HEALTH CARE–BASED INTERVENTIONS FOR WOMEN WHO HAVE EXPERIENCED SEXUAL VIOLENCE

A Review of the Literature

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Thirty publications that evaluated health care-based interventions for women who experienced sexual violence were reviewed. The findings highlight that clinicians often need training in the provision sexual assault care, and that not all emergency departments have sexual assault care protocols. Studies examining effectiveness found that Sexual Assault Nurse Examiner programs are very helpful, that health care-based sexual assault treatment settings attract more women than do forensic-based settings, that sexual assault survivors often prefer a combination of medication and counseling treatment, and that preexam administration of a video explaining the collection of forensic evidence may reduce women's stress during the procedure. Studies on postexposure HIV prophylaxis found that many women did not complete the treatment regimen, often because of side effects. Emergency contraception to prevent postrape pregnancy is not consistently offered to women. Only one study reported on abortion as part of the range of sexual assault services.

Key words: *health services; rape; sexual assault; violence; women*

VIOLENCE AGAINST WOMEN, including sexual violence, is an important global health problem that exacts a high burden of suffering. Throughout the years, numerous interventions have been developed to respond to the needs of women who have experienced sexual assault. Many of these programs are based in health care settings, including hospital emergency departments, women's clinics, and physicians' offices. The goal of this literature review was to summarize the lessons learned from empirical investigations that examined health care–related interventions for women who experienced sexual violence. This project was part of a larger Latin American initiative led by Ipas (an international reproductive health organization)

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KEY POINTS OF THE RESEARCH REVIEW

- Despite the high prevalence of sexual violence globally, relatively few (30) publications were located that focused on health care–based services for women who have experienced sexual assault, with most of these studies being set within the United States.
- Although clinicians with training concerning sexual violence provide better care to women who have been sexually assaulted, few clinicians have received such training.
- Sexual Assault Nurse Examiners (SANEs) are an important resource in sexual assault assessment and/or care, including the conduct of physical exams and evidence gathering.
- Showing a video that describes the forensic sexual assault exam may reduce women's stress concerning the procedure.
- Approximately one half of sexual assault survivors prefer a dual treatment regimen of medication and counseling.
- Although some studies described the provision of emergency contraception to prevent postrape pregnancy, only one study reported on abortion as part of the range of sexual assault services offered to women.
- Many sexual assault patients do not complete sexually transmitted infection (STI)/HIV postexposure prophylaxis treatment regimens, often because of side effects.

to evaluate work conducted in the region on health sector–based interventions for sexual violence survivors.

METHOD

Multiple methods were used to locate publications concerning research and/or evaluation reports focused on health care–based interventions for women who experienced sexual violence. This included conducting computerized literature searches in various databases using a variety of pertinent key words (e.g., *sexual assault, rape*, etc.), examining articles that had previously been collected by the authors that focused on sexual violence, and contacting leaders in the field of violence against women asking them to nominate articles for review.

The identified publications were included in the literature review if they met several criteria. The publication had to have been: (a) written in English or Spanish; (b) published between January of 1990 and June of 2005; (c) empirical in nature, presenting research and/or evaluation findings; and (d) focused on health care services concerning women who had experienced sexual violence. Given that our review focused on services for women, the reviewed study samples could be exclusively adult women, samples of women plus others (e.g., adolescents, men, etc.), or samples of clinicians who served women. Furthermore, our focus on health care services included studies that examined services for sexual assault survivors that were set within a hospital or health care clinic, and the training of health care workers concerning the provision of care for those who have been sexually assaulted. The review did not include studies that were set in other types of care settings (such as psychology clinics) or studies that primarily focused on legal outcomes of sexual assault survivors seen by care providers. In addition, articles and/or reports were excluded from review if they were secondary data analyses of survey data that did not focus on sexual violence.

A data abstraction form was developed to review the selected publications. The form collected information concerning the location of the study and the eligibility criteria, the study design and sample, the intervention examined, the measures and indicators used in the study, and the study results. The reviewed publications were then classified into five groups, with group membership determined by the focus of the study and/or the study design (e.g., studies that examined sexual assault training programs for clinicians, studies that surveyed clinicians who assess/care for those who have experienced sexual assault, etc.).

RESULTS

The search procedure located 2,107 abstracts of publications and/or reports that were potentially eligible for inclusion in the literature review. One hundred and twenty-two (6%) of these abstracts appeared that they might meet

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the inclusion criteria; therefore, the entire publication was located for more complete examination. Thirty (25%) of the 122 publications met the inclusion criteria and were reviewed. Most of these publications focused on women in the United States, even though the literature search was not restricted to U.S. women.

The reviewed 30 publications fell within the following five categories: (a) studies that examined sexual assault training programs for clinicians (2 studies); (b) studies that surveyed clinicians who assess and/or care for sexual assault survivors (7 studies); (c) studies that compared two methods of delivering services to sexual assault survivors (7 studies); (d) studies that focused on postexposure prophylaxis for sexual assault survivors (5 studies); and (e) descriptive and follow-up studies describing the patients seen and/or services provided at health care–based sexual assault services (9 studies). Each of these groups of studies is now described.

Studies That Examined Sexual Assault Training Programs for Clinicians

Two of the reviewed studies were concerned with sexual assault training programs for clinicians, with one of these studies conducting a needs assessment prior to the implementation of a training program and the other examining the impact of a training program. More specifics concerning these studies are presented below, with the needs assessment study being described first.

Guedes, Bott, and Cuca (2002) conducted a needs assessment prior to integrating gender-based violence screening and referral services into existing sexual and reproductive health services in particular clinics in the Dominican Republic, Peru, and Venezuela. Information was collected from a variety of sources (79 health care clinicians and unspecified numbers of clinic managers and clinic staff). The findings from interviews with clinicians found that 53% of clinicians felt that women's inappropriate behaviors provoked their husbands' aggression, while 41% felt that some adolescents provoke sexual assault because of inappropriate conduct. However, 94% of the clinicians indicated that they had as much responsibility to ask about violence as to ask about other clinical problems. The findings from clinic managers showed that some clinics could be improved in terms of the resources they have concerning violence against women (e.g., only 5 of 11 clinics had service directories concerning gender-based violence, etc.).

Parekh, Currie, and Brown (2005) evaluated a sexual assault training program for medical doctors working in a forensic and medical sexual assault care center in Australia. The program trained seven doctors in many aspects of clinical care. Findings indicated that the doctors attended most of the training sessions. Posttraining interviews with the doctors and questionnaires completed by these same participants showed that all felt that their knowledge had improved and that the program was valuable.

In summary, these two studies focused on sexual assault training programs for clinicians found that such training was warranted and helpful. More specifically, the needs assessment study conducted in three Latin American countries found that some clinicians had negative attitudes toward sexual assault patients and therefore could benefit from education concerning sexual assault. The Australian study that examined the impact of a training program showed that clinicians generally found the training to be helpful.

Studies That Surveyed Clinicians Who Assess and/or Care for Sexual Assault Survivors

Seven studies surveyed clinicians who assess and/or care for sexual assault survivors. Four of these surveys were conducted with staff and/or directors of hospital emergency departments; one of the surveys was conducted with SANEs working in various settings; one was conducted with mental health care providers of a health maintenance organization (HMO), students who were in training to become counselors, and undergraduates; and one of the surveys was

conducted with nurses and doctors working in several South African provinces. Each of these studies is now described in more detail, with the studies of hospital emergency departments being presented first.

Azikiwe, Wright, Cheng, and D'Angelo (2005) conducted a Web-based (and also mailed) survey of program directors of emergency departments in 85 (48%) of all accredited U.S. teaching programs with pediatric emergency medicine and/or emergency medicine between March 2002 and February 2003. The emergency departments reported providing many types of services for rape survivors, with 60% routinely screening for STIs, 85% always providing counseling concerning emergency contraception (even though only 68% had institutional policies concerning this), and 65% offering nonoccupational HIV postexposure prophylaxis (even though only 55% had institutional policies concerning this).

Lewis, DiNitto, Nelson, Just and Campell-Ruggaard (2003) conducted a mailed survey of nurse managers who worked in 178 (97%) of the 184 hospital emergency departments in Ohio. In addition, site visits were conducted in 20 hospitals. Results of the survey found that 34% of respondents had specialized sexual assault training. The nurses' educational needs included training regarding testifying in court (91%), taking photos of injuries (82%), working with survivors' families (78%), cultural awareness (76%), medical record documentation (76%), and crisis intervention (71%). Ninety-six percent of the respondents were familiar with sexual assault evidence collection kits, 65% knew about the Ohio Department of Health protocol concerning sexual assault, 30% believed that their patients or their insurance companies were charged for the sexual assault protocol exam even though such billing is prohibited, 9% had implemented a SANE program, 8% had a countywide sexual assault response team, 8% had an in-house rape crisis program, 82% called on rape crisis programs, and 89% called in law enforcement. Emergency contraception or referrals were not provided by 14% of respondents, and 10% of respondents never took photos of injuries.

Rosenberg, DeMunter, and Liu (2005) conducted a cross-sectional telephone interview study of care providers (nurse managers, charge nurses, staff nurses and/or physicians) who worked at 54 of the 57 licensed emergency departments in Oregon between February and March of 2003 (one person provided information for each emergency department). They examined the availability of emergency contraception for female sexual assault patients and other patients who had not been sexually assaulted. They found that 15% of the emergency departments never offered emergency contraception to rape patients, 85% offered it some time, and 61% offered it routinely. Nine percent of the emergency departments did not have a written protocol concerning care for rape survivors, 39% had a written protocol that did not call for emergency contraception, and 57% had written protocols that included emergency contraception. In cases of patients who were not raped, 53% of the emergency departments left the decision as to whether to prescribe emergency contraception to the attending physician. Forty-four percent of the emergency departments had no staff with special training concerning sexual assault. Emergency departments were more likely to prescribe emergency contraception if they had written rape protocols calling for emergency contraception, and if they had staff trained in sexual assault services. Catholic hospitals were as likely as other hospitals to prescribe emergency contraception for raped patients; however, they were less likely than non-Catholic hospitals to allow physicians to prescribe emergency contraception for patients who had not been raped.

Bell, Jenkins, Kpo, and Rhodes (1994) conducted interviews concerning the provision of services for interpersonal violence (including sexual assault) with staff working in (or with) 48 Cook County Illinois hospital emergency rooms during 3 months of 1991. Respondents included emergency room staff, social service staff, and staff of hospital-based victims' services programs. All of the emergency rooms identified persons who had experienced violence by asking patients about how they received their injuries, sometimes using additional information provided in the police reports. All hospitals had standard operating procedures concerning sexual assault and child

abuse; however, only 6% could produce protocols concerning these services.

Cicancone, Wilson, Collette, and Gerson (2000) conducted a mailed survey of contact persons from 61 (66%) of 92 SANE programs set within U.S. hospitals and free-standing facilities during September of 1997. Seventy-four percent of the programs could report on the number of patients treated, and 23% were able to report the number and outcomes of prosecutions brought by the sexual assault survivors seen by their program. Ninety-seven percent offered pregnancy testing and emergency contraception, 90% offered prophylaxis for STIs, 93% offered someone other than the nurse examiner to provide emotional support, and 96% provided follow-up. The programs varied in terms of the other procedures that they offered to patients. Their exam times ranged from 1 to 8 hours with a median of 3 hours.

White and Kurpius (1999) conducted a study in the United States that surveyed 43 (56%) of the mental health care providers who worked at an HMO, as well as 78 students training to be counselors, and 74 undergraduates in general studies. All were administered the Attitudes Toward Rape Victims Scale (ARVS). Male care providers had more negative attitudes toward rape survivors than did female care providers; male undergraduates had more negative attitudes toward rape survivors than did female undergraduates; there were no differences in the attitudes toward rape survivors between males and females who were training to be counselors.

Christofides et al. (2005) interviewed 124 clinicians (doctors and nurses) from 31 randomly selected hospitals in nine provinces in South Africa. Findings focused on practitioners' attitudes concerning rape (68% thought rape was a serious medical condition); practitioners' knowledge concerning rape-related issues (30% had training concerning the care of rape survivors, 41% reported having a protocol for rape survivors in their hospital); practitioners' practices when treating rape survivors (96% routinely discussed HIV risk, 73% offered HIV tests, 61% offered counseling before HIV tests, 20% offered HIV postexposure prophylaxis, 71% offered pregnancy tests, 84% offered emergency contraception, 47% referred those who had been raped for counseling after the assault, 93% treated STIs; however, only 37% reported using the appropriate drugs for this treatment); and hospital facilities available for rape survivors (58% had private exam rooms, 44% had consent forms for evaluations, 8% had emergency clothing for patients). Practitioners who offered better quality care (such as offering HIV tests and counseling, STI treatment, forensic testing, referrals to psychological counseling, abortion counseling, etc.) were more likely to perceive rape as a serious medical problem, to have more experience in caring for rape survivors, and to have previously worked in a clinic with a rape treatment protocol.

In summary, taken together, the studies focused on emergency department care for sexual assault survivors found that not all departments had written protocols concerning required care, few emergency department staff had specialized training concerning sexual assault (although many desired such training), and emergency contraception is not always offered to sexual assault patients. The other studies of clinicians provided a variety of information. For example, the survey of U.S. SANEs found that appropriate sexual assault assessment and/or care was provided to the vast majority of patients, but that providers seldom knew about the legal outcomes of the event (prosecution of perpetrators, etc.). The study of mental health care providers and students found that males were more likely than females to have negative attitudes toward rape survivors. The study of South African clinicians found that care for sexual assault survivors could be improved in a variety of ways, and that practitioners who had more experience in caring for rape survivors offered better quality care and were more likely to view rape as a serious problem.

Studies That Compared Two Methods of Delivering Services to Sexual Assault Survivors

Seven studies compared two methods of assessment and/or care for sexual assault patients. Each of these studies will now be described, beginning with studies of the SANE program.

Stermac and Stirpe (2002) conducted a record review of 466 (90%) of 515 females who had been sexually assaulted and had been seen at a hospital-based sexual assault care center in Toronto, Ontario, Canada, during 1996 and 1997. Of the 466 patients, 210 (45%) were seen by SANEs and 256 (55%) were seen by physicians. Patients seen by the two types of care providers did not differ in terms of substance use prior to the assault (39% used alcohol and 10% used drugs). Patients seen by physicians were more likely than patients seen by SANEs to have had police contact (51% vs. 44%). SANEs and physicians provided similar assessment and/or care; however, the duration of patient contact was shorter for the SANEs (3.25 hrs) compared to physicians (4 hrs). SANEs had fewer services interruptions than physicians (20% vs. 25%), and fewer cases involving physical trauma and injuries.

Derhammer, Lucente, Reed, and Young (2000) conducted a clinical record review of 169 sexual assault patients seen at a hospital emergency department in Lehigh Valley, Pennsylvania. During 1996 and 1997, prior to the implementation of a SANE program, 130 patients were seen; 39 patients were seen in 1998, after implementation of the SANE program. Comparing the patients in the two groups (those seen before implementation of the SANE program and those seen after implementation of the SANE) found that the two groups of patients spent similar amounts of time in the waiting room, but that the SANE patients experienced longer examinations and generally received higher quality of care as indicated by having a greater percentage of completed consent forms, a greater percentage of completed physical exams, and a greater percentage of completed evidence kits for prosecution.

Nesvold, Worm, Vala, and Agnarsdottir (2005) compared records of 380 sexual assault survivors (94% female) who attended one of two types of sexual assault services: (a) traditional forensic centers in which the assaulted person first reports the assault to police and then the police refer the person to a forensic medical examiner (one center was located in Copenhagen and one was in Helsinki), and (b) multidisciplinary rape trauma services set within hospital or primary care settings (one center was located in Reykjavik and one was in Oslo). The data from Copenhagen were collected in 1994, whereas the data from the other three centers were collected in 1996. The results showed that greater percentages of persons seen at the forensic centers were seen soon after the assault compared to persons seen at the multidisciplinary centers (only one half of those seen at multidisciplinary centers were seen 24 hrs after the assault because some came in weeks later). Approximately one half of those assaulted seen in the multidisciplinary centers reported the assault to the police. Multidisciplinary centers saw more males than did traditional forensic centers. Significantly greater proportions of the female population at risk were seen in multidisciplinary centers compared to traditional forensic centers.

Roy-Byrne, Berliner, Russo, Zatzick, and Pitman (2003) examined records from 367 consecutive female (71%) and male (29%) adult sexual assault (47%) and physical assault (53%) patients seen at the emergency department of Harborview Medical Center in Seattle, Washington, from September 2000 through September 2001. They investigated patients' preferences for post-traumatic stress disorder (PTSD) treatment, specifically, counseling, medication, or both. Seventy-six percent of the patients were interested in receiving counseling, and 62% were interested in receiving medications, with 57% being interested in both. Medication was more likely to be preferred by females who were assaulted and those who were sexually assaulted. Counseling was more likely to be preferred by females who were assaulted, those who were sexually assaulted, those with a psychiatric history, and those whose life was threatened during the assault.

Resnick, Acierno, Holmes, Kilpatrick, and Jager (1999) compared two approaches of delivering care to females who presented to a hospital emergency department in the southeastern United States because of sexual assault. A quasi-randomized approach was used with 33 women receiving traditional care and 13 receiving traditional care plus a video. The video was given prior to the forensic exam and was designed to reduce the stress often associated with such exams by demonstrating the exam procedure and offering advice that could be helpful to

women in preventing postrape PTSD, depression, and substance abuse. Results showed that both groups of women were equally distressed prior to the exam; however, after the exam, the group who saw the video was less distressed and less anxious than the group who did not see the video.

Acierno, Resnick, Flood, and Holmes (2003) produced a second report concerning their study of two approaches to delivering care to females who presented to a hospital emergency department in the southeastern United States because of sexual assault. As previously described, the two conditions were traditional care and traditional care plus a video. In this report, a total of 269 patients were eligible for the study and 226 (84%) consented to the study, with 109 women being assigned to the traditional care condition and 117 to the traditional care plus video condition. Ninety-nine of the 117 women assigned to the video condition actually watched the video. Sixty-three (54%) of the 117 in the traditional care group completed an assessment of substance abuse 6 weeks after the assault, as did 61 (62%) of the 99 who watched the video. Comparison of the two groups assessed 6 weeks after the assault showed that those who watched the video were significantly less likely to abuse marijuana 6 weeks after the assault than those in the traditional care group; however, 6 weeks after the intervention, there were no statistically significant differences between the two groups in terms of alcohol abuse or hard drug abuse.

Resnick, Acierno, Kilpatrick, and Holmes (2005) did a third report concerning their study of two approaches of delivering care to females who presented to a hospital emergency department in the southeastern United States because of sexual assault. As previously noted, the two conditions were traditional care and traditional care plus a video. In this report, they had 244 eligible patients, with 205 (84%) who consented to participate and completed assessments after the sexual assault exams (97 in the video condition and 108 in the comparison condition). Approximately 60% completed assessments 6 weeks later, including 61 in the video condition and 62 in the comparison condition. At 6-week follow-up, marijuana abuse was less in the women using the videos; however, there was no difference between the two groups in terms of alcohol abuse or hard drug abuse. In addition, the two groups of women did not differ significantly in terms of PTSD at the 6-week follow-up; however, further subgroup analysis found that women with prior assaults were helped by the video.

In summary, these studies found that SANE programs are helpful in the assessment and/or care of sexual assault, that health care–based sexual assault treatment settings attract more sexual assault survivors than do forensic-based settings, that sexual assault survivors often prefer a combination of medication and counseling treatment, and that administration of a video before a sexual assault exam may reduce women's stress resulting from the exam.

Studies That Focused on Postexposure Prophylaxis for Sexual Assault Survivors

Five studies focused on postexposure prophylaxis (PEP) to prevent disease, including four focused on HIV PEP and one focused on antibiotic PEP to prevent and/or treat other types of STIs. Each of these studies is now described.

Garcia et al. (2005) conducted a prospective cohort study of female and male children and adults who had been sexually assaulted and who presented to a university hospital in Brazil during an approximate 4-year period. Of the 378 sexual assault patients seen during this time, 31 were excluded from the study, leaving 347 enrolled participants. Of the 347, HIV PEP was offered to 278 (80%), including 137 patients at the highest risk for contracting HIV who were offered a three-drug regimen and 141 patients at moderate risk for contracting HIV who were offered a two-drug regimen. Sexual assault survivors who were at low risk for contracting HIV were not offered HIV PEP. Although all survivors offered PEP accepted it, compliance to the treatment regimens and follow-up was poor in both treated groups, especially in the group using three drugs, because of side effects. No patients seroconverted during follow-up.

Linden, Oldeg, Mehta, McCabe, and LaBelle (2005) conducted a medical record review of 181

sexually assaulted women who presented to an emergency department in Boston over a 3-year period. HIV PEP was offered to 89 (49%) of the 181 women. Eighty-two (92%) of the 89 accepted the treatment, with most of them (95%) receiving a two-drug regimen. Only 18% of those accepting HIV postexposure prophylaxis completed a full month of treatment. No patients seroconverted during follow-up.

Myles, Hirozawa, Katz, Kimmerling, and Bamberger (2000) conducted a chart review of a consecutive sample of 376 adult male and female sexual assault patients who presented to a general hospital in San Francisco over a 20-month period. Four percent were HIV positive at presentation. Of the 354 patients who were HIV negative, 213 (60%) were offered HIV PEP. Of the 213, 69 (32%) accepted HIV PEP, with men being more likely than women to accept treatment. Women were more likely to accept HIV PEP if they were White, were not assaulted vaginally, and had housing. Only one half of those accepting HIV PEP returned a week later to continue additional postexposure prophylaxis and follow-up.

Weibe, Comay, McGregor, and Ducceschi (2000) reviewed the medical charts of 258 patients (mostly women) who presented for sexual assault to a hospital emergency department in Vancouver, British Columbia, Canada, over a 16-month period. Seventy-one (28%) of the patients accepted HIV PEP, and 187 (72%) declined it. Twenty-nine (41% of the 71 patients) returned to the clinic for follow-up and further medication. When those who did not return to the clinic were contacted by telephone, many reported that they did not take the medication because of the possible side effects.

Gibb, McManus, and Forster (2003) conducted a review of case notes concerning 53 females (older than age 16 years) who were seen for sexual assault at a sexual assault service set within a hospital in London between January 1, 1997 and June 30, 1999. Seventeen of the women were seen prior to January 1998 (when the Centers for Disease Control guidelines recommending antibiotic prophylaxis went into place), and only one (6%) of these women was offered antibiotic prophylaxis (she accepted). After the guidelines were in place, 24 (65%) of the 36 women seen were offered antibiotic prophylaxis. Among the total of 25 women who were offered prophylaxis, 88% accepted it. However, only 57% of the women completed the 2-week follow-up visit, and 30% completed the 3-month follow-up visit.

In summary, these findings show that the percentages of sexual assault patients offered prophylactic treatments varied greatly across health care settings (from 49% to 80%). In addition, the percentages of patients who accepted the prophylaxis when it was first offered to them varied (from 28% to 100%). All of the studies found that many who accepted PEP did not complete the treatment regimen, often because of drug side effects. In addition, many patients did not return to the health care setting for scheduled follow-up appointments.

Descriptive and Follow-Up Studies Describing the Patients Seen and/or Services Provided at Health Care–Based Sexual Assault Services

Nine studies described patients seen and/or services provided at health care–based sexual assault services. Each of these studies is now described.

Harrison and Murphy (1999) conducted a clinical record review of 48 (89%) of the first 54 adult female sexual assault patients seen during a 17-month period from 1994 to 1995 at a newly developed sexual assault service set within the Department of Genitourinary Medicine at St. Mary's Hospital in London. They described several aspects of service delivery (39% of the patients came to the clinic within the first week of being assaulted, 67% were self-referrals, 92% were walk-ins; STI screening was completed on 38% of the patients during the first months of the clinic's operation but increased to 84% in later months; 76% of patients had appropriate medico-legal documentation in the early months of the clinic's operation;, however, this increased to 90% in later months).

Kerr, Cottee, Chowdhury, Jawad, and Welch (2003) reviewed the clinical records of 676 patients (94% female) who had experienced sexual assault and had been seen from May

2000 through May 2001 at a newly instituted sexual assault service (the Haven) located in King's College teaching hospital in London. The patients are described in terms of aspects of the assault (52% of the patients did not know the perpetrator), injuries received (24% had genital injuries, 39% had physical injuries), referral type (21% were self-referrals, 79% were police referrals), and services delivered (31% were screened for STIs, 7% received prophylactic antibiotics, 30% received emergency contraception, and 5% received HIV prophylaxis).

Petrak and Campbell (1999) conducted a prospective study of 19 females (79% older than age 18 years) who presented for sexual assault treatment at a Department of Genitourinary Medicine at a hospital in London. They described the characteristics of the assault (all women experienced vaginal-penile penetration, 42% experienced anal and/or oral assault, 90% were physically restrained and/or forced), the relationship of the women to the perpetrator (74% of the women were acquainted with the perpetrator), and whether women reported the assault to the police (58% reported it). They also described aspects of the women's mental health; in particular, 90% of the women met the diagnostic criteria for PTSD, and the women had high mean levels of trauma-related intrusion and avoidance. In addition, the women demonstrated high mean levels of general distress, anxiety, and depression.

Riggs, Houry, Long, Markovchick, and Feldhaus (2000) conducted a prospective study of 1,076 females (96%) and males (4%) who presented because of sexual assault to a Level I trauma center emergency department in Denver, Colorado, over a 4-year period (1992-1995). They also conducted a retrospective review of the patients' hospital lab records concerning STIs and crime lab data concerning semen and sperm findings. They described the assault experiences in terms of a number of dimensions, including the type of assault (83% vaginal intercourse, 25% oral, 17% anal), the trauma experienced during the incident (67% general body trauma, 53% genital trauma, 20% no physical trauma), the relationship of the perpetrator to the assaulted person (39% strangers, 38% someone with an established relationship, 24% date rape by a new acquaintance), and the presence of sperm (sperm was detected in 13% of those assaulted via wet mount and was detected in 48% of those assaulted via crime lab investigation).

Sugar, Fine, and Eckert (2004) collected prospective data from clinicians who saw 819 females (age 15 years and older) who had been sexually assaulted and who presented at the emergency department of a King County hospital in Washington State. This work described characteristics of the women at presentation (26% had a psychiatric diagnosis, 10% were homeless, and 2% were pregnant), as well as features of the assault (21% experienced oral penetration, and 28% experienced anal penetration), resultant trauma (52% had general body trauma, 20% had genital-anal trauma, and 41% were without injury), timing of care (76% came in within 24 hours of the assault), substance use before the assault (52% used substances), the relationship of the perpetrator to the woman (62% were assaulted by an acquaintance, 12% by an intimate partner, and 23% by a stranger), and weapon use (24% had a weapon used against them). In addition, associations were examined to link various aspects of the attack to the resultant trauma and/or injury with the findings showing that general body trauma was associated with being hit and/or kicked, strangled, oral and/or anal penetration, and stranger assault. Genital-anal injury was more common among younger women, virgins, those assaulted anally, and those who came in for care early.

Jones, Rossman, Wynn, Dunnuck, and Schwartz (2003) reviewed the clinical records of 776 females who had been sexually assaulted and who presented to a Nurse Examiner Program that was affiliated with a hospital emergency department in Grand Rapids, Michigan, between January 1999 and December 2001. They compared the 329 adolescents (age 13 to 17 years) with the 437 adults (age 18 years or older). They found differences in the patterns of injuries (adults had more nongenital injuries and less anogenital injuries), the relationship of the perpetrator to the assaulted person (adults were less likely to be assaulted by an acquaintance or relative), the use of weapons or physical coercion during the assault (adults were more likely to experience assaults involving weapons or phys-

ical coercion), the timing of medical evaluation after the assault (adults sought care earlier), the number of assailants (adults were more likely to have multiple assailants), and the location at which the assault occurred (adults were less likely to be assaulted at home); however, there were no differences between adolescents and adults in terms of the type of sexual assault that they experienced or the likelihood of a police report being filed.

Magid et al. (2004) examined prospectively collected clinic records of 257 females who were sexually assaulted and who presented to a Level I trauma emergency department in a Colorado county: 102 who were seen during 1974 and 155 who were seen in 1991. There was a 60% increase in the number of women seen in 1991 relative to 1974, with most of the increase explained due to an increase in the number of acquaintance rapes. The two groups differed in terms of the types of assaults (fewer vaginal assaults in 1991 but more anal and oral in 1991), whether they experienced physical force during the incident (more physical force in 1991), the types of trauma experienced (more nongenital trauma in 1991), and the extent to which they received antibiotic prophylaxis and emergency contraception (more received these in 1991).

Roy-Byrne et al. (2004) conducted a follow-up study of patients seen for sexual or physical assault at the trauma center of the Harborview Medical Center in Seattle, Washington, between September 2000 and September 2001. Of the 546 persons presenting for assault during the study period, 56 (10%), including 46 women and 10 men, consented to the study. Data were collected when the patients presented to the clinic, 1 week after the assault, 1 month after the assault, and 3 months after the assault. The findings focus on 46 of the 56 participants, specifically, those who had the most complete follow-up information. These 46 patients experienced high levels of emotional distress when they first presented to the clinic. In addition, 57% had PTSD during the 1-month or 3-month follow-ups. The participants used many types of services within the 3 months after the assault (11% had inpatient stays for a physical problem, 13% had inpatient stays for an emotional problem, 33% had at least one visit to the emergency department, and 60% used mental health services). In addition, the patients' mental health symptoms showed significant improvement from the 1-month to 3-month follow-up.

Holmes, Resnick, and Frampton (1998) conducted a record review using two sources of information: (a) records from a hospital emergency department in Charleston, South Carolina, concerning 389 females who were sexually assaulted and who underwent evidentiary exams over a 31-month period (from January 1995 through June 1997) and (b) records from a sexual assault follow-up clinic that was attended by 122 (31%) of these women approximately 8 weeks after the assault. Few differences were found between those who returned for follow-up and those who didn't; however, those who returned for follow-up were more likely to have been assaulted in their home, whereas those who did not return for follow-up were more likely to have been assaulted by a perpetrator who had been using substances, and they were more likely to have syphilis. Descriptive information is provided concerning the women who returned for follow-up: 42% had physical complaints, although the findings of most general and gynecological exams were normal; 49% resumed sexual activities after the assault, with 10% of those who did having sex with multiple partners, and 26% consistently using condoms; 71% expressed fear during follow-up; 59% had sleep problems at follow-up; and 37% had a change in appetite.

In summary, five of the nine descriptive and follow-up studies that characterized the patients seen and/or services provided at health care–based sexual assault services described patients seen for sexual assault but did not compare different subgroups of patients or provide patient follow-up information. These five studies examined various sized samples (ranging from 19 to 1,076) and generally reported on the relationship of the perpetrator to the person assaulted, whether the women self-referred to the clinic or were referred by the police or someone else, the patients' injuries when they presented for assault, and the types of interventions provided to the patients. The findings from these studies are mixed, with no real consistent results concerning each of these areas; these inconsistencies

may well be due, at least in part, to differences in the study samples and methods. Two of the nine studies examined patients from one clinic but did some type of comparison. One of these studies compared adolescent patients to adult patients, finding numerous differences in terms of aspects of the assaults experienced and resultant injuries. The other of these studies compared patients who were seen during different years and found that there was a 60% increase in the number of patients seen for sexual assault and that the characteristics of assaults, the resultant injuries, and the services delivered differed during the two time periods. Only two of the nine reports included information concerning the follow-up of patients seen for sexual assault, with one of these investigations being a prospective follow-up study and the other being a review of medical records to examine patients' experiences over time. Both of these studies had follow-up information on a small subset of patients. One of the studies found that patients had high levels of mental health symptoms soon after the assault, but that these symptoms diminished over time, and the other study found that that there were few differences between patients who returned for follow-up and those who did not return.

DISCUSSION

This literature review examined 30 research publications concerning health care–based interventions for women who experienced sexual assault. Two (7%) of the 30 publications examined sexual assault training programs for clinicians, seven (23%) surveyed clinicians who assess and/or care for sexual assault survivors, seven (23%) compared two methods of delivering services to sexual assault survivors, five (17%) focused on PEP for sexual assault survivors, and nine (30%) were descriptive reports describing the patients seen and/or services provided at health care–based sexual assault services, with two of these studies including information concerning the follow-up of patients.

These studies provide significant information that enhances our understanding concerning the importance of clinicians' training, clinicians' attitudes, and health care protocols in ensuring that high-quality care is provided to women who have experienced sexual assault. For example, the findings of studies concerning sexual assault training programs for clinicians suggest that clinicians are often in need of such training, and that the clinicians who receive training benefit from it in a variety of ways. The studies that surveyed clinicians who provide care for those who have experienced sexual assault supported these findings showing that that not all hospital emergency departments had written protocols concerning required care, few emergency department staff had specialized training in sexual assault (although many desired such training), emergency contraception is not always offered to sexual assault patients presenting to emergency departments, SANE programs provide appropriate sexual assault assessment and/or care but do not always know the legal outcomes of a case, male health care providers may have more negative attitudes toward rape survivors than female providers, and clinicians who view rape as a serious problem and who have more experience caring for rape survivors offer better quality of care to those who have been sexually assaulted than do other clinicians (such as offering an HIV test and counseling, providing treatment for STIs, providing forensic testing, referring to psychological counseling, providing abortion counseling, etc.). Notably, abortion, when legal, as an option for women who become pregnant from rape was only mentioned in one of these studies.

The studies also supply helpful information concerning the effectiveness of different approaches to providing care for those who have been sexually assaulted. For example, the studies that compared two methods of delivering care to sexual assault patients found that SANE programs are helpful in sexual assault assessment and/or care (e.g., they administer the appropriate consent forms, conduct the appropriate physical exams, and gather evidence for prosecution), that health care–based sexual assault treatment settings attract more sexual assault survivors than do forensic-based settings, that more than one half of sexual assault survivors prefer a dual regimen of medication and counseling treatment, and that administration of a video before a sexual assault

clinical exam may reduce the stress of women waiting for these exams. Studies focused on one specific aspect of care, namely, PEP to prevent HIV and other STIs, found that the percentage of sexual assault patients offered these treatments varied greatly across the study settings, as did the percentage of patients accepting prophylaxis; however, the study results consistently found that many patients who accepted prophylaxis did not return for follow-up appointments or complete the treatment regimen (often because of drug side effects).

The nine studies that described patients seen at health care–based services for sexual assault patients did not show consistent findings when they examined the relationship of the perpetrator to the woman, whether the women self-referred to the clinic or were referred by the police or someone else, the types of injuries the patients had when they presented for assault, or the extent of various types of interventions provided to the patients. Many of these inconsistencies were likely due, at least in part, to differences in study samples and methods. One of these studies found differences between aspects of sexual assaults experienced by adolescents and adults, whereas another study found that the number of sexual assault patients increased over the years, with differences being seen in assault characteristics over time. Two of the studies included follow-up information concerning sexual assault patients (one via a medical record review and one via a prospective follow-up study); however, only a small subset of the patients who presented for care had follow-up information available. One of these studies found that patients had high levels of mental health symptoms early after the assault, but that these symptoms diminished over time, and the other study found that that there were few differences between patients who returned for follow-up and those who did not return for follow-up.

The findings of this report are best viewed in light of the methodological limitations of this literature review. First, even though a widespread search was conducted to locate empirical publications concerning health care–based services for women who experienced sexual assault, there is no doubt that some relevant publications were missed. Second, because this review was restricted to health care–based services, important research concerning sexual assault services that were offered in other types of settings (e.g., psychology clinics) were not included in the review. Finally, although a standardized review procedure was developed and used to review the publications that met the inclusion criteria, this is just one of many approaches that may have been developed; thus, other methods of review may have highlighted other aspects of the studies.

Despite the limitations of this literature review, the findings suggest some ideas concerning future research in this important area. First and foremost is the need for additional well-designed and implemented evaluations of health care–based interventions for women who have experienced sexual violence. Despite the effort to collect publications from experiences worldwide, relatively few were located in the literature. There were few studies that compared the effectiveness of two or more health care–based interventions for women who had been sexually assaulted. To provide the highest possible quality of care for patients, clinicians and researchers are urged to work together to develop, implement, and evaluate new approaches to caring for women who have experienced sexual assault. Using comparison groups is critical in such research if one is to determine whether or not the new approaches are more beneficial than traditional care.

Another concern is that few of these empirical studies examined the women's perspectives in terms of how they felt about the care that they received. What aspects of care did they view as helpful and what aspects did they view as harmful? The integration of qualitative patient assessments focused on these issues into quantitative studies may be useful.

It is clear that there is a dearth of longitudinal information concerning health care–based services for women who have experienced sexual assault. Only a few studies have retrospectively reviewed the health records of sexual assault patients over time, and fewer still have

conducted true prospective longitudinal studies in this area. In addition, the studies that have examined information that was collected over time (by either conducting a retrospective review of patient records or by conducting a prospective follow-up study) often suffer from attrition in the sense that many patients do not return for health care follow-up visits, and many patients do not return for their follow-up research assessments. However, it is interesting to note that one study found few differences between those who returned for follow-up and those who didn't; however, those who returned for follow-up were more likely to have been assaulted in their home, whereas those who did not return for follow-up were more likely to have syphilis and to have been assaulted by a perpetrator who had been using substances. Even though follow-up information on a subset of patients is helpful, the representativeness of the minority of patients who comply with follow-up is open to question. Therefore, much is known about sexual assault patients when they first present to health care settings; however, less is known concerning what happens after the first health care visit.

It is interesting to note that the studies of health care for sexual violence survivors focused on care provided fairly soon after the assault but did not examine health care provided to women long after the assault experience. This is despite the fact that we know that many women do not report sexual assaults to their health care providers soon after they happen. However, these women may experience negative sequela from such violence for many years; thus, health services provided in response to such long-lasting sequela are worthy of study.

Another finding was that almost all of the reviewed studies were set within a single health care setting, rather than being larger multicenter investigations. Although important information can be learned in studies of lone health care settings, these studies have some limitations. For example, even though sexual assault of women is a prevalent problem, the number of women seen within one health care setting within a time period that is reasonable for research study recruitment (e.g., one year) is generally small. Small samples pose challenges for statistical analysis, such as having inadequate power to conduct multivariable analyses so that important confounding variables can be taken into account. This may be responsible, at least in part, for the limited statistical analyses that appear in most of these studies.

Another issue is that many of the reviewed studies used assessment approaches that the clinicians or the researchers developed themselves, either for collection of clinical data or for use in a research study. Although these assessments may be quite appropriate, there is often a lack of information concerning the validity, or even the reliability, of these tools. Some of the studies did employ standardized instruments with documented psychometric properties. However, comparison across such studies is sometimes difficult because researchers choose different instruments to assess similar constructs and/or they choose to assess different constructs. Naturally there will be variation in the choice of research instrumentation depending on the research question being examined; however, when possible, researchers are encouraged to share a common set of assessment approaches when studying a particular topic to help make comparisons across studies feasible.

This review of the literature concerning health care–based interventions for women who have experienced sexual violence found that there have been a variety of research investigations regarding this topic. These studies have greatly enhanced our understanding concerning this important problem and how clinicians respond to women who have been sexually assaulted. Researchers and practitioners are encouraged to continue this important work, and are urged to undertake studies that compare the effectiveness of different approaches for responding to sexual violence within the health care sector, assess women's feelings and opinions concerning the types of care that they receive, collect prospective longitudinal data to document how women fare in the aftermath of treatment for sexual violence, employ multiple centers and large sample sizes, and use a thoughtful selection of standardized instruments with documented sound psychometric properties.

IMPLICATIONS FOR PRACTICE, POLICY, AND RESEARCH

- Given that clinicians trained in sexual assault provide better quality care for women who have been sexually assaulted, training for health care–based providers in the area is encouraged.
- Given the global nature of sexual violence and the paucity of research evaluating health care–based interventions for sexual violence survivors, especially studies set outside of the United States, more research is encouraged on this important topic.
- Because few studies have compared the effectiveness of two or more health care–based interventions for women who had been sexually assaulted, clinicians and researchers are urged to work together to develop, implement, and evaluate new approaches to caring for sexual assault patients.
- Because research concerning health care–based services for sexual assault survivors has seldom examined the patients' perspectives in terms of how they feel about the care that they receive, the integration of qualitative patient assessments focused on these issues into quantitative studies may be useful.
- Because there is a dearth of longitudinal information concerning health care–based services for women who have experienced sexual assault, such research is encouraged.

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SUGGESTED READINGS

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