2001

The Sexual Assault Exam: A Comparison of Physical Findings and Legal Outcomes Between an Emergency Department and Free Standing Nurse Examiner Program

Linda L. Rossman
Grand Valley State University

THE SEXUAL ASSAULT EXAM: A COMPARISON OF PHYSICAL FINDINGS AND LEGAL OUTCOMES BETWEEN AN EMERGENCY DEPARTMENT AND FREE STANDING NURSE EXAMINER PROGRAM

By

Linda L. Rossman

A THESIS

Submitted to
Grand Valley State University
in partial fulfillment of the requirements for the
degree of

MASTER OF SCIENCE IN NURSING

Kirkhof School of Nursing

2001

Thesis Committee Members:

Jean Nagelkerk, PhD, RN

Theresa Bacon-Baguley PhD, RN

Jeff Jones, MD

ABSTRACT

THE SEXUAL ASSAULT EXAM: A COMPARISON OF PHYSICAL FINDINGS AND LEGAL OUTCOMES BETWEEN AN EMERGENCY DEPARTMENT AND FREE STANDING NURSE EXAMINER PROGRAM

By

Linda L. Rossman

The study objective was to compare the documentation of physical findings and legal outcomes of women evaluated in an emergency department (ED) and freestanding nurse examiner program (NEP). The study was a retrospective cohort analysis of consecutive female patients presenting after sexual assault to either the ED or to the NEP.

Genital injuries were documented in 19% of the ED group, in 74% of the 1997 NEP group and 77% of the 1998 NEP group. These differences were statistically significant (x^2=75.75; df=2; p=.000). In 24% of the ED patients and 21% of the 1997 NEP patients, warrants were issued compared to 37% of the cases at the NEP in 1998. These differences were statistically significant (x^2 =7.28, df=2, p=.03).

In conclusion, results suggest that colposcopy with digital imaging improves detection of genital trauma in female sexual assault victims and provides valuable legal information for law enforcement investigating allegations of criminal sexual conduct.

Acknowledgements

It is with great joy at completing this project that I would like to thank the following:

Thank you Bruce for your limitless patience, love and continued efforts to improve my writing skills, for all the proofreading and encouragement throughout this project.

Thank you Pete and Sam for your support and understanding of what I do.

Thank you Jeff Jones for your sense of humor, guidance and mentoring in the world of research.

Thank you Molly Nolan for reminding me that if a Master's Degree was easy, everyone would have one.

Thank you Chris Dunnuck, my coworker who makes these things look easy and encourages me on.

Thank you to all of the nurse examiners and advocates who continue to devote their time and efforts to the care of victims of sexual assault.

Table of Contents

List of Tables

Table

List of Figures

List of Appendices

CHAPTER 1

INTRODUCTION

Sexual assault has increased four times as fast as the overall crime rate in the United States (United States Department of Justice, 1988). A woman is sexually assaulted every six minutes, but 80%-90% are never reported (Hicks, 1990). According to a Senate Judiciary Committee Report (1993), 98% of rape offenders will never be caught, tried, or imprisoned. The treatment and lack of evidence has effectively inhibited victims of sexual assault from accessing the criminal justice system (Majority Staff of the Senate Judiciary Committee, 1993).

The legal definition of rape continues to evolve nationally. The uniform crime code originally defined the term as "carnal knowledge" (penile vaginal penetration only) of a woman, not one's wife, by force and against her will (Biennen, 1981).

Enacted in 1975, Michigan's Criminal Conduct Statute is considered a model of rape law reform. The law established four degrees of gender neutral criminal sexual conduct based on the seriousness of the offense, the amount of coercion used, the degree of injury inflicted, and the age and incapacitation of the victim. Under Michigan's law, a person is guilty of criminal sexual conduct under one of several circumstances, such as during the commission of any other felony, while armed, or while injuring the victim or using force or coercion to accomplish the sexual penetration (National Institute of Justice, 1994).

Although the Michigan rape statute has since been amended to eliminate the traditional marital-rape exemption, it includes many important reforms and expressly eliminates the resistance requirement (National Institute of Justice, 1994). Departing from traditional rape statutes, the Michigan law defines this crime by objective factors and circumstances that describe the forceful or coercive nature of a defendant's conduct rather than defining it by evidence of victim's nonconsent (Wicktom, 1994).

Michigan law also effectively eliminates the requirement for the prosecution to prove that a victim resisted and, therefore, eliminates the issue of consent. In Michigan law, consent is not specified as an element of or defense to the crime (National Institute of Justice, 1994). This relieves the prosecution of the burden of proving the victim's nonconsent beyond a reasonable doubt (Wicktom, 1994). Instead, the prosecution must prove that the defendant used force or coercion.

The enactment of Michigan's Criminal Sexual Conduct Statute has effectively raised the arrest and conviction rates for rape in this state, but has not shifted the focus of the rape away from the victim's behavior. Despite this legislation, the victim's nonconsent and demeanor at a trial remained the two most important factors of a successful prosecution. Accordingly, the consent issue is easily raised and remains the focal issue at trial (Wicktom, 1994).

After years of legal reform and striving to improve the legal system's response to sexual assault, rape remains grossly underreported. Many women still do not report sexual assault. Rape is an act that carries many physical, psychological and social implications (The National Judicial Education Program, 1994).

The truthfulness of a person who reports being sexually assaulted is more likely to be questioned and challenged than the statements of other crime victims. Recounting in public the details of the sexual assault is extremely stressful. Reactions by police attorneys and judges include skepticism, cynicism and sometimes harassment, which compound the situation and prevent the victim from progressing through the criminal justice system (Allison & Wrightsman, 1993).

Due to insufficient evidence and a lack of physical findings, many cases are reduced to one person's word against another person's word. Traditionally, when victims have consented to evidentiary examinations using gross visualization of the genitalia there has been a low yield of physical findings. This difficulty in establishing physical findings in rape victims has been an accepted limitation in the legal process that addresses sexual assault (Slaughter & Brown, 1992). It is clear that a physical examination is an important element in patient management and the findings of that examination can be a crucial factor in the corroboration of rape. However, conventional protocols using visual inspection have historically yielded positive finding in only 10%-30% of cases (Cartwright, Moore, Anderson & Brown, 1986).

Emergency physicians have traditionally performed sexual assault exams on victims brought to the hospital after a report of alleged sexual assault. A study done by White, Janicke, Braen and Pacos, (1998) sought to evaluate and compare the practice trends and knowledge base of emergency physicians examining the sexual assault patient. Conclusions of the study found that although most emergency physicians felt comfortable performing a sexual assault exam, most had not received any formal training in this area. Additionally, many key factors in forensic evidence collection were ignored. The authors

concluded that emergency physicians performed sexual assault exams that were less than optimal and additional education to this group was needed.

Over the past 20 years, many communities have established multidisciplinary teams, which use protocols to manage sexual assault victims in a more objective, sensitive manner. The protocols standardize the collection of evidence and typically include the use of colposcopy, a technique for which a binocular scope is used that allows examination at many levels of magnification (Hachbaum, 1987). Very few studies have evaluated the effectiveness of colposcopy in the assessment of rape victims. A study done by Slaughter and Brown (1992), demonstrated a protocol employing colposcopy which allowed examiners to establish findings in 87%-92% of victims experiencing penile penetration who were examined within 48 hours of the reported assault.

Even fewer studies have examined the effect of physical findings on legal outcomes of defendants. A study done by Geltz and Walton (1994), found a 96% conviction rate for defendants in sexual assault cases when exams were done using nurse specialists trained in colposcopic examination and evidence collection. Recent technology has not only allowed for improved visualization with colposcopic examination but also for computer imaging systems that allow for enhanced visualization, photo documentation and storage of this evidence.

Specially trained nurses are performing an increasing number of sexual assault examinations. The significance of this proposed study is to examine and document how improved evidentiary evidence collection and increased physical findings affect legal outcomes. It is likely that documented injury will play a role in the decision of assailants to plead guilty before their case is brought to trial. This will have significant implications to

the judicial system in terms of cost savings associated with lengthy trials and time constraints. From a nursing and health care perspective, physical findings that corroborate a victim's history of the event will not only give her credence in court, but also will assist her to respond adaptively and become more functional and empowered after the traumatic experience of sexual assault.

An additional objective of this study is to analyze the work of nursing theorist Betty Neuman in relation to the care of sexual assault victims and assess the "goodness of fit". It is appropriate that when nurses are involved in innovations in health care that a clear philosophy and framework for care is proposed to guild their study. This will allow the discipline to become more meaningful and the findings in research relevant to practice.

In this study, the following question will be examined: Does examination of alleged sexual assault victims at a free-standing nurse examiner program improve detection of physical findings and positive legal outcomes when compared to examinations done by physicians in an emergency department?

CHAPTER 2

CONCEPTUAL FRAMEWORK AND REVIEW OF LITERATURE

Conceptual Framework

Man is described by Neuman (1982) as an open system reacting to stress. Man is a composite of the interrelationship of four variables: physiological, psychological, sociocultural and developmental.

The values that underpin Neuman's model are those of wholism and the concept of "the whole being greater than the sum of the parts" (de Chardin, 1955, cited in Neuman 1989). Neuman (1989) uses this as the cornerstone of her model construction so that, in her view, each aspect of a person or group (system) can only be understood in relationship to its totality.

The system of the client can be portrayed figuratively (Figure 1) by a core of basic structure and energy resources surrounded by three hypothetical concentric circles representing boundaries (Neuman, 1989). The closest boundary, the lines of resistance, protects the core and consists of internal defensive processes such as immune response and physiological homeostatic mechanisms. The next boundary is the normal line of defense, or dynamic equilibrium, and represents what the person has become over time. It includes such aspects as intelligence, attitudes, problem solving and coping abilities.

Figure 1

System of the Client

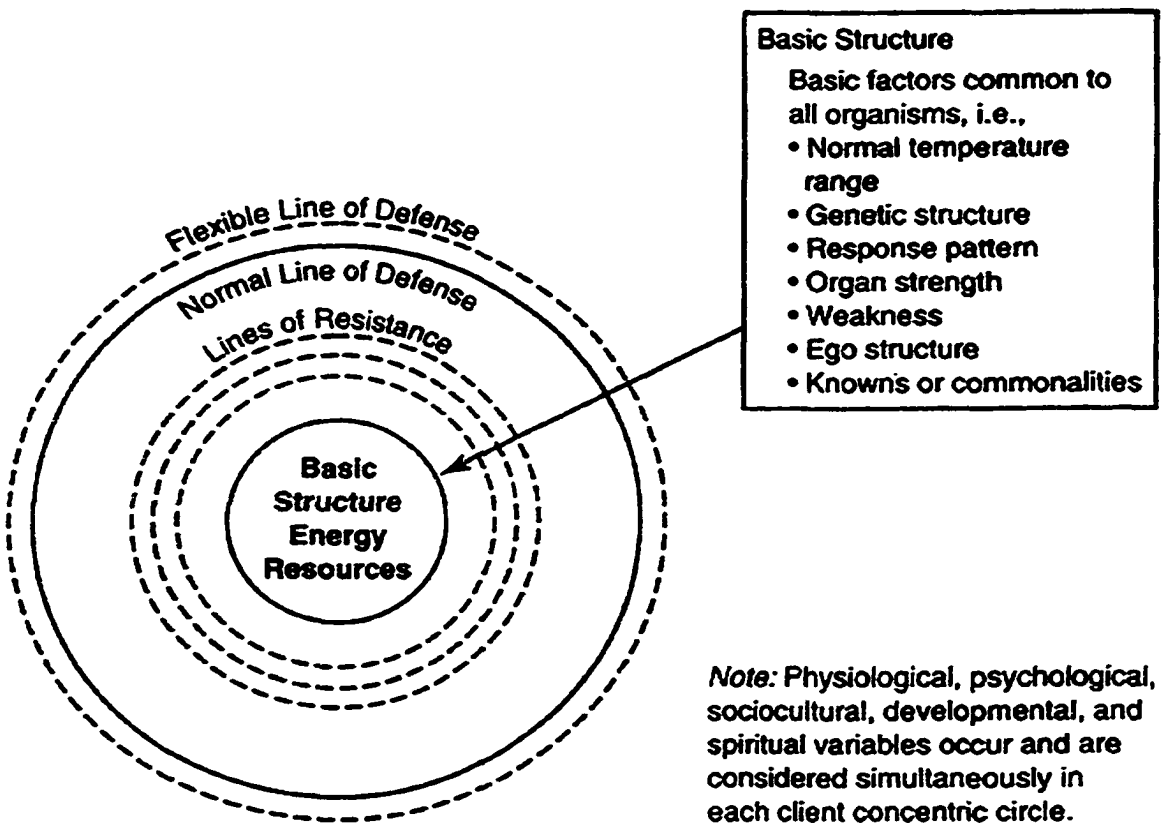


Figure 3–6. Client–Client System *(Reprinted from Neuman, B. (1995).* The Neuman systems model *(3rd ed.). Norwalk, CT:Appleton & Lange, p. 26, with permission.)*

The outermost boundary is the flexible line of defense, a protective buffer for the normal line of defense. It has an accordion-like action which changes in a relatively short time and is dependent on such factors as amount of sleep, level of nutrition, and the quality, and quantity of stress (Neuman, 1989).

A person is constantly subjected to stressors from within his own system and from the environment that can cause disequilibrium, situational or maturational crises, disease or death (Neuman, 1982). Reaction to stressors is determined in part by natural and learned resistance, which is manifested by the strength of the core and the various lines. Factors that influence the reaction to stressors are intrapersonal, interpersonal, and extrapersonal. The quality and quantity of an individual's reaction to stressors is determined by the interrelationships of the five variables: person, client, environment, health, and nursing. Of critical importance is the person's perception of a stressor since it can affect the person's resistance and response to that stressor. The number, timing, and intensity of stressors also affect a person's resistance to a stressor (Neuman, 1989).

The environment, according to Neuman (1989), is both internal and external. Within this environment, the system responds to stressors that occur. Each stressor differs in its potential for disturbing the system's usual stability level. This stability level will depend on previous circumstances and the defense mechanisms that have been established over time.

To meet personal needs, the client interacts with the environment, affects it, and is affected by it. Each individual has characteristics or responses that fall within a common range and sets of strengths or specific responses that set him apart as unique (Neuman, 1982). Neuman (1982) suggests that the environment is the source of stressors and

provides resources for managing these stressors. Stressors are such things as infection, radiation, excessive noise or sunlight, and interpersonal conflict. Resources are entities such as a functioning immunological system, positive coping skills, education, and strong family support. Stressors can be classified as either beneficial or noxious, depending on their nature, timing, degree, and potential for either positive or negative change in the person. Neuman places more importance on stressors than any other aspect of the environment.

Neuman (1982) equates health with wellness and defines it as the condition of optimal stability of the client. It is a situation in which the flexible line of defense has prevented penetration of the normal line of defense and all parts and subparts are in harmony. Health according to Neuman is living energy, and the wellness-illness continuum implies that energy flow is continuous between the client system and the environment. Entropy or disorder of the system arises when more energy is required than is being generated and "negentropy" or order of the system arises when more energy is being generated than used.

Neuman (1974) viewed nursing as a unique profession that is concerned with all variables affecting an individual's response to stressors. The goal of nursing is to facilitate the client's optimal wellness through retention, attainment, or maintenance of optimal system wellness. This is achieved through purposeful interventions directed at reduction of stress factors and adverse conditions that affect or could affect optimal client functioning at any point in time. The nursing process is used as the link between the client, environment, health, and nursing.

Neuman (1982) states that intervention can begin at any point at which the stressor is suspected or detected and identified. Based on the framework associated with the stressor impact of the person, Neuman has developed three levels of prevention. Primary prevention is selected when a stressor is suspected but no reaction has taken place. Intervention strategies include education, desensitization against risks, avoidance of hazards, and strengthening resistance to risks. Secondary prevention is appropriate when a reaction to a stressor has already occurred. At this level, the caregiver prioritizes the client's needs and carries out actions aimed at stabilizing the system by conserving client energy or purposefully manipulating stressors or reaction to stressors. Tertiary prevention is used after some intervention at the secondary level has been instituted and some degree of reconstitution has occurred. Tertiary level interventions include increasing motivation, modifying maladaptive behavior, orienting to reality, or re-education.

Neuman (1982) has systematized the nursing process into three categories: nursing diagnosis, nursing goal, and nursing outcomes. To formulate a nursing diagnosis using the model, a database is collected, identifying, assessing, classifying and evaluating the interaction between the four variables (physiological, psychological, developmental, and sociocultural) comprising the client system. One or all three prevention modalities give direction to, or may be simultaneously used for nursing action with possible synergistic benefits.

According to Neuman's Systems Model, sexual assault may be conceptualized as a stressor that could penetrate all lines of defense and may threaten wellness and even result in the death of the individual. The stressors in sexual assault can be categorized into three types: intrapersonal, interpersonal and extrapersonal. Intrapersonal stressors are the

victim's beliefs about rape, their ability to cope following a traumatic event and the amount of physical and psychological trauma sustained during an assault. The manifestations of these stressors could include psychological responses such as nightmares, sleep disturbances, anxiety, and depression. Phobias are other interpersonal stressors that may develop after a sexual assault such as fear of being alone, fear of the dark, or fear of intimacy.

Interpersonal stressors are those forces that occur between individuals, represented in this model as the contact between the victims and their assailants. Will they be able to face their attacker in court? Do victims fear a second assault or a possible threat to their life? Victims also have concerns regarding pregnancy and sexually transmitted infections, including HIV, as a result of contact with perpetrators.

Lastly, extrapersonal forces are those that happen outside the individual. These stressors could include reactions of family, children, or significant others to the reporting of a sexual assault. The participation of victims in criminal proceedings and courtroom testimony, and the return to employment and activities of daily living are other examples of extrapersonal stressors.

Intervention against a sexual assault can be defined as primary, secondary, or tertiary. Primary prevention is an intervention before the stressor occurs. It can include community and target population educational programs about safety and the avoidance of risk-taking behaviors that make one vulnerable to sexual assault. Secondary prevention begins after a stressor has penetrated one or all of the lines of defense. The goal is to rebuild or strengthen these lines. Neuman (1982) refers to this phase as "reconstitution," a process by which an individual reacts to stressors. The individual stabilizes and returns to

the usual, higher, or lower state of wellness. Nursing interventions at the secondary level include evaluation of the severity of the effects of the sexual assault on her current functioning level. Providing a safe therapeutic environment where the individual can gain control is also an important intervention. The victim needs to discuss the event and begin to work through the assault by detailing the experience and expressing feelings such as fear, anger, shame, and guilt.

The goal of tertiary prevention is to strengthen the individual to prevent recurrences of the stressor. If reconstitution does not occur, death ensues. Interventions include assisting victims to make connections with support groups and counseling services. Additional goals include assisting families and significant others in understanding what has happened to the victim and referring them to appropriate counseling resources as needed. The primary goal of nursing is to help an individual achieve a maximum level of wellness through purposeful interventions aimed at reducing stress factors.

Nursing care for victims of sexual assault have additional responsibilities in dealing with the multitude of stressors that the client may be experiencing. Using the Betty Neuman Systems Model, nurses can better understand the effects of stress on a victim's health and resources available to her to begin recovery. The Neuman Systems Model allows assessment of each client as an individual and determination of how she will cope with her existing stressors. This model also guides the intervention that would be appropriate for each victim of sexual assault.

Much has been written in the recent literature discussing the medical, legal, and psychological management of sexual assault. Little has been published, however, on

physical findings in rape cases, use of colposcopy examination to establish physical findings, and the relationship of physical findings to successful legal outcomes of assailants.

Literature Review

The Neuman Systems Model has guided a range of study designs, from qualitative descriptions of relevant phenomena to quantitative experiments that tested effects of preventative interventions on a variety of client system outcomes (Fawcett, 1997). Investigators have focused their research on such Neuman Systems Model phenomena as client and caregiver perceptions of stressors, the relationship between perceived stressors and client system reactions, and the effects of primary, secondary, or tertiary prevention interventions on client system reactions (Fawcett, 1997). A small segment of these studies from the literature is included.

Hinds (1990) entitled her study, "Personal and Contextual Factors Predicting Patients' Reported Quality of Life: Exploring Congruency with Betty Neuman's Assumptions." The author searched for factors that influenced a seriously ill person's quality of life. A retrospective cross-sectional study was conducted among 87 patients with lung cancer who ranged between the ages of 38-82 years. The purpose of the investigation was to determine whether relationships existed between the patient's preference for illness-related information, their satisfaction with family functioning, their level of learned resourcefulness, and their reported quality of life. The result of a stepwise multiple regression analysis identified seven factors, namely prognosis, surgery, current radiotherapy, performance status, self-control skills, preference for information and age-

group, which accounted for 30 percent of explained variance in patients' reported quality of life. No single factor contributed a substantial amount of the variance. The results supported a conclusion that a person's evaluation of their quality of life is subjective, changeable, and depends on the circumstances he/she faces. Congruence between the assumptions underlying Neuman's Health Systems Model, and the personal and contextual nature of the seven factors were explored in this study.

A study done by Koku (1992) examined the severity of back pain in a group of participants, part of which had counseling and part did not. The researcher used Neuman's Health Care Systems Model (1982) to ascertain if there was a difference in the severity of pain of chronic low back pain including participants who did and did not receive counseling. Existing data from a back school in a southeastern city was used for this study. The back school was operated by city officials to help city employees who have suffered from low back pain for more than two months. The sample consisted of 65 participants who attended the school from 1987-1989. A questionnaire was administered to participants on the first day of each session. A total of 40 participants were selected randomly for counseling sessions, which were held three times per week. Each counseling session lasted for 20 minutes.

Results of the study found no significant difference in the severity of pain in those patients who did and did not receive counseling. The author concluded nurses need to develop a more thorough assessment using Neuman's model and the nursing process to identify the severity of pain in terms of intrapersonal, interpersonal and extrapersonal stressors. Also, another theoretical framework in addition to Neuman should be used as a

basis for describing, explaining, and predicting the phenomenon of low back pain.

Hainsworth, (1996) used Neuman's Systems Model as a framework to determine the effect of death education on attitudes of hospital nurses toward care of the dying patient. A self-selected sample of 28 registered nurses from adult medical surgical units was assigned to experimental and control groups. Both groups completed a questionnaire, using a pretest/post-test format. The experimental group also received an educational intervention consisting of 6 hours of didactic instruction. Findings revealed no significant difference between the two groups and concluded death education had no effect on the attitudes or behavioral interventions of nurses caring for dying patients. Using Neuman's model nurses worked collaboratively with clients to assist them in managing reactions to internal and external stressors to achieve optimal wellness. Terminal care is perceived as stressful because hospital and medical care is focused on "cure". Little in nursing education has focused on the incurable. The use of the Neuman model in this research provides an example of how this theoretical model can be applied to nursing practice. It is also evident how this study could be applicable to nursing care of other difficult populations such as victims of sexual assault.

Taggart and Mattson (1995) used Neuman's System Model to determine if battering during pregnancy caused a delay in seeking prenatal care. The study was based on an adaptation of Neuman's (1982) health care systems model, the Community-as-Client Model. From this perspective, the authors examined how battered women from African American, Hispanic and White American populations responded to the stressor of abuse. This stressor creates other stressors, such as social isolation, which in turn, may result in a

greater stressor, especially to the fetus of the postponement or elimination of prenatal care (Taggart & Mattson, 1995).

The authors concluded, the Neuman Systems Model was an effective model to evaluate effects of battering during pregnancy including the seeking of prenatal care. Battered women in the sample sought prenatal care 6.5 weeks later on average than non-abused women. The degree of delay supported a need to include questions about battering in routine medical examinations and to include battered women in surveillance programs for women monitored for adverse pregnancy outcomes.

Sexual Assault

A large portion of the literature on findings in sexual assault has been done by Dr. Laura Slaughter (Ledrey & Arndt, 1994). It was her observation that conventional emergency department rape examination protocols focused on documentation of extra-genital trauma and collection of specimens. Less attention was paid to documentation of genital trauma because of the low yield of physical findings, 10% to 30% typically (Cartwright et al., 1987). Slaughter and Brown (1991) developed protocols using colposcopy to examine sexually assaulted victims when they initially reported and added follow-up exams, approximately two weeks after the original exam. They then documented frequency, type, and localization of genital findings in rape victims and on follow-up, reported similar findings and resolution of injury. The study included female patients ages 13-85 who made valid complaints of sexual assault between 1985 and 1990 (n=223). Patients were evaluated at initial and follow-up examinations by trained on-call examiners using the colposcope. The study revealed that 160 victims (69%) had genital

trauma; among the 131 experiencing penile penetration and seen within 48 hours, 114 (87%) sustained injury. One hundred fifteen (72%) had trauma at more than one site (mean 2.3 sites). Ninety-three percent of all victims with positive findings had injury to one or more sites.

Previously unreported, internal injury (vagina and cervix) accounted for findings in 40 cases (25%). Injuries at these sites included tears, ecchymosis, abrasions, redness, and swelling. Sixty-eight patients presented for follow-up 7 to 21 days later, had injuries that had healed in all but one case. Slaughter and Brown concluded that a rape examination protocol performed by trained personnel using colposcopy demonstrated a greater frequency of genital trauma than previously reported. They concluded that colposcopy may be the best method for documenting genital trauma. Furthermore, they reported that genital injury had a characteristic distribution associated with intromission. Lastly, follow-up examinations are crucial in confirming the nature, extent, and time frame of injury.

A similar study done by Lehahan, Ernst and Johnson (1994) was conducted to determine if the colposcope improved detection of genital trauma in adult women who are victims of sexual assault compared with gross visualization alone. A prospective, one month pilot study was conducted of 17 women patients who presented consecutively to Charity Hospital, New Orleans, during April 1994 and requested sexual assault examinations. Use of the colposcope allowed documentation of trauma in 9 of 17 sexual assault victims (53%), compared with 1 of 17 (6%) by gross visualization alone. Results of this small study suggested that colposcopy improved detection of genital trauma in adult female sexual assault victims.

Historically, if a sexual assault report included only forced digital penetration, many investigators would not request a medical legal exam. Goldstein and Arndt (1994) conducted a retrospective study, reviewing the results of medical-legal examinations and colposcopic photographs that were performed on sexual assault victims. Of the 16 patients examined who alleged digital penetration of the vagina, all had positive physical findings. They concluded that for victims, whose statements include allegations of digital penetration, a medical-legal exam, including colposcopy, may be useful in locating and documenting genital injuries, which are consistent with the history given.

A study by Emans, Woods, Flagg and Freeman (1987) examined 304 girls between the ages of 1 and 14 years seen at a hospital or in a pediatric office. They viewed this population differently from the adult sexual assault population for many reasons. The great majority of young children who report sexual assault do so usually weeks to months after the assault. The findings on cursory genital examination of these children are often normal and sexually transmitted infection cultures are usually negative (Rimsza & Niggemann 1982). For this reason, the authors found an increasing number of centers involved in the evaluation of sexually molested children using colposcopic magnification of the vulva, hymen and anus with the hope of detecting micro trauma which might give further evidence of sexual abuse. At the time this study was done, no previous research had reported the incidence of various genital findings in girls. The study was undertaken to ascertain the occurrence of lesions in sexually molested girls, asymptomatic girls, and girls being seen for other genital complaints such as vaginitis or dysuria. A prospective study was carried out in which the colposcope was used to examine the three groups of girls. In this study, colposcopic examination was useful in detecting genital findings in

approximately one third of sexually molested girls. Although these genital findings occurred more commonly in sexually abused girls than in asymptomatic control girls, the overlap with symptomatic girls required further study but suggested that many of these girls may have also been sexually molested.

Once colposcopy was routinely used in examining victims of sexual assault, researchers began to look at other aspects of this particular population and more specific findings Since colposcopic examination allowed visualization of genital trauma with greater reliability, the question of the typical nature, distribution, and pattern of those injuries could be more completely addressed. Slaughter and Brown (1991) reviewed records of 238 rape victims seen by San Luis Obispo County's Suspected Abuse Team, who routinely use colposcopy to evaluate sexual assault victims. Nine anatomic sites were evaluated for the presence of injury. One hundred sixty patients were found to have genital trauma. Of these, only 46 (28%) had trauma at a single site. The predominate sites of injury were the same for these victims as for those experiencing injury at multiple sites. The conclusion of this study stated that rape victims have a characteristic pattern of localization injury that is associated with intromission. This injury is typically seen at sites between 3-6-9 o'clock and consists of tears, abrasions, and ecchymosis.

A similar study done by Slaughter and Shackleford (1993) on the same victim population, examined the correlation of genital injury in victims of sexual assault and compared their findings to those in women having consensual intercourse. The study reviewed the history, physical examination, and colposcopic photographs of sexually assaulted victims of which 69% had injury. Findings revealed that all of the injuries could be categorized into 5 different types: tears, ecchymosis, abrasions, redness, and swelling.

Ninety-three percent of all patients had injuries at one or more sites. The mean number of anatomical sites was three. Penile penetration was the most common act associated with injury, reported by 154 (81%) victims.

The authors of this study then examined 52 women (mean age 25.7), using colposcopy within 24 hours of consensual intercourse and compared them to a group of rape victims (mean age 24). Eight of fifty-two (15%) had genital injury (mean sites of injury=1); 116/130 (89%) of rape victims sustained genital injury (mean sites of injury=3). Conclusions were that most rape victims sustained genital injury, and of significance, when compared to women engaging in consensual intercourse, genital injury occurs more frequently ($P < .001$).

Adams and Knudson (1996) focused on the adolescent female population, but examined the frequency of specific genital findings in a group of pubertal girls who had experienced probable or definite sexual abuse. A chart review of children who reported penile-vaginal penetration and had colposcopic photos were selected. Abnormal genital findings were documented in 32% of patients overall, but were more common when the girls had reported bleeding at the time of the assault (50% vs. 26%; $P = .004$), or when the examination occurred within 72 hours of the last episode of abuse (69% vs. 26%; $P < .001$). The authors concluded that normal or nonspecific results of genital examinations are commonly found in adolescents who have been sexually abused, unless the abuse was very recent. They felt further studies were needed to document the healing of genital injuries in victims of acute assault and the frequency of hymeneal findings in nonabused and non-sexually active adolescents.

Satin, Hemsell, Stone, Theriot and Wendel (1991) found that little was known about the acute effects of sexual assault on pregnant victims and the outcome of their gestations. The purpose of their study was to examine patient demographics, forensic evidence, and patterns of injury in pregnant victims compared with matched nonpregnant sexual assault victims, plus compare pregnancy outcomes to a similar obstetric population. A retrospective review of these sexual assault victims revealed that 114 of 5734 (2%) were pregnant. Vulvar (95%), oral (27%) and anal (6%) penetration were reported with similar frequency in both groups. The detection of whole and motile sperm from the vaginal specimens was similar in pregnant and nonpregnant women. Physical trauma was more common in nonpregnant victims (63% vs. 43%; $P < .004$), especially genital trauma (21% vs. 5%; $P < .001$). There was no difference in the pattern of trauma by gestational age, but there were no chest or abdominal injuries in women at 20 weeks' gestation or greater. There were no spontaneous abortions or deliveries within 4 weeks of the assault. The conclusions of the study were that sexual assault during pregnancy is accompanied by less physical trauma than in non-pregnancy and has little immediate effect on pregnancy outcomes.

A similar study done by many of the same authors, Ramin, Satin, Stone and Wendel (1992) examined patient characteristics, patterns of injury, forensic evidence, and the frequency of sexual assault in post menopausal rape victims. It was not revealed in the methodology if colposcopy was used during examination. The object of this study was the review of medical and forensic records from 129 postmenopausal women (50 years of age or older) and 129 women from a comparison group (14-49 years of age) who reported having been sexually assaulted. Results of the study found that postmenopausal women

represented 2.2% of women reporting sexual assault. Trauma, in general, was common. Genital trauma was more common in the postmenopausal group (43% vs. 18%; $P = .001$). Nearly one in three postmenopausal women had genital abrasions or edema. Almost one in five older women had genital lacerations, with one in four severe enough to require surgical repair. In contrast, the frequency of extragenital trauma was more common in younger victims (66% vs. 49%; $P = .01$). Forensic findings were similar in both groups. Conclusions in this study stated that postmenopausal women who have been sexually assaulted are more likely to sustain genital trauma than younger victims are.

While many organizations and programs have advocated on behalf of female victims of sexual assault, the male population has been largely ignored. The few published reports describing sexual assaults on male victims estimate that 0.5% to 3% of inmates are sexually assaulted (Moss, Hosford & Anderson,1979). Data on nonincarcerated men are lacking. What data exists deals primarily with male child victims (Geist, 1988). A study by Lipscomb, Muram, Speck and Mercer (1992) compared the demographics, physical findings, and assault characteristics of adult male, sexually assaulted victims who were incarcerated and nonincarcerated adult male victims.

This study was a case series of 99 sexually assaulted adult male victims covering a 3-year period. The study included 80 incarcerated men and 19 men from the community. All victims were given a medical-legal examination using colposcopy according to standard procedures established by the center. The victims of sexual assault in the community group were older than the victims in the incarcerated group.

Apart from the age difference and weapon use, there were no statistically significant differences between the incarcerated and the nonincarcerated victims. In this

particular report, injuries were not specifically studied but reported that the findings were very similar to the female population at the same center. The similarities between the two groups suggest that sexual assault of men may not be unique to prisons, and all men are potential victims and required resources for treatment and counseling.

Another aspect of sexual assault that was studied by Sermac, DuMont & Kalemba, (1995) was the comparison of sexual assaults by strangers and known assailants. The objective of this descriptive study was to examine the characteristics of sexual assaults in these two groups. Outcomes measured were the assailant's relationship to the victim, sex of the assailant, number of assailants, type and location of the assaults, use of weapons, type of coercion, and extent of physical injury.

Researchers found that sexual assault by a person known to the victim accounted for 67 percent of the assaults reported. In 51 percent of the cases, the person was known more than 24 hours, 29 percent were current or previous boyfriends or spouses. Assailants who were strangers were more likely to assault the victim more than once ($P < 0.05$), use weapons ($P < 0.001$), and use physical coercion ($P < 0.05$). Assailants who were known to the victim were more likely to assault a woman who was sleeping or drugged ($P < 0.005$). Sexual assault by a known assailant was more likely to occur in the home of the victim ($P < 0.001$) or the assailant ($P < 0.005$), whereas sexual assault by a stranger was more likely to occur outdoors ($P < 0.001$) or in a vehicle ($P < 0.001$). Over all, the mean number of trauma sites was greater among victims assaulted by strangers than among those assaulted by people they knew ($P < 0.001$). Conclusions to this study were that over two-thirds of all sexual assaults were committed by people known to the victims and two-thirds were associated with physical trauma.

While medical assessment and colposcopic examination of sexual assault victims has increased physical findings, little is known about the effects of these findings and the role they play in the community response to sexual assault. It is presumed that these findings will positively impact an investigation by law enforcement personnel. but little is published reporting the outcomes of medical-legal evaluations and their relationship to prosecution and criminal penalties.

Rambow, Adkinson, Frost and Peterson (1992) assessed the medical and legal effectiveness of their institutions' adult female sexual assault protocol. A retrospective review was conducted of 182 adult female sexual assault victims undergoing evaluation within 36 hours of the assault. Each case was reviewed with specific attention to associated injuries, sexually transmitted diseases, compliance with medical follow-up, pregnancy, and legal outcome. Half of all cases had associated injuries.

Nine percent of the women were found to have genital trauma on pelvic examination (colposcopy was not used) although only 29 percent of these women had complaints of genital pain or bleeding. Ten percent of all women had positive gonorrhea cultures and only 30 percent of the women completed the follow-up protocol. None of the women given postcoital estrogen therapy were known to have become pregnant. Only 53 of the 182 cases had the potential for successful prosecution with both a victim willing to cooperate in a prosecution and an identified assailant.

Thirty-four percent of these cases resulted in a successful prosecution. Evidence of genital trauma or nongenital trauma was significantly associated with a successful legal outcome. Concluded from this study was the importance of a physical and evidentiary examination, including pelvic examination and assays for sperm and acid phosphatase in all

women presenting within 36 hours of the assault. The limitations of this study include the lack of colposcopic examination; only nine percent of the victims were found to have genital trauma. If the colposcope was used and was consistent with previous studies, the percentage of females with genital trauma would have been close to 80 or 90 percent and could have affected the prosecution rate.

Legal Implications

The Sexual Assault Resource Service in Minneapolis, Minnesota looked at 417 rape cases in 1990 (Ledrey, 1992). Of these cases, 193 were presented by the police to the county attorney. Of the defendants, 65 pled guilty, and 60 were denied or not charged by the county attorney and 14 went to trial. Of those who went to trial, six were found guilty by the jury and eight were found not guilty. The author of this study felt it was likely that the evidentiary examination and evidence collection played a role in the decision of the 65 assailants to plead guilty.

Tintinalli and Hoelzer (1985) titled their study "Clinical Findings and Legal Resolution in Sexual Assault." The objectives of the study were to identify patterns of medical findings in sexual assault, investigate the appropriateness of medical therapy, and determine the impact of the emergency department examination on the legal process. Complete medical records of 372 randomly selected female sexual assault victims were analyzed retrospectively. The records were abstracted to review patient characteristics, Emergency Department (ED) care, the presence or absence of sperm, and trauma in each patient, medical treatment given, clinical follow-up, and the relationship of the ED examination to legal resolution. Colposcopic examination was not a part of the protocol for examining ED physicians in this study.

Results specifically addressing the examination and its impact on legal resolution yielded several results. Injuries were categorized by anatomic area and severity. Injuries were counted as anatomic areas per patient; thus the number of injuries exceeded the number of patients. Severity was ranked as minor, moderate, or major. There was no documented injury in 68 percent of the victims; only one patient suffered major injury, which was a vaginal laceration with intra-abdominal penetration.

Of the 372 cases reviewed, 81 percent of the victims were lost to police follow-up or did not wish to prosecute. In one percent, warrants were requested by police but were denied. Warrants were issued in 18 percent of the total study cohort, including seven cases in which the victim had been raped before. In the cases in which warrants were signed, the ED medical examination demonstrated no sperm in 69 percent of the victims and no trauma in 71 percent. There was neither sperm nor trauma in 45 percent, compared to the entire group in which 37 percent had neither sperm nor trauma demonstrated ($P > .05$).

Guilty verdicts were rendered in 69 percent of cases in which warrants were issued; 18 percent of the cases were dismissed; 9 percent ended with not-guilty verdicts; and one case was still awaiting trial. Of the cases in which defendants were found guilty, victim examination in the ED demonstrated positive sperm in 34 percent and trauma in 34 percent. There was no correlation between sperm and trauma positivity in the group in which guilty verdicts were rendered, in comparison to the entire study cohort ($P > .5$).

In this study, the data did not support selection of cases for prosecution based on presence of sperm or trauma in the ED examination, and there was no statistically significant correlation between the presence of sperm, trauma, and legal outcome. The

study further showed that warrants and convictions did not seem to be selected on the basis of ED medical evidence. However, significant in this study was admission by the researchers that the quality of the examinations, including professionalism and personal commitment to this population, could be an important factor in the outcomes.

Geltz and Walton (1996) looked at 107 felony sex crime cases. The exams were done by specially trained nurses employing the use of a colposcope and photographic documentation. At the time of this study, of 107 cases, 20 were still open with legal resolution pending. Eighty-seven of the cases were completed; the prosecution rejected 14 because the victim either refused or was not available to cooperate. The remaining 73 progressed to preliminary hearings and 15 went on to a jury trial.

Of those cases, 58 defendants pled guilty before trial. Juries convicted 12 others and acquitted three. They concluded a positive conviction rate in 70 of 73 cases for a conviction rate of 96% among those cases that had completed the trial process. The study did not relate positive convictions to physical findings but may plan to do so in the future as more data is collected.

In summary, for victims of attempted or alleged sexual assault, a medical-legal examination including colposcopy demonstrated that genital trauma occurs with greater frequency than previously reported and may be the best method for documenting genital trauma. The ability to detect and document these injuries through colposcopic photography provides valuable medical and legal information. There is little information in the literature looking at physical findings in a sexual assault and its effects on prosecution. One study reviewed (Tintinalli & Hoelzer, 1985) concluded that presence of injury on examination did not significantly affect the outcome of legal process, however colposcopic

examination and photography was not used in this study. Other studies that did employ the use of colposcopy and photography demonstrated a positive effect on successful prosecution (Geltz & Walton, 1996). No studies in the literature could be found focusing on sexual assault victims before the use of colposcopy and photography and the effect this technology, once used as part of a protocol for evaluation, has on prosecution rates.

Research Question

Does examination of alleged sexual assault victims at a freestanding nurse examiner program improve detection of physical findings and positive legal outcomes when compared to examinations done by physicians in an emergency department?

Definition of Terms

Sexual assault: Sexual penetration of any type, including vaginal, anal, or oral penetration whether by penis, fingers, or objects.

Physical Findings:

Tears: (laceration) a wound made of tearing

Ecchymosis: an extravasation of blood under the skin

Abrasion: an area of the body surface denuded of skin or mucous membrane by some unusual or abnormal mechanical process.

Redness: a flush upon the skin or a color produced by congestion of capillaries which may result from a variety of causes

Swelling: an abnormal transient enlargement appearing on the surface of the body, edema

Successful legal outcome: any sexual assault case reported to law enforcement that resulted in a warrant being issued for the arrest of an assailant or a conviction of some degree of sexual misconduct or related charge.

CHAPTER 3

METHODS

Research Design

The design of this study was a retrospective cohort, medical-legal based chart review of women who presented with alleged sexual assault to the YWCA and a large mid-western urban acute care hospital Emergency Department (ED). One hundred women from the ED, 100 women from the Nurse Examiner Program (NEP) in 1997 and 100 from 1998 who presented with report of alleged sexual assault and had examinations were compared.

Setting

This study was conducted in Kent County, Michigan, a mixed urban, suburban and rural county in the Midwest with a population of 520,123. The majority of the population is white (85.6%). African-Americans make up 11.6% and Latinos consist of 2.3%. Community services include four acute-care hospitals, 11 local police jurisdictions, the county sheriff, state police, and county-based circuit (criminal) and probate (juvenile) courts (Palusci, Cox, Cyrus, Hartwell & Vandervort, 1997).

The mid-western urban acute care setting is a 529-bed acute care hospital. The emergency department is a Level I trauma center and has approximately 80,000 visits per year. The YWCA in Grand Rapids, Michigan has provided advocacy and counseling for victims of sexual assault for the past several years. The Nurse Examiner Program (NEP)

was established as part of the YWCA in 1996. The program consists of a suite of 6 rooms including a reception area, two offices, an exam room, a combination lab and medication room, and a bathroom. In the program's first full year of operation, 194 women with a report of alleged sexual assault were treated at the YWCA- NEP.

Study Period

The study period was determined by the last 100 women treated at the Emergency Department, which encompassed the years 1994, 1995 and 1996, prior to the opening of the NEP on November 1, 1996. In addition, the study includes the first 100 women treated at the NEP in 1997, beginning January 1, and the first 100 women in 1998 beginning January 1. Both groups met inclusion criteria.

Sample

Included in the study were females age 13 and older who reported an alleged sexual assault to police within 72 hours of the assault and consented to a forensic evaluation. The assault must have occurred in Kent County or, if location was unknown, must have been investigated by jurisdictions in Kent County. In the emergency department population, patients must have been examined by a board certified emergency physician or PG-III (post-graduate, third year) emergency resident. Excluded from the study were those victims of alleged sexual assault who did not report to the police, those who presented for treatment more than 72 hours after the assault, victims who refused a forensic evaluation, and male victims of sexual assault. No females younger than 13 were included because children 12 and under are treated at the Children's Assessment Center in Grand Rapids. There was no upper age exclusion criteria.

A board certified emergency physician or emergency residents who have had at least two years experience in emergency medicine conducted evaluations of the victims in the emergency department. Emergency medicine education focuses on care and treatment, including forensic evaluation as part of their curriculum requirements. Nurse examiners are registered nurses who have been specially trained to perform medical-legal exams on victims of sexual assault. Education of these nurses includes approximately 80 hours of training in all aspects of caring for this population, including physical examination, forensic preservation of evidence, documentation, and courtroom testimony.

Emergency Department Evaluations.

Treatment of rape victims in an Emergency Department typically includes a physician taking a brief history of the sexual assault and additional reports of physical trauma that may have occurred during the rape. A physical exam is then performed excluding the pelvic exam. Generally, much of the evidentiary kit is collected by a registered nurse such as clothing, pulled and combed head hairs, saliva samples and oral swabs, and pulled and combed pubic hair samples. Physicians then perform a pelvic exam to check for injury and collect the remainder of the specimens to complete the rape kit including DNA vaginal swabs, smears and a wet mount sample for microscopic evaluation. Samples are also collected from the anal and oral areas if there is a history of anal penetration. The maintenance of the chain of custody for the evidentiary kit is a responsibility of the registered nurse caring for the patient. A pregnancy test is performed and prophylactic treatment is provided for chlamydia and gonorrhea. The patient is also offered pregnancy prophylaxis if the assault is within 72 hours. The patient is then referred to their primary care provider for ongoing sexually transmitted infection testing.

In most instances, a Medical Social Worker is contacted and will see the patient to offer referral information regarding counseling and shelter if necessary. Hospitals are legally obligated to cooperate with law enforcement in preserving and securing the forensic medical evidence; however, the report of sexual assault is usually the only information that may be released without a patient's specific consent, a subpoena, or a court order (Epstein & Langenbahn, 1994). The emergency department examination does not include use of a colposcope, toluidine blue, an alternate light source, or any photography. The estimated cost for a sexual examination in the emergency department is between $400 and $600.

NEP Evaluation.

The NEP was established to better provide for the emotional and medical needs of sexual assault victims and remove them from the chaotic emergency department environment. Once a report of sexual assault has been received by law enforcement, the victim is brought directly to the YWCA-NEP, provided there are no emergent medical needs. The nurse examiner and the patient volunteer advocate meet with police at the YWCA. After appropriate consents are obtained, a detailed interview is conducted jointly by law enforcement and the nurse examiner. The advocate remains with the victim throughout the entire process to provide emotional support.

A physical examination and collection of evidence is then performed. Initially, an alternate light source is used to survey the body. This light source is positioned on the end of a flexible wand with six different wavelengths of light designed to match those needed for crime scene processing of evidence. This tool allows the nurse to illuminate evidence by shining the light over the body. Physiological samples such as semen or saliva will fluoresce on the skin, similar to a Woods light. It is also possible to detect subcutaneous

bruising and bite marks before they are visible on the skin using this light source. If samples are found, the areas are swabbed and included in the forensic kit.

Photographic documentation of genital findings with a Siler colposcope is routinely done on all victims at the NEP. The genitalia examination begins with gross inspection of the perineum, introitus, hymen and the distal two centimeters of the vagina. This is followed by a colposcopic assessment of the same area at x16 magnification. The colposcope has four settings of magnification with x16 as its lowest setting and x40 as the highest setting. The colposcope is connected to a system that allows digital preservation of unlimited images on a computer hard drive. These images can be stored or printed at any time. Access to computer patient files requires a code that is available only to the nurse examiners at the NEP.

Prior to the insertion of a speculum or examining fingers, a 1% aqueous solution of toluidine blue, a general nuclear stain, is applied to the forchette using cotton tipped applicators. After drying for a few seconds, the area is wiped gently with a gauze moistened with lubricating jelly. Repeated wiping with gauze is continued until no further recovery of dye is obtained. Areas retaining a deep royal blue stain are interpreted as positive. Care is taken to wipe the test area completely dry and to avoid entry into the vagina of either the toluidine blue or the lubricating jelly to preclude interference with subsequent forensic tests. A speculum is then inserted into the vagina allowing for direct visualization and coloposcopic examination of the vaginal mucosa and cervix for physical trauma. The vaginal specimens are then collected, including a wet mount to inspect for motile sperm. If the history includes rectal penetration, an anoscope examination with

colposcopy and photo documentation is also performed and forensic samples are collected.

Cultures are not obtained at the NEP because victims are offered sexually transmitted infection (STI) prophylaxis and emergency contraception. A pregnancy test is performed to ascertain that the victim is not pregnant at the time emergency contraception is offered. If the victim has reported the assault to police, a two-week follow-up appointment is scheduled to rephotograph sites of injury for the purpose of documenting resolution of trauma. The need for ongoing sexually transmitted infection testing is discussed with the victim, including HIV, hepatitis, and syphilis and referrals to appropriate test sites are given.

The advocate then gives the victim information regarding free sexual assault counseling available at the YWCA. Permission is sought from the victim to be contacted within the next 48 hours to schedule the first counseling appointment. The initial consent form signed by the victim, allows nurse examiners to consult with police and discuss findings in the case.

Frequently photos of injury are printed and given to the investigating detective of the case. If the victim has not made a decision to involve the police, they are informed that the evidentiary kit will be kept in a locked refrigerator for one month, at which time it will be destroyed. Services at the NEP are free to all victims. The program is funded through a combination of local, state and federal grants.

Characteristics of Participants

The study period was January 1995 through November 1998 and was determined by the last 100 consecutive sexual assault victims treated in the ED prior to the opening of

the NEP and the first 100 women treated at the NEP in 1997 and 1998. Consecutive female victims (>12 years of age) presenting after alleged sexual assault to either the ED or NEP were reviewed chronologically for potential inclusion. Charts were excluded if the victim presented for treatment more than 72 hours after the assault; documentation indicated no completed vaginal penetration by a penis; a police report was not filed; assault occurred outside of Kent County; the victim decided not to undergo a forensic examination or to allow the examiner to complete a sexual assault evidence kit.

Demographics

Data was abstracted for baseline demographics, assault history, and documentation of genital trauma using a self-authored standardized data sheet (Appendix A). Additional information included pregnancy at the time of examination, more than one assailant, date of last consensual intercourse and use of alcohol within 24 hours of assault (Table 1).

The NEP groups were combined and compared to the ED group in terms of demographics and assault history. The mean age was 24.5 years (range 13-95 years). The NEP had a greater percentage of alcohol use in 24 hours prior to sexual assault – 49 percent versus 32 percent, which was statistically significant, p=.007.

Table 1

Historic Results in Sexual Assault Victims

Group	ED (N=100)	NEP 97 (N=100)	NEP 98 (N=100)
Age, mean (±SD)	24 ± 13	24 ± 11	22 ± 8
Ethnicity (% white)	71%	73%	61%
Marital Status (% single)	81%	67%	77%
Pregnant at time of exam	6%	4%	3%
Alcohol Use, 24 hrs	32%	51%	47%
Multiple assailants	17%	20%	10%
No prior history of sexual intercourse	16%	12%	15%
Last consensual intercourse, 72 hrs	33%	25%	29%

Instruments

Data was abstracted from two different sexual assault forms, used at the two locations: the hospital emergency department (Appendix B) and the NEP (Appendix C). Data specific to the assault includes date of the exam, date of the assault, police jurisdiction, equipment used for examination, plus genital findings including number and location of injuries. Other data included pregnancy at the time of exam, presence of motile sperm, date of last consensual intercourse, recent gynecological surgery, use of drugs or alcohol within 24 hours of assault, and if a warrant had been issued in the case and a final legal outcome rendered.

Information was collected with the use of a self-authored Excel data sheet (Appendix D). A self-authored key (Appendix E) assigning alphabetical and numerical symbols for types and locations of injury was used due to lack of space on the data sheet and to assist with analysis. A second self-authored key (Appendix F) was used to categorize legal outcomes and assign a numerical code.

CHAPTER 4

DATA MANAGEMENT

Data Management

Results of this study were entered into the Statistical Package for Social Sciences (SPSS-PC) for statistical analysis. Chi-square and unpaired *t* tests were used to determine the significant differences between the two patient groups (ED and NEP).

The Chi-square test is a non-parametric test of statistical significance used to assess whether a relationship exists between two nominal-level variables. The nominal-level variables in this study are positive and negative physical findings in sexual assault victims at two different locations and positive and negative legal outcomes in all cases. Frequencies are recorded on contingency tables, the chi-square statistic is applied to these tables to test the significance of different proportions.

The t-test is a parametric statistical test used for analyzing the difference between two means. A t-test for independent samples was used in this study to determine the probability that a difference in the presence of physical findings and its effect on prosecution rates is a result of chance.

Results of examinations were correlated with the dependent variables of physical findings and prosecution rates in sexual assault victims at both locations.
The primary outcome of interest was the frequency of genital findings documented in sexual assault victims from each location. The expected proportion of physical findings

documented at Spectrum ED was approximately 10%, compared to 75% at YWCA-NEP. A subsequent power analysis revealed that only 22 subjects were required to detect a difference in documented physical findings with beta error set at 0.2 and alpha error set at 0.05. Planned enrollment was 300 subjects in order to give a better description of the types and locations of injuries, as well as the final legal dispositions (secondary outcomes).

Confidentiality Procedures

Measures to protect the confidentiality of the victims were instituted throughout the course of this project. Data collection was done solely by the author of this study. Only medical record and file numbers were used in data collection. Names and birth dates were released to police jurisdictions to obtain legal outcomes of the criminal sexual conduct complaint that was filed. This information is accessible through public records but was recorded using only an assigned number to the participant and legal outcome codes (Appendix F). There were no patient identifiers used on the data collection sheets. This study has been submitted and approved by the Grand Valley State University Human Subjects Committee, Spectrum Health's Nursing Research Committee, the hospital institutional review board, and the YWCA research review board. This approval process requires documentation and adherence to rigid confidentiality guidelines.

Research Questions

1. Does the examination of alleged sexual assault victims at a freestanding nurse examiner program improve detection of physical findings when compared to examinations done by physicians in an emergency department?

Chi-square analysis was used to determine significant differences between the three patient groups (ED, NEP-1997 and NEP-1998) with regard to genital and nongenital findings and also legal outcomes (Table 2).

Table 2

Categories of Trauma in Assault

Group	ED (N=100)	NEP 97 (N=100)	NEP 98 (N=100)
Genital or nongenital trauma*	56%	88%	92%
Nongenital trauma	44%	49%	50%
Genital trauma	19%	74%	77%

*P<.001

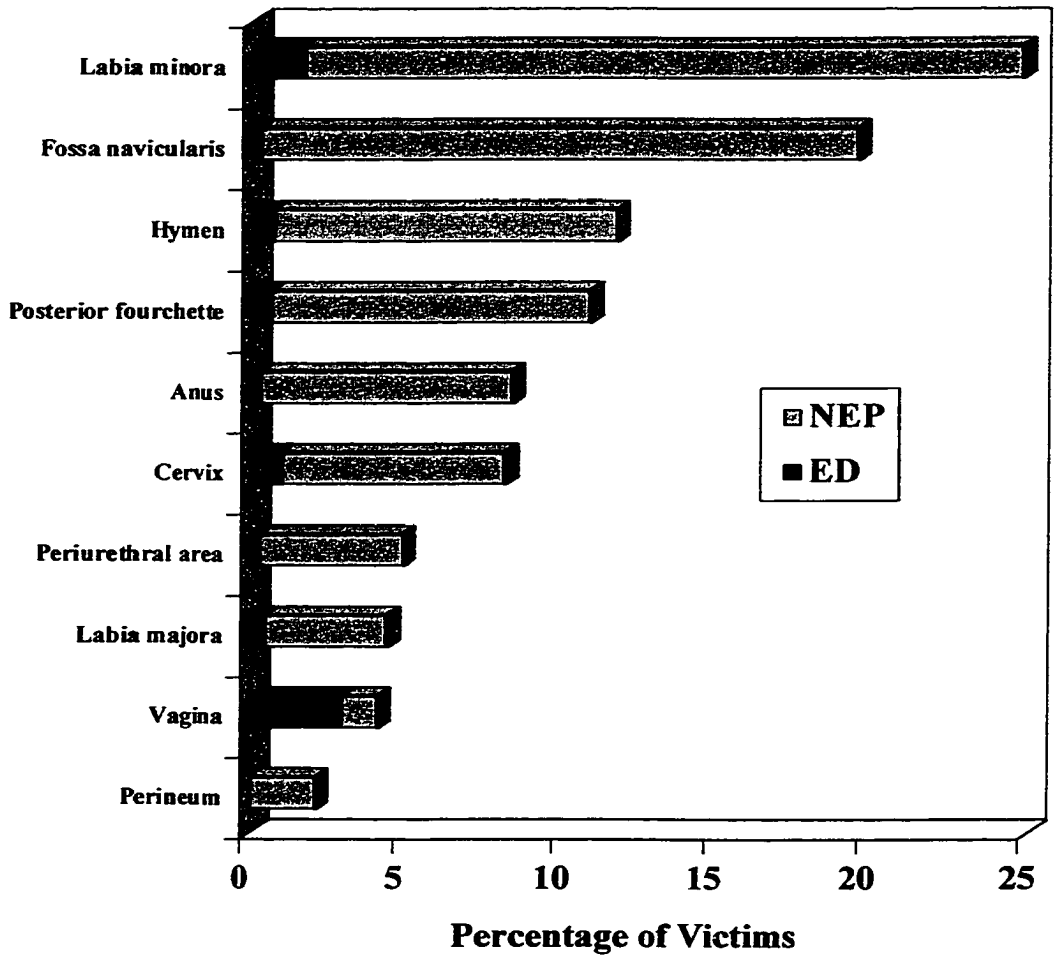
There were no significant differences in the type and frequency of nongenital trauma between the three groups with 44% of the ED group have positive nongenital physical findings compared to 49% of the 1997 group and 50% of the 1998 group (X^2=.99; df=2; p=.61). Genital injuries were documented in 74% of the 1997 NEP group and 77% of the NEP 1998 group (mean number of genital injuries 2.0). In comparison, 19% of those patients examined in the ED had documented genital trauma (mean number of injuries 0.4). These differences were statistically significant (X^2 = 75.75; df=2; p=.000).

Of the 300 sexual assault victims in the study, 167 had documented genital injuries (Figure 2). Sixty-seven victims (40%) had single and 100 (60%) had multiple site of injury. Overall, a total of 440 genital injuries were documented. Sixty seven

percent of these injuries occurred at one or more of four sites: labia minora, fossa navicularis, hymen, and/or posterior forchette.

Figure 2

Location and Frequency of Injury in 167 Victims with Positive Anogenital Findings



2. Does the examination of alleged sexual assault victims at a freestanding nurse examiner program increase the number of positive legal outcomes?

Positive legal outcome was defined as any sexual assault reported to law enforcement that resulted in a warrant being issued for the arrest of the assailant or a conviction of some degree of sexual misconduct or related charge. The three groups had the following results (Table 3):

Table 3

Legal Outcomes

Location	Number of Warrants Issued
100 ED	24 (24%)
100 NEP 1997	21 (21%)
100 NEP 1998	37 (37%)

Twenty-four percent of the ED victims and 21 percent of the NEP 1997 victims had warrants issued as compared to the 37 percent of the cases at the NEP in 1998. The difference between the ED and NEP 1997 compared to the NEP 1998 were statistically significant (X^2= 7.28, df=2, P=.03).

Points of Interest

The ED population had a significantly different distribution of genital injuries compared to the NEP group. Trauma to the anus, fossa navicularis, posterior forchette, and hymen were less frequently documented in the ED. Vaginal tears, however, were more commonly noted in the ED record.

Twenty-five percent of the victims were 13-15 years of age and, in over one third of all 300 victims, alcohol was consumed by the victim.

The criminal justice process is designed to punish and deter individuals who commit crimes. In all criminal cases, the prosecuting attorney represents "the people"

(society) (Hadad and Kriegar, 1996). Once a police report of sexual conduct is made, investigation of the crime is assigned to a detective. The results of the investigation are presented to the prosecuting attorney and a decision will be made whether or not to prosecute. This decision is based upon the amount and quality of the evidence that is available to the prosecutor. Frequently cases are dropped and not legally pursued. This can occur because of lack of evidence that could prove to a jury beyond a reasonable doubt that the defendant is guilty (Hadad & Kriegar, 1996). However, if the prosecutor feels there is sufficient evidence to proceed legally, there will be an arrest warrant issued. In this study, any case in which a warrant was issued or a guilty verdict of sexual assault or related charge was considered a positive legal outcome.

A small percentage of the criminal charges filed against the defendants in each group ended in dismissal or acquittal. Most were settled as a result of plea-bargaining to a lesser charge and given a variety of sentences including probation, fines, community service, jail or prison time. Eleven of the cases in 1998 remain open and are awaiting trial.

CHAPTER 5

DISCUSSION AND IMPLICATIONS

Discussion

Physical trauma from sexual assault requiring immediate medical attention is usually visible from gross visual inspection. However, physical findings that are subtle or not clearly visible may provide evidence for legal prosecution and help guide later medical decisions. It has been shown that the rate of successful prosecution is significantly higher when there is documentation of trauma and other physical findings (semen, hair, etc.) (Rambow, Adkinson, Frost & Peterson, 1992).

Samples from the first two years of the NEP's operation were used because during the initial year the program was new to the community, law enforcement agencies and prosecutors. During that first year some prosecutors were reluctant to utilize forensic nurses in roles traditionally held by physicians. As prosecutors became aware of the quality of evidence collected by nurses, it appeared that that information was playing a larger role in their decisions to issue warrants. Therefore the first two were examined to determine if this observation was valid.

The focus of this study was to determine if medical-legal examinations performed by registered nurses using standardized evidence collection improved detection of physical findings in sexual assault victims. The results of this study support a significant increase in genital physical findings through the use of specialized training, colposcopy and forensic

techniques used at the Nurse Examiner Program, ED did not use this technology to examine the victims. Also, significant was the increase in the number of warrants issued by law enforcement during the second full year of operation of the NEP compared to the first year of operation of the NEP.

The Neuman System's Model provided the conceptual framework for this study. In this model, the sexual assault victim is represented using three concentric rings consisting of lines of resistance, and normal and flexible lines of defense, surrounding a central core. The rings differ for each person because they include information from physiologic, psychological, sociocultural, developmental, and spiritual attributes of the individual (Bullock, 1993). The strength of the rings varies for each individual; the stronger the rings, the less likely a stressor will be able to penetrate and disrupt or destroy the core. The goal of nursing at the NEP is to protect victims' basic cores by reducing reactions to the stressor of sexual assault and maintain an optimal level of functioning. Interventions are aimed at establishing system stability and progress toward recovery. Photo documentation of physical findings that support a victim's story and immediate access to crisis counseling are important interventions used by nurses at the NEP. The Neuman Systems Model was useful and proved to be a "good fit" as a framework for nursing assessment and intervention in the care of sexual assault victims.

Limitations

This study was a retrospective chart review and did not control for evaluations by different examiners. Education, training, and documentation were not uniform between the ED and the NEP and could result in reporting bias. Also, data collection was done on hospitalized patients reporting sexual assault from one institution and one freestanding

clinic. While there are no other clinics treating sexual assault victims, there are three other hospital emergency departments in the study setting who treat sexual assault victims (referral-filter bias).

The small number of ED patients with documented genital injuries (n=19) results in limited comparison to NEP patients in terms of location and frequency of anogenital trauma. Additionally, women were only included in this study if they were reporting the sexual assault to law enforcement and agreed to a forensic evaluation. Many other women who reported sexual assault with significant genital and nongenital injuries were evaluated but were not included in the study because they were not reporting to police resulting in a selection bias.

Lastly, while some studies suggest that increased physical findings in sexual assault examinations increase successful prosecution, there may be other factors involved. Successful prosecution may have more to do with the victim's willingness to prosecute, her support systems and her emotional stability than documented genital or nongenital trauma.

Recommendations for Nursing

The Emergency Nurses Association position paper on the treatment of sexual assault survivors states their belief that all sexual assault survivors should receive comprehensive competent nursing care. (ENA Position Statement, 1996). They also state that because of the need for specialized education and training, this care should be provided by a Sexual Assault Nurse Examiner (SANE). Registered nurses should engage in interdisciplinary collaboration to ensure high quality patient care, evidence collection

and referrals for follow up and counseling for all survivors (ENA Position statement, 1996)

Application to Advanced Practice Nurses

The role of a SANE does not require an advanced nursing degree but is well suited for advanced practice nurses. The SANE is autonomous in providing comprehensive care to victims of sexual assault. Her duties include forensic evidence collection, sexual assault trauma response, forensic techniques using specialized equipment, expert witness testimony, assessment of injuries, sexually transmitted infection treatment, and pregnancy evaluation and treatment. The advanced practice nurse can bring to this unique population, expertise in pathophysiology and pharmacotheraputics while also providing expertise in psychosocial assessment and the diagnosis and treatment of rape-trauma syndrome.

Application to Staff Nurses

Since the emergence of SANE programs, research has become more readily available concerning the complex needs of the sexual assault victim. Emergency department nurses realized the importance of providing the best emergency care possible, but felt frustrated when they could not provide this care due to heavy patient loads and lack of experience and training. According to a Colorado study, 63 percent of the ER nursing staff indicated they had received no specific forensic training (Cohen, Donohue & Kovener, 1996). Proficiency in the care of sexual assault victims is important not only to ensure the safety of the victim but also to ensure proper chain of evidence and providing expert witness testimony in court. In locations where SANE nurses are not available,

specific education in forensic nursing and care of sexual assault victims should be included in education curriculum and the orientation of emergency department nurses.

Application to Nursing Education.

Recommendations for nursing education are to incorporate forensic nursing, into the education of all nurses. An extensive knowledge of forensic principles is important due to the diverse population of emergency department and hospitalized patients, many who have been victims of trauma and/or violence.

Application to Nursing Administration.

Care of the sexually assaulted victim requires a multidisciplinary approach including nursing, medicine, advocacy, and law enforcement. Nursing administration can assist SANEs by supporting new and existing programs. In areas where there are no SANE programs, administrators need to recognize and support the education of emergency nurses in forensic principals. Nursing leaders need to provide education to other hospital administrators who may create barriers to program development. Administrators can be powerful in the hospital and community in recognizing specially trained forensic nurses and their instrumental role in coordinating the health care activities to ensure that simultaneous goals of evidence collection and sensitive treatment of the survivor are met (ENA Position Statement, 1996)

Recommendations for Future Research

The implications for future research findings are numerous. First, replication studies are needed to further validate and examine findings in this study. The use of colposcopy and other forensic examination techniques in this study significantly increased

the ability of the examiner to detect injury. Many emergency departments have colposcopy available to them but are using them only for children. The disparity in descriptions of locations of injury in the hospital group and NEP group suggest additional education is needed for physicians and residents in proper anatomical labeling of the genitalia and forensic evidence collection.

The process by which sexual assault victims are cared for in the NEP has improved the amount of physical findings and the number of warrants issued but additional studies are needed to determine other outcome measures with regard to the victims. Are the sexual assault victims treated at the NEP any "healthier" in 6 months than those at the hospital are? Have they recovered with little life altering changes? Were they able to stay at their same residence? Were they able to continue living alone? Did they have a significant weight loss or gain? Did they divorce or separate from a significant other? Were the victims treated at the NEP more likely to get counseling than hospital treated victims? Are counseling programs for sexual assault victims effective?

The existence of SANE programs is relatively new and numerous programs are forming nationwide. Research is needed to support treatment of sexually assaulted victims using this approach. As nurses what have we learned and what are the recommendations for the future? Where should we focus our efforts and at what cost? Nurses attempting to develop new programs need facts and quantitative evidence of the SANE evidence collection model to support their efforts (Ledray & Simmelink, 1997).

APPENDIX A

Appendix A

Data Sheet

Log # _____ Med record#_____

Pt. name _____ Date of Birth_____

Police complaint #_____ Jurisdiction_____

Age_____ Marital Status_____ Race_____

Pregnant Y_____ N_____ Alcohol Y_____ N_____

Last consensual intercourse_____ condom Y____ N____

Recent (6 mo) gynecologic surgery Y_____ N_____

Date of the Assault _____ Time of Assault_____

Date of the Exam_____ Time of Exam_____

Genital Findings_____

Nongenital Findings_____

# of sites of injury _____ # of assailants_____

Legal Outcome_____

_____

_____

Sentence_____

Sperm present N_____ Y_____ Motile_____ Nonmotile_____

Woods Light Y_____N_____ Colposcopy Y_____N_____

Additional notes:

APPENDIX B

Appendix B
Spectrum Health Sexual Assault Form

April 1, 1990

MEDICAL RECORD

ALLEGED SEXUAL ASSAULT

Patient's Name _____ Age _____ Patient No. _____

Address _____

Telephone _____ Date _____ Time of Examination _____ A.M. P.M.

Name of Police Official with Patient _____ Jurisdiction _____

Police Complaint No. _____ Nurse in Attendance _____

Examining Physician _____

NOTE: For male sexual assault use this form omitting those entries and procedures applicable only to female anatomy.

AUTHORIZATION FOR COLLECTION OF EVIDENCE AND RELEASE OF INFORMATION:

I hereby authorize the Medical Personnel at _____ Hospital to record my history, conduct a physical and pelvic examination, take specimens from my body for appropriate laboratory tests, photograph my injuries if necessary, prescribe whatever treatments are medically indicated for my better health, retain my clothing if necessary for evidence, and fully cooperate with police authorities including release to them of all medical information about my case.

Patient's Signature _____ Date _____

Parent or Guardian _____

Address _____

_____

WITNESSES: (2 are required if patient or guardian unable to sign)

(1) _____ Nurse

(2) _____ Physician

PATIENT MEDICAL HISTORY

1. Does patient have any drug allergy YES ☐ NO ☐
2. Date of last menses _____
3. Last menses normal: YES ☐ NO ☐ If NO Describe _____

_____

4. Was patient diagnosed as pregnant prior to assault? YES ☐ NO ☐
5. Has patient noticed any symptoms of pregnancy? YES ☐ NO ☐

If YES Describe: _____

_____

_____

6. Most recent coitus prior to alleged assault

Date _____ Time _____ A.M. P.M. Condom used YES ☐ NO ☐

7. Current mode of contraception (prior to assault): _____

HISTORY OF ALLEGED ASSAULT

8. Patient's description of assault (record in patient's words): _____

_____

_____

_____

_____

_____

9. Date of assault _____ Time of assault _____ A.M. P.M.

Place of assault _____ No. of assailants _____

X02012 Rev. 7/94

White — Medical Records Canary — Prosecuting Attorney Pink — Crime Laboratory

10. During the assault:

Was foreign object used?	YES ☐	NO ☐	What _____
Was there oral sex?	YES ☐	NO ☐	Fellatio ☐ Cunnilingus ☐
Was there anal sex?	YES ☐	NO ☐	
Was there vaginal sex?	YES ☐	NO ☐	
Was there coitus interruptus?	YES ☐	NO ☐	
Did assailant experience orgasm?	YES ☐	NO ☐	
Did assailant wear condom?	YES ☐	NO ☐	

11. Since the assault has patient:

changed clothes	YES ☐	NO ☐
douched	YES ☐	NO ☐
bathed or showered	YES ☐	NO ☐

PHYSICAL EXAMINATION

12. B.P._____PULSE_____TEMPERATURE_____WT._____ lbs.

RESPIRATIONS_____HT._____

13. General Appearance _____

_____

14. Does patient appear to be intoxicated (alcohol/drugs)? YES ☐ NO ☐

If YES Describe: _____

_____

15. Emotional Status:

- ☐ calm and composed
- ☐ frightened/apprehensive
- ☐ hysterical
- ☐ angry
- ☐ confused
- ☐ Other Describe: _____
- ☐ retarded
- ☐ incongruously lighthearted
- ☐ expresses suicidal ideation
- ☐ withdrawn

16. Body Surface (Describe extent and location)

Bruises	☐ YES	NO ☐
Scratches	☐ YES	NO ☐
Lacerations	☐ YES	NO ☐

17. Head Hair (extract 6 hairs and place in envelope)

18. Mouth - evidence of trauma ☐ YES NO ☐
(Obtain saliva specimen)
(obtain swab & GC culture when indicated)

19. Fingernails Normal ☐ Other ☐
(scrape if history indicates attacker was scratched)

20. Pubic Hair:

evidence of ejaculum	☐ YES	NO ☐
blood	☐ YES	NO ☐
foreign debris	☐ YES	NO ☐

(Comb and collect free hair into envelope: Note any loose hair on the comb, and place the hair in the same envelope. The comb may be discarded.)

21. Vulva

soft tissue injuries ☐ YES NO☐ Describe:_____

secretions ☐ YES NO ☐ Describe:_____
(If YES) obtain 2 swabs and 2 smears

22. Hymen (Intact) ☐ YES NO ☐

23. Vagina (use no lubricant)

evidence of trauma ☐ YES NO ☐ Describe:_____

presence of secretions or discharge ☐ YES NO ☐ Describe:_____
(obtain 2 swabs and 2 smears) (obtain saline washing for motile sperm)

24. Cervix
(Obtain smear and culture for GC)

25. Uterus	Normal	☐ YES	NO ☐
26. Adnexa	Normal	☐ YES	NO ☐
27. Recto/Vaginal	Normal	☐ YES	NO ☐

(rectal smear and GC culture when indicated)

X02012-A Rev. 7/94

LABORATORY

28. Obtain 2 red stoppered tubes of blood and a urine specimen.
If blood alcohol or drug screen testing is desired, obtain 20 cc of blood in gray stoppered tube and 50 cc of urine.

History Alleged Sexual Assault (con't.)

April 1, 1990

COLLECTION OF EVIDENCE

General:

The specimens obtained are used for either diagnostic or forensic purposes. The diagnostic specimens, used for medical evaluation and treatment, are processed by the hospital laboratory. The forensic specimens, with exception of the motile sperm sample, are processed by the Regional Crime Detection Laboratory.

The specimen for determination of motile sperm is the one forensic study which must be performed at the time of examination.

All other forensic specimens are locked in the envelope marked **"Sexual Assault Evidence"** and then, along with the patient's clothing, are turned over to the investigating officer for transmission to the Regional Crime Detection Laboratory. The local police jurisdiction and the police complaint number should be placed on **BOTH** the front page of this form and on the envelope containing the evidence list of specimens and procedures.

CHECK LIST OF SPECIMENS

Forensic: (to State Crime Lab)

1. ☐ Clothing placed in paper bag and labeled with patient's name, police jurisdiction and complaint number.
2. ☐ One red stoppered tube of blood (for typing).
3. ☐ Saliva specimen (used to determine secretor status). Place a drop of saliva on filter paper, circle with pen. Air dry and place in envelope.
4. ☐ Head Hair: Instruct patient to pull 6-8 hairs and place them in the proper envelope.
5. Pubic Hair:
   - ☐ (a) Comb and collect free hair into envelope. Remove any loose hair on the comb, and place the hair in the same envelope. The comb may be discarded.
   - ☐ (b) Have the patient pull 6-8 pubic hairs and place them in a separate envelope.
6. Vaginal/Cervical Swabs
   - ☐ (a) Motile Sperm: (is to be done by the examining physician.) Swab the vagina and place the swab in 10 cc. of saline. Examine for motile and dead sperm and then discard. Note the results in the laboratory findings section of this form.
   - (b) Vaginal Contents: Obtain 2 swabs of vaginal contents and make 2 glass smears. Air dry and place both swabs and smears in the same envelope (for secretor type, acid phosphatase and evidence of sperm).
     NOTE: Obtain similar specimens when indicated from:
     - ☐ Vulva
     - ☐ Rectum
7. If indicated;
   - ☐ Samples of secretions or dried blood from skin or hair. Label as to the site from which taken.
   - ☐ Fingernail scrapings or trimmings.
   - ☐ Photographs (taken by examining facility).
   - ☐ Alcohol level (draw 20 cc of blood with non-alcohol prep and place in gray stoppered tubes).
   - ☐ Drug screen (50 cc of urine are required).

   NOTE: The specimens 2 through 7 checked above excepting 6 (a) (motile sperm specimen) are placed in the sexual assault envelope, along with the Forensic laboratory copy of this form and then locked.
   Signature of police representative receiving the Forensic materials above.

_____
(Signature)

MEDICAL SPECIMENS:

1. ☐ VDRL (second red stoppered tube)
2. ☐ Urine for pregnancy
3. ☐ Cervical smear and culture for N gonorrhea
   Similar specimens if indicated from:
   - ☐ pharynx
   - ☐ rectum
4. ☐ If indicated:
   - ☐ x-rays (evidence of trauma)
   - ☐ Urinalysis (bladder trauma)
   - ☐ Other

LABORATORY FINDINGS:

1. Examination for motile sperm.
   Time_____ A.M. P.M. Examiner_____
   Sperm present ☐ YES ☐ NO Sperm motile ☐ YES ☐ NO
2. Cervical smear: gram stain compatible with N. gonorrhea ☐ YES ☐ NO
3. Urine pregnancy test: Obtained ☐ YES ☐ NO Positive ☐ YES ☐ NO
4. Other

   Findings: Record NO opinion as to whether sexual assault has occurred.

X02012-B Rev. 7/94

White — Medical Records | Canary — Prosecuting Attorney | Pink — Crime Laboratory

TREATMENT

1. V.D. prophylaxis ☐ YES ☐ NO

Medication and route: _____

2. Pregnancy prevention:
   (a) additional measures indicated ☐ YES NO ☐
   (b) additional measures desired ☐ YES NO ☐
   (c) method (check if used)
   ☐ Medication (NOTE: D. E. S. is not approved for this purpose.)

(Norlestrin can be used as an alternative medication. If in the first half of a cycle: Norlestrin 2.5 mg. (0) bid x 10 days; if in the second half of a cycle: Norlestrin 2.5 mg. (0) bid x 5 days. Flow should begin within one week after cessation of medication or additional measures should be taken. Pregnancy is a contraindication for the use of Norlestrin. Known risk includes masculinization of the fetus, vaginal adenosis, and vaginal carcinoma. A patient must be advised of the risk to the fetus and the possible indication for abortion if an undetected pregnancy is existent at the time of treatment).

PATIENT CONSENT TO TREATMENT

I have been advised of the risks to the fetus involved in using Norlestrin to prevent pregnancy, and I understand that in some cases abortion may be advised as an alternative to prevent any possible risk to the fetus in case I am pregnant. Knowing this, I hereby give my consent to the use of this medication.

_____
(Patient's Signature)

☐ Referral for D & C ☐ Referral for endometrial aspiration

FUTURE TREATMENT

1. Referral for 6 week follow-up visit. (Repeat GC culture, VDRL and pregnancy test)

Physician or clinic _____

Address _____

Date _____ Time _____ A.M. P.M.

2. Referral for counselling:
   ☐ Rape Crisis Team
   ☐ Social Services
   ☐ Clergy
   ☐ Other _____

_____
(Examining Physician's Signature)

INSTRUCTIONS FOR PACKAGING SPECIMENS FOR TRANSFER:

1. Place the forensic laboratory copy of this record along with the forensic specimens in the lock-seal envelope. (If urine specimen for drug screen is too bulky, it must be sealed with tape, labeled, and transported separately outside the envelope.) Moisten gummed flap, fold, lock metal device, then seal flap.
2. Insure that the police officer receiving the evidence signs the lock-seal envelope as well as the remaining copies of this form in the space provided in the evidence checklist section.
3. Distribution of copies: The white copy is kept with the patient's chart. The pink copy is sent to the forensic laboratory in the specimen envelope. The canary copy is sealed in an envelope marked Police Investigating Officer and turned over to the appropriate police jurisdiction.

X02012-C Rev. 7/84

White — Medical Records Canary — Prosecuting Attorney Pink — Crime Laboratory

APPENDIX C

Appendix C

NEP Form

NAME: _____ CASE NUMBER: _____
ADDRESS: _____ PHONE NUMBER: _____
_____ CONTACT NUMBER: _____

INVESTIGATIVE DATA: Victim and Offense Characteristics

1) Age of Victim: _____ 2) Date of Birth: _____
3) Gender: ☐ Female ☐ Male
4) Race: ☐ Asian ☐ African-American ☐ Caucasian
☐ Hispanic ☐ Native American Other: _____

NURSE EXAMINER INFORMATION

5) Nurse Examiner: _____
6) Examination Date: (MM/DD/YY) _____
7) Examination Time: (HH:MM AM) _____
8) Law Enforcement Contacted: ☐Yes ☐No Law Enforcement Agency: _____
Incident Number: _____ Detective: _____

ATTACK INFORMATION

9) Attack Date: (MM/DD/YY) _____
10) Attack Time: (HH:MM AM) _____
11) **Brief** description (acts, race, injury, menstruating): _____
_____
_____
_____
12) Location and Physical Surroundings of Assault (bed, field, car, rug, floor, etc.): _____
_____

Residence	☐Yes	☐No	Describe: _____
Place of Employment	☐Yes	☐No	_____
Outside	☐Yes	☐No	_____
Other	☐Yes	☐No	_____

Victim Position During Assault:

☐ Prone ☐ Supine ☐ Other: _____

ACTS: (Check as Appropriate)

1. *Vaginal Contact*

	Yes	No	Attempt	Unknown	N/A
13) Penis	☐	☐	☐	☐	☐
14) Finger	☐	☐	☐	☐	☐
15) Foreign Object	☐	☐	☐	☐	☐
16) Other	☐	☐	☐	☐	☐

2. *Anal Contact:*

	Yes	No	Attempt	Unknown	N/A
17) Penis	☐	☐	☐	☐	☐
18) Finger	☐	☐	☐	☐	☐
19) Foreign Object	☐	☐	☐	☐	☐
20) Other	☐	☐	☐	☐	☐

If more than one assailant, identify person.
_____
_____
_____
_____
_____
_____
_____
_____
_____

3. *Oral Sex:*

	Yes	No	Attempt	Unknown
21) of victim by assailant	☐	☐	☐	☐
22) of assailant by victim	☐	☐	☐	☐

If more than one assailant, identify person.
_____
_____

4. *Oral Sex of Anus:*

	Yes	No	Attempt	Unknown
23) of victim by assailant	☐	☐	☐	☐
24) of assailant by victim	☐	☐	☐	☐

_____
_____

5. *Fondling:*

	Yes	No	Attempt	Unknown
25) of victim by assailant	☐	☐	☐	☐
26) of assailant by victim	☐	☐	☐	☐
27) other	☐	☐	☐	☐

_____
_____
_____

NAME: _____ CASE NUMBER: _____

6. *Did Ejaculation Occur:*

	Yes	No	Attempt	Unknown	
28) inside vagina	☐	☐	☐	☐	_____
29) inside anus	☐	☐	☐	☐	_____
30) inside mouth	☐	☐	☐	☐	_____
31) outside a body orifice	☐	☐	☐	☐	_____

32) If yes, describe the location on the body: _____

33) Erectile Dysfunction	☐	☐	☐	☐	

7. *Misc. Information:*

	Yes	No	Attempt	Unknown	
34) Licking	☐	☐	☐	☐	_____
35) Kissing	☐	☐	☐	☐	_____
36) Was a lubricant used?	☐	☐	☐	☐	_____
37) Was a condom used?	☐	☐	☐	☐	_____

POST-ASSAULT VICTIM ACTIONS *(Not applicable if over 72 hours)* **N/A** *(circle if not applicable)*

Have you:	Yes	No	Unknown
38) Showered/ Bathed	☐	☐	☐
39) Douched/genital wash	☐	☐	☐
40) Urinated	☐	☐	☐
41) Defecated	☐	☐	☐
42) Oral hygiene	☐	☐	☐
43) Changed clothing	☐	☐	☐
44) Removed/Inserted tampon, diaphragm (circle)	☐	☐	☐
45) Taken drugs/ meds	☐	☐	☐
46) Drank alcohol	☐	☐	☐

INVESTIGATIVE DATA: Offender Characteristics [Victim's Responses]

Assailant Description (Age, Gender, Race):

47) Approximate age (in years): _____ to _____

48) Assailant Gender: ☐ Male ☐ Female

49) Assailant Race: ☐ Asian ☐ African-American ☐ Caucasian
☐ Hispanic ☐ Native American ☐ Other: _____

50) Multiple Assailants: ☐ Yes ☐ No
If multiple, how many: _____

51) Approximate weight: _____ (Slight/medium/heavy) (circle one) 60) Approximate height: _____

Offender Relationship to Victim:

52) Stranger: ☐ No ☐ Yes
If known, relationship:
☐ Acquaintance/friend/just met (circle one): _____
☐ Current or former cohabitant: _____
☐ Dating relationship: _____
☐ Supervisor/ authority figure: _____
☐ Relative or in-law: _____
Other: _____

Offender Control of the Victim and Scene			Describe:
53) Weapon brought to scene:	☐Yes	☐No	_____
54) Bindings brought to scene:	☐Yes	☐No	_____
55) Use of gloves:	☐Yes	☐No	_____

NAME: _____ CASE NUMBER: _____

56) Weapon of opportunity: ☐Yes ☐No _____
57) Threats: ☐Yes ☐No _____
58) Victim alcohol or drug use: ☐Yes ☐No _____
59) Victim bound: ☐Yes ☐No
Type and location of bindings: _____
60) Victim gagged: ☐Yes ☐No
Type of gag: _____
61) Victim blindfolded: ☐Yes ☐No
Type of blindfold: _____
62) Abducted: ☐Yes ☐No _____
63) Bribery: ☐Yes ☐No _____
64) Victim's clothing removed: ☐Yes ☐No
65) How much/what clothing removed?
_____

66) Offender alcohol or drug use: ☐ Yes ☐ No Type: _____
67) Offender forced victim to drink alcohol or take drugs: ☐ Yes ☐ No
Describe: _____
68) Force by the offender: ☐ Yes ☐ No
☐ Held Down ☐ Coersion ☐ Threatened
☐ Slaps/hits ☐ Mere Presense ☐ Verbal _____
☐ Beaten ☐ Torture ☐ Weapon _____
☐ Bruises ☐ Lacerations ☐ Other _____
69) Victim resistance: ☐Yes ☐No
☐ Passive Describe: _____
☐ Verbal _____
☐ Physical _____

Additional Offender Verbal Activity: _____
_____
_____
_____
_____

Additional Victim Verbal Activity: _____
_____
_____

Offender's Behavior
70) Offender wore mask/ disguise: ☐ Yes ☐ No Describe: _____
_____
71) Offender clothing removed: ☐ Yes ☐ No
72) How much/ what clothing removed? _____

Victim Forensic Data
73) Height: _____ [estimate if exact height is not available]
74) Weight: _____ [estimate if exact weight is not available]
75) Eye Color: _____ 120) Hair Color: _____
76) Date, time of last *consensual* coitus: _____
Condom used? ☐Yes ☐No ☐ N/A

General Physical Examination
77) Note condition of clothing upon arrival (rips, tears, presence of foreign materials): ☐ Not Applicable
_____
_____
78) ☐ Collect outer and underclothing worn during or immediately after assault. ☐ Not Applicable
79) Tanner breast (female only): Tanner genitalia:

	1	2	3	4	5
Tanner breast (female only):	☐	☐	☐	☐	☐
Tanner genitalia:	☐	☐	☐	☐	☐

NAME: _____ CASE NUMBER: _____

80) *Other site of injury:* _____

_____

_____

_____

_____

_____

Method of Examination

81) *Direct Visualization:* ☐Yes ☐No

82) Anoscopic exam: ☐ Yes ☐ No

83) Speculum exam: ☐ Yes ☐ No

84) Colposcopic exam: ☐ Yes ☐ No

85) Toluidine Blue Staining: ☐ Yes ☐ No

86) Foley Balloon Technique ☐ Yes ☐ No

Alternate Light Source Findings:

☐ None ☐ N/A ☐ Not Done ☐ Findings Describe: _____

_____

Genitalia Examination Findings (Female)	☐ **Not Applicable**		**Comments:**
87) Labia majora:	☐ Yes	☐ No	_____
88) Labia minora:	☐ Yes	☐ No	_____
89) Clitoris:	☐ Yes	☐ No	_____
90) Posterior fourchette:	☐ Yes	☐ No	_____
91) Fossa navicularis:	☐ Yes	☐ No	_____
92) Periurethral:	☐ Yes	☐ No	_____
93) Vagina:	☐ Yes	☐ No	_____
94) Hymen:	☐ Yes	☐ No	_____
95) Cervix:	☐ Yes	☐ No	_____
96) Perineum:	☐ Yes	☐ No	_____
97) Anus:	☐ Yes	☐ No	_____
98) Perianal	☐ Yes	☐ No	

Genitalia Examination Findings (Male)	☐ **Not Applicable**		**Comments:**
99) Penis:	☐ Yes	☐ No	_____
100 Periurethal:	☐ Yes	☐ No	_____
101) Perineum:	☐ Yes	☐ No	_____
102) Anus:	☐ Yes	☐ No	_____
103) Rectum:	☐ Yes	☐ No	_____
104) Scrotum:	☐ Yes	☐ No	_____

105) **Victim's Demeanor During Examination/ Interview:**

- ☐ Quiet/ tense
- ☐ Trembling
- ☐ Brief response to questions
- ☐ Reluctant response to questions
- ☐ Tearful/ sobbing
- ☐ Agitated
- ☐ Anxious smiling
- ☐ Angry
- ☐ Responsive to questioning
- ☐ Other: _____

106) Laboratory Evaluation:

Urine Pregnancy	Rectal Hemocult	Toxicology
☐ Positive	☐ Positive	☐ Urine
☐ Negative	☐ Negative	☐ Blood
☐ Not indicated	☐ Not indicated	

NAME: _____ CASE NUMBER: _____

107) Evidence Kit:

☐ Kit Collected

☐ Kit Not Collected: Reason:_____

	Swabs:	Smears:
☐ DNA (7cc purple top tube)		
☐ Pulled head hair	☐ Vaginal	☐ Vaginal
☐ Combed head hair	☐ Rectal	☐ Rectal
☐ Pulled pubic hair	☐ Oral	☐ Oral
☐ Combed pubic hair	☐ Penile	☐ Penile

Other: _____

_____

108) Wet Mount: ☐ Done ☐ Not Done

Findings:_____

109) Photos:

☐ Sperm	☐ Copy sent with Law Enforcement	_____
☐ Physical injuries	☐ Copy sent with Law Enforcement	_____
☐ Face	☐ Copy sent with Law Enforcement	_____
☐ Genitalia	☐ Copy sent with Law Enforcement	_____

110) Clothing:

☐ No clothing given to investigator ☐ All clothing given to investigator

☐ Underpants given to investigator ☐ Other:_____

111) **Sexual assault exam reveals:**

☐ **PHYSICAL FINDINGS** ☐ **NO PHYSICAL FINDINGS**

112) SUMMARY OF FINDINGS: _____

_____

_____

_____

_____

113) Describe any pre-existing injuries:

_____

_____

_____

_____

_____

Signature of Examiner: **Printed name of examiner:**

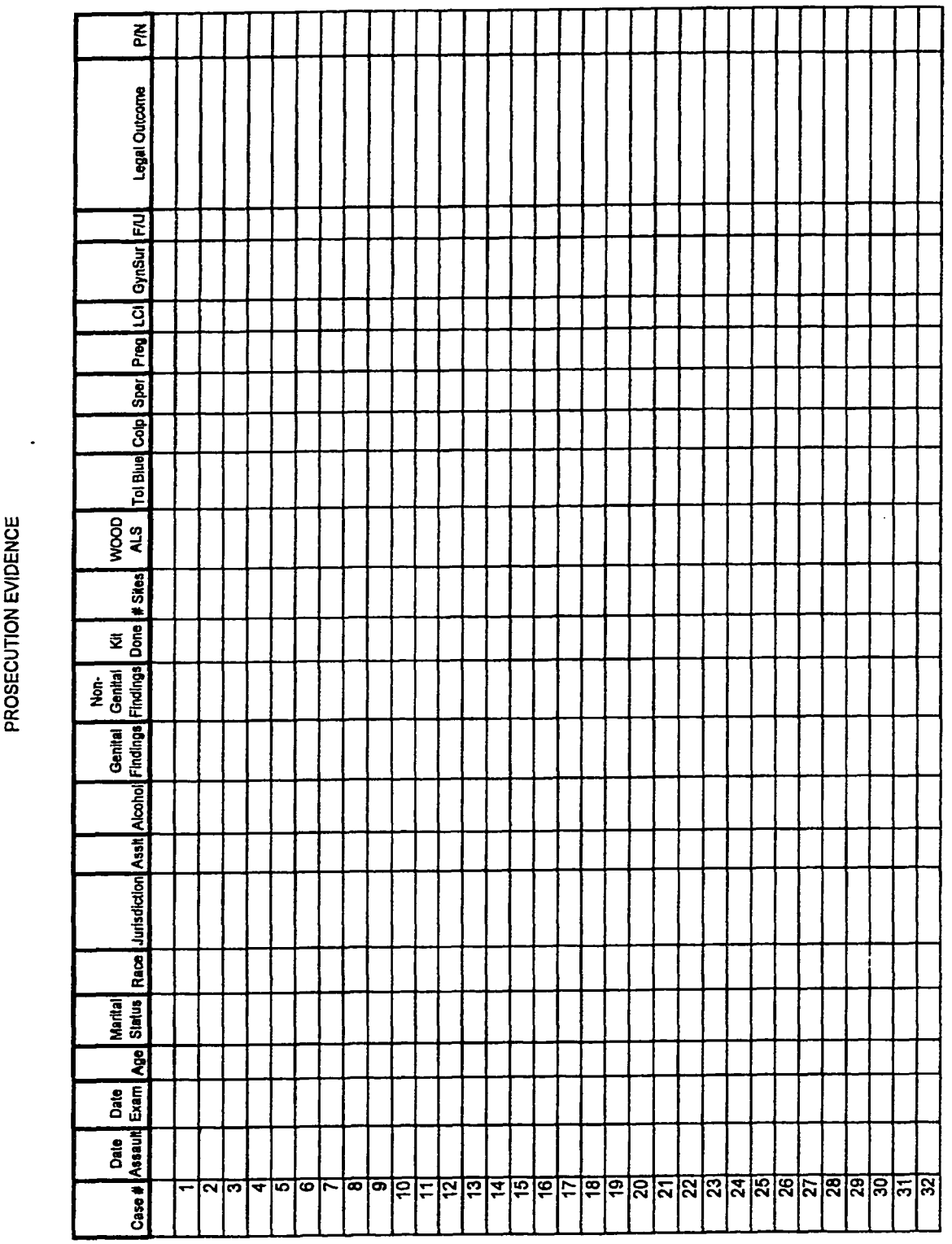
_____ _____

(Date)

APPENDIX D

Appendix D

Excel Data Sheet of Physical Finding and Legal Outcomes



PROSECUTION EVIDENCE

Case #	Date Assault	Date Exam	Age	Marital Status	Race	Jurisdiction	Asslt	Alcohol	Genital Findings	Non-Genital Findings	Kit Done	# Sites	WOOD ALS	Tol Blue	Colp	Sper	Preg	LCI	GynSur	F/U	Legal Outcome	P/N
1																						
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						
16																						
17																						
18																						
19																						
20																						
21																						
22																						
23																						
24																						
25																						
26																						
27																						
28																						
29																						
30																						
31																						
32																						

APPENDIX E

Appendix E

Physical Findings Key

1. Marital Status
   - S- single
   - M- married
   - D- divorced
   - W- widowed
   - C- cohabiting
   - O- other

2. Race
   - B- black, African American
   - C- Caucasian
   - N- native American
   - H- Hispanic
   - A- Asian
   - O- other

3. Injury
   - A- tear or laceration
   - B- ecchymosis or bruise, petechiae
   - C- abrasion, scrape, scratch
   - D- redness, erythema
   - E- swelling, edema
   - F- bite
   - G- burn
   - H- ligature
   - I- other

4. Genital location
   - 1- periurethral
   - 2- clitoris
   - 3- labia minora
   - 4- labia majora
   - 5- fossa navicularis
   - 6- posterior forchette
   - 7- hymen
   - 8- vestibule
   - 9- vagina
   - 10- cervix
   - 11- perineum
   - 12- anus
   - 13- other

5. Nongenital location
   - 13- scalp
   - 14- face
   - 15- mouth
   - 16- chest
   - 17- breast
   - 18- back
   - 19- abdomen
   - 20- buttocks
   - 21- lower extremities
   - 22- upper extremities
   - 23- hands
   - 24- feet
   - 25- other

6. Last consensual intercourse
   - 1-none
   - 2- <24 hours
   - 3- 24-48 hours
   - 4- 48-72 hours
   - 5- 4-7 days
   - 6- 7-14 days
   - 7- 2-4 weeks
   - 8- 1-2 mo.
   - 9- > 2 mo.
   - 10- other

APPENDIX F

Appendix F

Law Enforcement Action Key

01 Warrant issued with no arrest

02 Exceptionally cleared

03 Warrant issued with arrest

04 Unfounded case

05 Warrant denied

06 No Investigative leads

07 Uncooperative victim

08 Turned over to another jurisdiction or department

09 Not investigated

APPENDIX G

January 15, 1999

Linda Rossman
8081 Herrington NE
Belmont, MI 49306
(616) 866-7054

Ms. Betty Neuman
Box 488
Beverly, Ohio 45715

Dear Ms. Neuman,

I am writing to request permission to utilize The Neuman Systems Model, original diagram copyright 1970 which appeared in your second edition of The Neuman Systems Model copyright 1989.

I am in the process of writing a thesis for my Master's of Science in Nursing and using the model in describing the reactions of a client system to stressors following a sexual assault. Attached is the abstract of my project.

I have already obtained permission from Appleton & Lange pending your approval. If you need additional information or have any questions please feel free to contact me. I have enclosed a self addressed stamped envelope. Thank you for your time and all of your contributions to the science of Nursing.

Sincerely,

[redacted]

Linda Rossman, RNC

Kindly use the model diagram found in the latest third Edition 1995 - Permission is given to use this 1995 citation.. [redacted]

From: Pool, Linda C.
Sent: Tuesday, February 06, 2001 9:47 AM
To: Rossman, Bruce
Subject: Linda Rossman's study

Linda Rossman's study entitled "The Sexual Assault Exam; A Comparison of Physical Findings and Conviction Rates Between an Emergency Department and Free Standing Clinic was given approval by the Spectrum Health Research and Human Rights Committee. Included in her approved proposal for use as part of the study was form x02012-B, Medical Record Alleged Sexual Assault.

LIST OF REFERENCES

LIST OF REFERENCES

Adams, J., & Knudson, S. (1996). Genital findings in adolescent girls referred for suspected sexual assault. Arch of Pediatric and Adolescent Medicine, 150, 850-57.

Allison, J., & Wrightsman, L. (1993). Rape: The Misunderstood Crime. Newbury, CA: Sage Publications.

Arndt, S., & Goldstein, S. (1994). The SART/SANE Institute Participant Manual. Santa Cruz, CA.

Bienen, L. (1981). Rape III - National development in rape reform legislation. Women's Rights Law Reporter, 191, 174.

Bullock, L. (1993). Nursing interventions for abused women on obstetrical units. AWHONN'S Clinical Issues, 4 (3), 371-77.

Cartwright, P., Moore, R., Anderson, J., & Brown, D. (1986). Genital injury and implied consent to alleged rape. Journal of Reproductive Medicine, 31, 1043-44.

Cohen, L., Donohue, J., & Kovener, M. (1996). A SANE approach to treating sexual assault survivors in Colorado: Utilizing sexual assault nurse examiners. Denver, CO: Colorado Coalition Against Sexual Assault.

Emans, S., Woods, E., Flagg, N., & Freeman, A. (1987). Genital findings in sexually abused, symptomatic and assymtomatic girls. Pediatrics, 79(5), 778-85.

Emergency Nurses Association, (1996). Treatment of sexual assault survivors: Position statement. Des Plaines, IL.

Epstein, J., & Langenbahn, S. (1994). The criminal justice and community response to rape. National Institute of Justice: Issues and Practices, May, 55-56.

Fawcett, J. (1997). The Neuman systems model: Reflections and projections. Nursing Science Quarterly, 10:1, 18-22.

Geist, R. (1988). Sexually related trauma. Emergency Medicine Clinics of North America, 6, 439-66.

Geltz, R., & Walton, D. (1996, June 5). A victory against sex crimes. Long Beach Press, p. A4.

Hachbaum S. (1987). The evaluation and treatment of the sexually assaulted patient. Emergency Medicine Clinics of North America, 5, 601-22.

Hadad, D., & Krieger, G. (1996). Surviving, healing, growing. A Handbook for Survivors of Sexual Assault. Brochure from the Michigan Coalition against Domestic and Sexual Violence. Okemos, MI.

Hainsworth, D. (1996). The effect of death education on attitudes of hospital nurses toward care of the dying. Oncology Nursing Forum, 23, 963-7.

Hicks, D. (1990). Sexual assault. American Journal of Obstetrics and Gynecology, 137, 931-5.

Hinds, C. (1990). Personal and contextual factors predicting patients' reported quality of life: Exploring congruency with Betty Neuman's assumptions. Journal of Advanced Nursing, 15, 456 462.

Koku, R. (1992). Severity of low back pain: A comparison between participants who did and did not receive counseling. AAOHN Journal, 40, 85-89.

Ledrey, L. (1992). The sexual assault examination: Overview and lessons learned in one program. Journal of Emergency Nursing, 18(3), 223-30. Ledrey, L., & Simmelink, K. Efficacy of SANE evidence collection: A Minnesota study. Journal of Emergency Nursing, 23(1), 32-34.

Lenahan, L., Ernst, A., & Johnson, B. (1998). Colposcopy in evaluation of the adult sexual assault victim. American Journal of Emergency Medicine, 16, 183-84.

Lipscomb, G., Muram, D., Speck, P., & Mercer, B. (1992). Male victims of sexual assault. JAMA, 267, 3064-3066.

Moss, C., Hosford, R., & Anderson, W. (1979) Sexual assault in prison. Psychology Report, 44, 823-28.

National Institute of Justice. (1994). The criminal response to rape (Contract Number OJP-89-009). Washington, DC: U.S. Department of Justice Issues and Practices.

National Institute of Justice. (1994). Focusing on the offender's forceful conduct: A proposal for the redefinition of rape laws (George Washington law review 56: 399, 415-16 citing model penal code 213.1 comment @ 303). Washington, DC: Wicktom.

National Judicial Education Program to Promote Equality for Women and Men in the Courts. (1994). Understanding sexual violence: The judicial response to stranger and non-stranger sexual assault (Sexual Assault Tab) Washington, DC.

Neuman, B. (1974). The Betty Neuman health-care systems model: A total person approach to patient problems. In J. Riehl & C. Roy (Eds.), Conceptual model for nursing practice (pp. 119-131). New York: Appleton-Century-Crofts.

Neuman, B. (1982). The Neuman systems model: Applications to nursing education and practice. Norwalk, CT: Appleton-Century-Crofts.

Neuman, B. (1989). The Neuman systems model (2nd ed.). Norwalk, CT: Appleton & Lange.

Peipert, J., & Domagalski, L. (1994). Epidemiology of adolescent sexual assault. Obstetrics and Gynecology, 84, 867-71.

Rambow, B., Adkinson, C., Frost, T., & Peterson G. (1992). Female sexual assault: Medical and legal implications. Annals of Emergency Medicine, 21(6), 727-31.

Ramin, S., Satin, A., Stone, I. & Wendel, G. (1992). Sexual assault in postmenopausal women. Obstetrics & Gynecology, 80, 860 64.

Rimsza, M., & Niggermann, E. (1982). Medical evaluation of sexually abused children: A review of 311 cases. Pediatrics, 69, 8-14.

Satin, A., Hemsell, S., Stone, I., Theriot, S., & Wendel, G. (1991). Sexual assault in pregnancy. Obstetrics and Gynecology, 77, 710-14.

Senate Judiciary Committee Majority Staff, (1997, Summer) Response to rape: Detours on the road to equal justice (Sexual Assault Tab). Washington, DC.

Slaughter, L., & Brown, C. (1992). Colposcopy to establish physical findings in rape victims. American Journal of Obstetrics and Gynecology, 166, 83-86.

Slaughter, L., & Brown, C. (1991). Cervical findings in rape victims. American Journal of Obstetrics and Gynecology, 164, 528 29.

Slaughter, L., & Shackleford, S. (1993). Types and sites of rape injuries compared to women having consensual intercourse. Paper presented at the meeting of the American College of Obstetrics and Gynecology, Washington, DC.

Stermac, L., Du Mont, J., & Kalemba, V. (1995). Comparison of sexual assaults by strangers and known assailants in an urban population of women. Journal of Canadian Medical Association, 153, 1089-94.

Taggart, L., & Mattson, S. (1996). Delay in prenatal care as a result of battering in pregnancy; Cross-cultural implications. Health Care for Women International, 17(1), 25-34.

Tintinalli, J., & Hoelzer, M. (1985). Clinical findings and legal resolution in sexual assault. Annals of Emergency Medicine, 14, 447-53.

U.S. Department of Justice, Federal Bureau of Investigation. (1988). The prevalence of sexual assault: A survey of 2404 puerperal women (United States Government Printing Office). Washington, DC.

Warshaw, R. (1988). I never called it rape. New York: Harper and Row.

White, C., Janicke, D., Braen, G., & Pacos, A. (1998). The sexual assault exam: Emergency physicians practice trends. Annals of Emergency Medicine, 32:3.