



## Research Reviews

### AFN Journal Club Research Reviews

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### AFN Journal Club Research Reviews

The AFN Journal Club meets regularly to review the quality of the evidence available to support our clinical practice. This is a core requirement of professional practice.

#### AFN Journal Review Criteria

- Evidence tables are for the review of studies that may have implications for clinical practice.
- All articles on this table have been reviewed by the AFN Journal Club.
- Abbreviations are listed in the legend following the reviews.

#### Melnik Levels of Evidence (Melnik & Fineout-Overholt (2015))

- **Level 1** - Systematic review & meta-analysis of randomized controlled trials; clinical guidelines based on systematic reviews or meta-analyses
- **Level 2** - One or more randomized controlled trials
- **Level 3** - Controlled trial (no randomization)
- **Level 4** - Case-control or cohort study; correlation design; examines relationships
- **Level 5** - Systematic review of descriptive & qualitative studies
- **Level 6** - Single descriptive or qualitative study; does not examine relationships
- **Level 7** - Expert opinion

## Legend

ALS= Alternative Light Source; AVS= Absorption Visibility Scale; BVS= Bruise Visibility Scale; CPS= Child Protective Services; ER= Emergency Room; FN=Forensic Nurse; HCP= Healthcare Provider; HT= Human Trafficking; HX= history IPV= Intimate Partner Violence; ID= Intellectual Disability; LGBTQIA= Lesbian, Gay, Bisexual, Transgender, Queer/Questioning, Intersex, Asexual; LE= Law Enforcement; MFE= Medical Forensic Exam; N/A=Not Available; NP=Nurse Practitioner; PED= Pediatric Emergency Department; POC= People of Color; P-SANE= Pediatric Sexual Assault Nurse Examiner; SA=Sexual Assault; SAK= Sexual Assault Kit; SANE= Sexual Assault Nurse Examiner; STI=Sexually Transmitted Infection; TBI= Traumatic Brain Injury

## Completed Reviews

Rossman L, Solis S, Ouellette L, Kolacki C, Jones JS. (2020). *Colposcopic genital findings in female sexual assault victims: Relationship to prior sexual intercourse experience*. American Journal of Emergency Medicine; ePub(ePub):ePub DOI: 10.1016/j.ajem.2020.10.059

**Literature Review.** One reference from 2017; everything else older but literature on this topic is scant.

**Design/Method/Fidelity.** Retrospective chart review. Method- not easy to follow; missing headings. Data extraction obtained by two NPs (interrater reliability likely high) but not clear who did the actual exams

**Sample/Setting.** 12 years and older; 4 downtown ERs that referred to this clinic. Criteria was specified; exclusions- declining MFE, multiple assailants, consensual intercourse more than 72 hrs prior, lack of penile penetration (vaginal or rectal). Inclusions- 12 years or older, female, consenting to MFE. Representative- limited to the urban ERs; majority were white, mean age 17-26. Selection bias- none noted; no attrition

**Analysis.** . Chi Square and ANOVA

**Results/Limitations.** P value less than 0.001. Interrater reliability of the data abstraction was excellent, with a median kappa statistic of 0.88. Limitations- no control for the clinical evaluations by different examiners, and it may be that the documentation was not uniform (reporting bias). Also women were included only if they agreed to a forensic examination and evidence collection (selection bias). A total of 684 genital injuries were described. Ninety-eight victims (32%) had single and 211 (68%) had multiple sites of injury. 72% percent of these injuries occurred at one or more of four sites: fossa navicularis, hymen, labia minora, and posterior fourchette. Patients without prior sexual intercourse experience had significantly more genital injuries documented (3.4 versus 1.9,  $P < 0.001$ ). The most common site of injury in this group was the fossa navicularis and hymen; the most common injury was lacerations.

**Clinical Significance/Practice Implications.** Type and site of genital trauma from SA in women vary in relation to prior sexual intercourse experience. Although the two

groups were comparable in terms of assault history and overall frequency of genital injuries, women without prior experience sustained more genital injuries typically involving the fossa navicularis and hymen. This may challenge police and prosecutors who often view a lack of injuries as a negative finding. Also, anogenital injuries in virgins were located not just at the hymen but equally on the fossa navicularis and labia minora; need to do a thorough anogenital exam

**Evidence Level.** Level 4

Hornor, G., Thackeray, J., Scribano, P., Curran, S. and Benzinger, E. (2012). *Pediatric sexual assault nurse examiner care: Trace forensic evidence, ano-genital injury, and judicial outcomes*. *Journal of Forensic Nursing*, 8: 105-111. <https://doi.org/10.1111/j.1939-3938.2011.01131.x>

**Literature Review:** 9 of 19 references within last 5 years; a few older ones are seminal works

**Design/Method:** A retrospective review of medical and legal records of all patients presenting to the Pediatric Emergency Room (PED) at Nationwide Children's Hospital with concerns of acute sexual abuse/assault requiring forensic evidence collection from 1/1/04 to 12/31/07. Easy to follow; clear headings.

**Sample/Setting:** Pediatrics age 1-20, both male and female, received care in the PED at Nationwide Children's Hospital, a large urban pediatric hospital in Midwest. The medical and legal records criteria include: 1. Assault within 72 hrs. 2. History of sexual abuse involving genital-genital, anal-genital, oral-genital, and/or digital-genital contact. 3. Injury to anus or genitalia appears acute and is concerning for sexual abuse/assault. 4. Reason to believe that acute sexual abuse/assault has occurred despite child/adolescent unable to give history. Representative: Not necessarily; Mostly adolescent; mostly Caucasian; from Midwest; urban hospital setting

**Analysis:** STATA statistical software. Descriptive statistics of the study population are reported. Univariate analyses to compare quality indicators prior to the Pediatric Sexual Assault Nurse Examiner (P-SANE) support vs. with P-SANE support in the PED

**Results/Limitations:** P-SANE support demonstrated greater likelihood of: identifying and documenting an acute and/or nonacute ano-genital injury (34% vs. 20%;  $p = 0.006$ ); evaluating and documenting pregnancy status (59% vs. 47%;  $p = 0.030$ ); and testing for *N. gonorrhoea* and *C. trachomatis* (95% vs. 80%;  $p < 0.0001$ ), when compared to pre-implementation of the P-SANE support. No significant difference in provider group was noted for the following: rape evidence kit positive for trace forensic evidence (P-SANE 27% vs. pre-implementation of P-SANE support, 26%;  $p = 0.807$ ); ability to identify perpetrator DNA profile from trace forensic evidence (P-SANE 20% vs. pre-implementation of P-SANE support 16%;  $p = 0.390$ ); and judicial outcomes (charges filed P-SANE 43% vs. pre-implementation of P-SANE support 38%;  $p = 0.339$ ).

Limitations: The quality indicators measured are somewhat narrow and do not

comprehensively measure acute SA care. Examples of other quality indicators not measured in this study include the following: time of care from ED admission to discharge, STI/pregnancy prophylaxis, referral to mental health counseling, and others. Judicial outcomes and forensic evidence kit results may be influenced by a number of factors unrelated to the type of health care provider performing the examination/rape evidence kit collection, including quality of the forensic evidence analysis at the crime lab.

**Clinical Significance:** P-SANEs play a vital supporting role in the care of child and adolescent victims of acute SA including the collection of trace forensic evidence, physical assessment including anogenital examination, STI/pregnancy testing and prophylaxis, providing emotional support, providing appropriate follow-up referrals, collaboration with CPS and LE, and court testimony. This study documented P-SANEs to be more likely to recognize and document an abnormal ano-genital exam finding and to evaluate for pregnancy and STIs, yet additional research is needed to fully document the impact of P-SANEs on patient care outcomes. Many studies look at legal/court outcomes; need to focus on patient care/clinical outcomes.

**Level of Evidence:** Level 4

Long E & Dowdell EB. (Jul 2018). Nurses' Perceptions of Victims of Human Trafficking in an Urban Emergency Department: A Qualitative Study. *Journal of Emergency Nursing*; 44(4):375-383. DOI: 10.1016/j.jen.2017.11.004.

**Literature Review.** 14 references less than 5 years; 10 are greater than 5 years. Many are position statements/opinions (and not actual research articles), which supports there are gaps in research.

**Design/Method:** Descriptive qualitative design; data collected during semi structured interviews. Clear and easy to follow; headers assist reader. Participation was voluntary; oral consent was deemed adequate.

**Sample/Setting:** 10 nurses from an urban ER that was a large, academic level I. Had to have BSN and worked at least 2 years in the ED. 4 males; 6 females, 7 had less than 10 years of experience. Not representative: only one nurse practicing as SANE, mostly Caucasian. Limitation that sample requirements were too general.

**Analysis:** Semi structured interviews using 12 open ended questions. Data saturation reached after 10 participants. Content analysis was used to analyze the data; interviews transcribed verbatim by first author and read/ confirmed by second author to ensure comprehensive examination of the data; interviews were recorded, transcribed, and thematic analysis was performed. Trustworthiness was addressed. Questions 1, 6, 7, and 10- not open ended

**Results/Limitations:** Six themes emerged from the interviews including: HT exists in the patient population; HT victims are “young, female, and foreign born”; all the ED nurses reported having worked with or screened a victim of violence; victims of violence were

viewed as patients who present as “sad and grieving”; prostitutes are seen as “hard and tough”; and ED nurses did not have education on human trafficking victims’ needs or resources. Limitations: explicit/implicit bias, small sample size, age ranges and experience, 1 SANE participant, mostly Caucasian and without LGBTQIA representation; no ER policy on HT

**Clinical Significance:** ED nurses need to be empowered with the tools and assessment skills to identify as well as provide care to these populations; ED nurses are in key positions to use current research and guidelines to advocate for a federal mandate to screen for these patients; develop HT policy and training

**Level of Evidence:** Level 4

Lynch, K. R., & Jackson, D. B. (2021). Firearm exposure and the health of high-risk intimate partner violence victims. *Social Science and Medicine*, 270, [113644].  
<https://doi.org/10.1016/j.socscimed.2020.113644>

**Literature Review:** 17 of 68 references in last 5 years; had references from 1986 and 1984 and 1989. Analyzing a lot of variables, so references covered a lot of broad topics.

**Design/Method:** Questionnaires: Participant physical health was assessed using a list of nine health problems based on health symptoms. The list also included the addition of a brain/head injury item given evidence of a high occurrence of head injuries among intimate partner violence (IPV) victims. Health problems included Diabetes, High Blood Pressure, Pain, seizures/Epilepsy, Heart Disease, Back Problems, Brain Injury/Concussion/Other Head Injury, Headaches/Migraines, and Stomach/Intestinal Problems. Method somewhat easy to follow, but analysis description was complex.

**Sample/Setting:** Participants (N = 215 women) were recruited through IPV shelters across six locations in South Texas. Participants must have been at least 18 years old and experienced IPV at some point in their life to participate. Most participants were living at the shelter. Participants completed a questionnaire available in both English and Spanish. 75 min questionnaire and participants were compensated with a \$20 gift card. Was not random sampling; was from one area of one state; was both urban and rural.

**Analysis:** Descriptive statistics, as well as OLS regression was employed to examine the association between both abuser firearm ownership and firearm related IPV and physical health problems. The association between partner firearm ownership and specific physical health problems is further explored by calculating the predicted probabilities of each of the physical health problems by partner firearm ownership while adjusting for the influence of covariates. The potential for measures of trauma (i.e., PTSD and sleep disturbances) to attenuate associations between partner firearm ownership and physical health problems examined using the Karlson-Holm-Breen (KHB) method

**Results/Limitations:** Both non-firearm IPV and partner gun ownership are both positively and significantly associated with physical health problems. Standardized coefficients reveal that these two measures – non-firearm IPV and partner firearm

ownership – are among the strongest predictors of physical health problems in the model, with age also exerting a robust effect on physical health problems. Partner firearm ownership is not significantly associated with all physical health problems, but it is significantly and positively associated with most of them, including pain, seizures/epilepsy, back problems, brain/head injury, and headaches/migraines. Predicted probabilities of pain, back problems, and headaches/migraines were especially high among participants with abusive partners who owned firearms. PTSD symptomatology and sleep disturbances attenuate the association between partner gun ownership and physical health problems by 40.60%. Results confusing/ambiguous at times; limitations including an inability to establish causal relationships between abuser firearm ownership, sleep disturbances, and health issues. Health questionnaires are self-reported rather than actual medical diagnoses and data was cross sectional. Might not be generalizable to victims in less severe IPV situations or non-shelter examples.

**Clinical Significance:** Consider that abusers did not have to use firearms explicitly for victims to experience harm and an abuser's potential access to a firearm has consequences distinct from abusive behaviors. Need more research on anxiety and depression, beyond PTSD, sleep disturbances, and health outcomes addressed on this study's questionnaires.

**Level of Evidence:** level 4

Scafide, K; Downing, N; Kutahyaloglu, N; Sebeh, Y; Sheridan, D; & Hayat, M (2021). Quantifying the Degree of Bruise Visibility Observed Under White Light and an Alternate Light Source. *Journal of Forensic Nursing*, 17 (1), 24-33.

**Literature Review:** 29 references. Older ones from 1979-2011; do not all seem to relate to research problem

**Design/Method:** Blunt force trauma to upper arm w/paintball gun from 20 feet. Bruises assessed 21 time points over 4 weeks, earliest was at 30 mins after first paintball trauma. Method easy to follow

**Sample/Setting:** Adults 18-65. Two University settings. Criteria identified: No skin lesion under white light on the area to be bruised, no reported health conditions or medication that impacts bleeding, no hx of delayed wound healing, upper arm circumference less than 24 cm. Mostly female (67%), mostly young (mean 24.6); split well between Caucasian and POC (half/half).

**Analysis:** SPSS & SAS Descriptive stats, Kappa for interrater reliability, ICC analysis for interrater agreement.

**Results/Limitations:** Satisfactory interrater agreement in both detection & visibility of bruises using ALS or white light. The proportion of agreement was over 90% for all assessments except when using ALS wavelengths with red filter (515 and 535), Nine of

the 240 observations fell outside the 95% confidence interval; of these 9 outliers, one rater was involved in 5 of them. Results are slightly muddy; scatter plots confusing. Limitations: lack of validated measure for assessing bruise visibility; did not assess the reliability of the raters' bruise size measurements.

**Clinical Significance:** Detailed, consistent, and precise documentation can contribute to better quality of care and preservation of evidence. Documentation should be reliable and accurate. FNEs should incorporate BVS and AVS instruments though more replication studies are recommended. Could/should implement table 6 into practice

**Level of Evidence:** level 2

### Reference

Melnyk, B.M. & Fineout-Overholt, E. (2015). "Box 1.3: Rating system for the hierarchy of evidence for intervention/treatment questions" in *Evidence-based practice in nursing & healthcare: A guide to best practice (3rd ed.)* (pp. 11). Philadelphia, PA: Wolters Kluwer Health.