has not changed markedly during the last few decades.

Searching for explanations for attrition in rape crimes we focused on the legal decisions for case closure by the police and the prosecution. We found that insufficient evidence and the victim's unwillingness to participate in the investigation were important factors for case processing both by the police and the prosecution. These are the same variables identified in previous studies. Some of the similarities in the attrition patterns of rape crimes across different studies may therefore be attributable to specific legal characteristic of rape offences. Rape crimes often involve only two people and the case is often based on contradictory statements. As an example, the reported rape crimes in this study involved one perpetrator in 91.1 % of the total number of cases. In addition, we found that

in many of the reported cases the suspected perpetrator admitted that there had been a sexual intercourse, but he claimed it was voluntary whereas she claimed that it was forced. Similarly, research has shown that compared to other serious crimes, rape cases are more likely to involve eyewitness identification of the defendant but they are less likely to involve strong evidence of legal guilt and statements from witnesses (Myers & Lafree, 1982). Furthermore, results showed that 26.4% of the cases closed by the police were closed because the victims' withdrew their allegation or refused further participation in the investigation. Similarly, Alderden and Ullman (2012) reported that the victim's willingness to participate in the investigation was the only predictor for police referral to the prosecution. This highlights the dilemma that many victims drop out of the investigation and that victim participation is an important factor for case processing. Researchers have attributed victims drop out of the legal process to manipulative and insensitive police responses (Frazier & Haney, 1996; Holmstrom & Burgess, 1975) and others point to the specific vulnerabilities of rape victims (Holmstrom & Burgess, 1975; Lea et al., 2003; Maddox et al., 2011). Many rape victims suffer from post-traumatic stress disorder (Elklit & Christiansen, 2010), potentially affecting their ability and motivation for further case processing (Maddox et al., 2011). Thus, it seems to be important that police investigators and prosecutors are informed of the specific vulnerabilities of rape victims and are conducting interrogations of these victims in an empathetic and sensitive way.

Previous research suggests that the establishment of multidisciplinary treatment models could be a way to improve the legal process following a rape crime and enhance prosecution rates (Campbell et al. 2012a; Campbell et al., 2005). Victims in contact with specialized treatment groups have been found more often to have evidence collection kits taken, which may enhance evidence collection (Campbell et al., 2005). Furthermore, research suggests that the focus on victim care has a positive effect on the emotional well-being of victims, which may make it more likely that victims are willing and able to participate in the legal process (Campbell et al., 2011; Campbell et al., 2008; McLaren et al., 2009; Stone et al., 2006). Contrary to our expectations we found no significant differences in attrition patterns and legal reasons for case closure between victims who had been in contact with the CRV and victims who had not. This finding is contrary to the study by Campbell et al. (2012a, b) who found that the use of Sexual Assault Nurse Examiner (SANE) programs were associated with increased referral rates by the police. However, whereas Campbell et al., (2012a, b) used a sample of pre- and post SANE implementation cases, cases in this study were recruited from a time period where the police department was a part of the CRV (although not all victims used the CRV services). It is possible that the participation of the police department in the CRV may have a positive effect on the

processing of all reported rape crimes even though not all victims are in contact with other staff groups of this treatment unit. Comparisons of attrition rates with other police departments not participating in specialized multidisciplinary treatment units would be preferable in future studies. However, we also found a significant difference between the two study samples that could obscure the reported results. The group of victims in contact with the CRV included significantly more cases where the victim and perpetrator were known before the assault compared to the group of victims not in contact with the CRV. Research has suggested that the relationship between the perpetrator and the victim has a significant effect on attrition rates. Lea et al. (2003) found that if the victim and offender had engaged in sexual intercourse previous to the rape allegation, the victim was more likely to retract the complaint. Also, if the victim and offender were current or former partners, the case was more likely to be closed without a legal trial. It is possible that rape cases where the victim and perpetrator are previously unknown are more likely to reach the courtroom because such cases revolve around whether the defendant was the perpetrator rather than whether or not the complainant actually consented (Brown et al., 2007). Hence, this difference in the proportion of cases with known victim and perpetrator relationship may possibly influence the comparison of attrition rates between the two study groups. More research is certainly needed to explore potential effects of specialized multidisciplinary treatment units for rape victims on the legal process following the crime.

Limitations

The current study has several limitations. The study was geographically limited to a specific regional part of Denmark and the results may not be representative for Denmark as a whole. Furthermore, the comparison of attrition data across studies and countries is difficult due to variations in legal processes and systems as well as different ways of assessing attrition (Lovett & Kelly, 2009). Thus, there is a risk that these procedural and methodological variations influence the comparisons of results from different countries.

In addition, the content analysis of legal decisions for case closure by the police and prosecutor had some limitations. The extraction process of statements concerning case closure from the files in POL-SAS was not repeated by a second researcher. A second researcher could have validated that no important statements had been missed in this process. Furthermore, we focused on the main reason for case closure with the risk of oversimplifying the decision process. Some of the included cases did contain multiple arguments and considerations. However, we also found that most files contained only a single statement or very sparse information on why the case had been closed. This finding is similar to the study by Murphy et al. (2013) who found that many police reports lacked

explicit information on why the case was dropped in cases where the rape victim declined to pursue further investigation. These findings suggest that documentation practices could be improved and perhaps a more accurate reporting process could assist in the communication between the police officers, the prosecutors, and victims (Murphy et al., 2013). Future studies, though, would benefit from a more detailed analysis of the decision process by the police and the prosecution when closing a rape case.

Another limitation was the single focus on legal factors for case closure. Several other studies have focused on extra-legal concepts (e.g. the influence of prejudicial attitudes towards female rape victims in the legal system). It is highly possible that police officers and prosecutors rely on both extra-legal and legal factors when investigating rape crimes, which were not accounted for in this study. However, Brown et al. (2007) argued that although police officers and prosecutors display both attitudinal prejudices and a rational legal logic the latter seems to be dominating.

Conclusion

The results of this Danish case-file study support results from previous studies reporting that the majority of reported rape cases are closed in the initial processing phases by the police and the prosecution. Insufficient evidence and the victim's unwillingness to go through the legal process seem to be important factors for case processing in rape crimes. Specialized multidisciplinary treatment models have been found to improve the legal process following a rape crime by enhancing evidence collection and providing the victim with the necessary support to go through the legal process. In the current study, though, we found no difference in attrition patterns and legal reasons regarding case closure between the victims who had been in contact with a specialized multidisciplinary unit for rape victims and victim not in contact with this unit. However, an important difference between the study groups was found in the proportion of cases with known perpetrator-victim relationship. More research is needed to explore potential effects of specialized multidisciplinary treatment units for rape victims on the legal process following a rape crime. We therefore encourage knowledge sharing across different countries on experiences of attrition in rape cases and initiatives to improve the legal support for victims of rape.

References

- Alderden MA, Ullman SE (2012) Creating a more complete and current picture examining police and prosecutor decision-making when processing sexual assault cases. *Violence against Women* 18:525–551
- Amnesty International (2010) *Case Closed. Rape and human rights in the Nordic countries*. Amnesty International Publications, London, UK
- Bramsen RH, Elklit A, Nielsen LH (2009) A Danish model for treating victims of rape and sexual assault: the multidisciplinary public approach. *Journal of Aggression, Maltreatment & Trauma* 18:886–905
- Brown JM, Hamilton C, O'Neill D (2007) Characteristics associated with rape attrition and the role played by scepticism or legal rationality by investigators and prosecutors. *Psychology, Crime & Law* 13:355–370
- Campbell R., Patterson, D., & Lichty, L. F. (2005). The effectiveness of sexual assault nurse examiner (SANE) programs. A review of psychological, medical, legal, and community outcomes. *Trauma, Violence, & Abuse*, 6, 313-329.
- Campbell R (2008) The psychological impact of rape victims' experience with the legal, medical, and mental health systems. *American Psychologist* 63:702–717
- Campbell R, Patterson D, Adams AE, Diegel R, Coats S (2008) A participatory evaluation project to measure SANE nursing practice and adult sexual assault patients' psychological well-being. *Journal of Forensic Nursing* 4:19–28
- Campbell R, Dworkin E, Cabral G (2009) An ecological model of the impact of sexual assault on women's mental health. *Trauma, Violence, & Abuse* 10:225–246
- Campbell R, Greeson M, Patterson D (2011) Defining the boundaries: How sexual assault nurse examiners (SANEs) balance patient care and law enforcement collaboration. *Journal of Forensic Nursing* 7: 17–26
- Campbell R, Patterson D, Bybee D (2012a) Prosecution of adult sexual assault cases: A longitudinal analysis of the impact of a sexual assault nurse examiner program. *Violence against Women* 18:223–244
- Campbell R, Bybee D, Kelley KD, Dworkin ER, Patterson D (2012b) The impact of sexual assault nurse examiner (SANE) program services on law enforcement investigational practices: A mediational analysis. *Criminal Justice and Behavior* 39:169–184
- Cohen J (1960) A coefficient of agreement for nominal scales. *Educational and Psychological Measurement* 20:37–46
- Elklit A, Christiansen DM (2010) ASD and PTSD in rape victims. *Journal of Interpersonal Violence* 25:1470–1488
- Fleiss JL, Levin B, Paik MC (1981) *Statistical methods for rates and proportions*. John Wiley & Sons, New Jersey
- Frazier PA, Haney B (1996) Sexual assault cases in the legal system: Police, prosecutor, and victim perspectives. *Law and Human Behavior* 20:607–628
- Galvin J, Polk K (1983) Nccd Research Review: Attrition in case processing. Is rape unique. *Journal of Research in Crime and Delinquency* 20:126–154
- Gregory J, Lees S (1996) Attrition in rape and sexual assault cases. *British Journal of Criminology* 36:1–17
- Holmstrom LL, Burgess AW (1975) Rape: The victim and the criminal justice system. *International Journal of Criminology & Penology* 3: 101–110
- Hsieh HF, Shannon SE (2005) Three approaches to Qualitative Content Analysis. *Qualitative Health Research* 15:1277–1287
- Kelly, L., Lovett, J., & Regan, L. (2005). *A gap or a chasm. Attrition in reported rape cases*. Retrieved from: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.131.8325&rep=rep1&type=pdf>
- Kerstetter WA (1990) Gateway to justice: Police and prosecutorial response to sexual assaults against women. *The Journal of Criminal Law and Criminology* 81:267–313
- La Free GD (1980) Variables affecting guilty pleas and convictions in rape cases: Toward a social theory of rape processing. *Social Forces* 58:833–850

- Laudrup, C., Laursen, B., Sidenius, K., Balvig, F., Martinussen, M.-B. E., & Madsen, K. S. (2011). Voldtægt der anmeldes. Voldtægtsanmeldelsers vej gennem det retslige system. Retrieved from: <http://www.dkr.dk/sites/default/files/Voldtægt-del-VI-vej-gen-retssys.pdf>.
- Lea SJ, Lanvers U, Shaw S (2003) Attrition in rape cases. Developing a profile and identifying relevant factors. *British Journal of Criminology* 43:583–599
- Lombard M, Snyder-Duch J, Bracken CC (2002) Content analysis in mass communication: Assessment and reporting of intercoder reliability. *Human Communication Research* 28(4):587–604
- Lovett, J., & Kelly, L. (2009). *Different systems, similar outcomes? Tracking attrition in reported rape cases across Europe*. Retrieved from [http://kunskapsbanken.nck.uu.se/nckkb/nck/publik/fil/visa/197/different_systems_03_web\(2\).pdf](http://kunskapsbanken.nck.uu.se/nckkb/nck/publik/fil/visa/197/different_systems_03_web(2).pdf).
- Maddox L, Lee D, Barker C (2011) Police empathy and victim PTSD as potential factors in rape case attrition. *Journal of Police and Criminal Psychology* 26:112–117
- McLaren JA, Henson V, Stone WE (2009) The sexual assault nurse examiner and the successful sexual assault prosecution. *Women & Criminal Justice* 19:137–152
- Murphy SB, Edwards KM, Bennett S, Bibeau SJ, Sichelstie J (2013) Police reporting practices for sexual assault cases in which "the victim does not wish to pursue charges". *Journal of Interpersonal Violence* 29:144–156
- Myers MA, LaFree GD (1982) Sexual assault and its prosecution: A comparison with other crimes. *Journal of Criminal Law & Criminology* 73:1282
- Spohn C, Tellis K (2012) The criminal justice system's response to sexual violence. *Violence against Women* 18:169–192
- Stone WE, Henson VH, McLaren JA (2006) Law enforcement perceptions of sexual assault nurses in Texas. *Southwest Journal of Criminal Justice* 3:103–126
- Vestergaard J (2012) *Straffeloven og straffuldbyrdelsesloven*. Karnov Group, Copenhagen