The role of photographic and video documentation in the investigation and prosecution of child sexual assault

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Despite its widespread acceptance by medical investigators, the use of colposcopy to document ano-genital examinations after sexual assault allegations has attracted controversy. Concerns have been expressed about potentially negative effects arising from the misuse of photo-documentation with some arguing that colposcopic photo-documentation should not occur. We discuss the extent to which these concerns, so far as they relate to the medical examination of children and young people, are supported by the research evidence. We raise and answer four questions: are there negative impacts for children and young people from the use of colposcopy in the medical assessment of suspected child sexual assault? Does the use of colposcopy improve the reliability of the medical assessment? Does the use of colposcopy affect the outcomes in trials, and in particular, criminal prosecutions? Is there any legal or medical benefit to the retention of photo-documentation when the ano-genital examination reveals no abnormalities? We discuss whether the current practices in the use of colposcopy should continue, and what reforms to the law might be needed to protect against the misuse of photo-documentation of ano-genital examinations.

INTRODUCTION

Photographic documentation of the ano-genital region is an established aspect of practice in the medical assessment of children and young people when there is a suspicion of child sexual abuse. Such photo-documentation is normally collected by means of a colposcope (described below). This provides a non-intrusive means of magnification and photographic documentation of the genital and perianal area.

In spite of its widespread acceptance by medical investigators, the use of colposcopy has attracted some controversy. Concerns have been expressed about potential negative aspects arising from the use of photo-documentation. How does the child experience the photographing or videotaping of his or her ano-genital area? Are there particular issues when children have been photographed for pornographic purposes by the alleged perpetrator? Will the defendant be prejudiced if those photographs are shown to the jury? What is the impact on the victim if those photographs are made available to the accused for the purposes of her or his defence?

This article reviews the available research evidence in order to answer these and other questions and considers whether legal reforms are needed to better protect children from the unnecessary use, or misuse, of intimate photographic evidence in the criminal justice process.

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Background

Photo-documentation has long been seen as having both clinical and forensic benefits. It can eliminate the need for repeat examinations because the photographs can be shown to specialists for a second opinion; it is regarded as an excellent teaching tool, and can be useful in court proceedings, not least in aiding the examiner's recollection of what she or he observed at the time of a child's medical examination. Adams explains the process and the advantages of the colposcope over the use of a 35mm camera:[1]

> The colposcope, with a 35-mm camera and/or a video camera attachment, has several advantages over the camera with a macrolens … First, the colposcope is a medical instrument. It looks like a medical instrument; it does not look like a camera. When the examiner sits behind the instrument, either at the foot of the examination table or a few feet away from the child on the mother's lap, there is a barrier between the examiner and the child. When the examiner uses a camera, there is no perceived barrier and the child sees and knows that she or he is having her or his "private parts" photographed. If that child was photographed or videotaped by the alleged abuser, the child may need to be reassured that the clinical examination and photography is a very different situation. This is an easier argument to make when the camera is attached to a colposcope, rather than being handheld.
>
> Another advantage of photocolposcopy is that many systems enable the examiner to take photographs at several different magnifications, from 4x to 25x. A macrolens on a 35-mm camera does not have this capacity … In addition, most colposcopes can be dually equipped with both a video camera, for teaching other trainees (or the patient), and a 35-mm camera to take prints or slides for medico-legal documentation.

The timing for the collection of forensic evidence depends on the type of suspected assault.[2] Toxicology can be done on urine and blood within 72 hours and on hair up to six months. However, there is a narrow window of time in which physical evidence may be recovered from the body of a pre-pubertal child.[3] In one study of 273 children under 10 years who had been referred for assessment following alleged sexual assault, forensic evidence was obtained in 24.9% of cases; but all of them were examined within 44 hours of the assault, and over 90% of children with positive findings were seen within 24 hours of the assault. The majority of forensic evidence (64%) was found on clothing and linens. No bodily swabs were positive for blood after 13 hours. No sperm or semen was found after nine hours.[4]

It is very unlikely that any medico-scientific evidence will be recovered after 96 hours from the body of a pre-pubertal child.[5] For these reasons, such an examination is likely to be conducted only if the child or young person presents for assessment within the timeframe dictated by the type of assault or there are other reasons why an ano-genital examination might be medically indicated.

The concerns

The debates on the collection of forensic evidence, including photo-documentation, have not been confined to cases of suspected child sexual assault. Similar issues arise in relation to the collection of evidence in adult rape cases.[6] In a recent article, Spangaro and colleagues summarised the major

[1] J Adams, "The Role of Photo Documentation of Genital Findings In Medical Evaluations of Suspected Child Sexual Abuse" (1997) 2 *Child Maltreatment* 341, 341. See also D Templeton and A Williams, "Current Issues in the Use of Colposcopy for Examination of Sexual Assault Victims" (2006) 3 *Sexual Health* 5.

[2] NSW Police Force, *Guidelines for Collection of Forensic Specimens from Complainants or Suspects* (Forensic Services Group, Clinical Forensic Medical Unit, 2012).

[3] K Young et al, "Forensic Laboratory Evidence in Sexually Abused Children and Adolescents" (2006) 160 *Archives of Pediatrics & Adolescent Medicine* 585.

[4] C Christian et al, "Forensic Evidence Findings in Prepubertal Victims of Sexual Assault" (2000) 106 *Pediatrics* 100.

[5] C Jenny, J Crawford-Jakubiak and Committee On Child Abuse, "The Evaluation of Children in the Primary Care Setting When Sexual Abuse is Suspected" (2013) 132 *Pediatrics* e558.

[6] D White and J Du Mont, "Visualizing Sexual Assault: An Exploration of the Use of Optical Technologies in the Medico-legal Context" (2009) 68 *Social Science & Medicine* 1; P Tjaden, "A Comment on White and Du Mont's 'Visualizing Sexual Assault:

concerns about the use of photo-documentation when adults present to clinicians following a sexual assault.[7] They make five arguments against the use of photo-documentation, based mainly on the clinical experience of sexual assault counsellors:

(i) that the photographic evidence is unlikely to be of forensic value since cases typically turn on the issue of consent rather than penetration;

(ii) these intimate images could be potentially viewed by a wide range of individuals, including the defendant and the jury;

(iii) expansion of intimate photography may create expectations that this technique represents "best practice", which, in the authors' experience, is a disincentive for clinicians to undertake this kind of work;

(iv) there is a risk of re-traumatising victims not only as a consequence of the potentially objectifying process of being photographed, but also because of the humiliation that can result if images are provided to the defendant or used in court; and

(v) the routine use of colposcopy may deter victims from attending services.

While the authors confined themselves to offering arguments against the use of intimate photography in adult sexual assault cases, they noted that many of the same concerns apply to child victims.[8] However, in adult sexual assault cases, where consent is a key issue, ano-genital injury may result from consensual intercourse, even if this is uncommon.[9] For this reason, it is argued that evidence of ano-genital injury does not assist in demonstrating the lack of consent to sexual penetration for an adult victim. Nonetheless, such evidence may be sufficient to establish that sexual penetration occurred in the case of a child. As Brennan has observed:[10]

> The critical differences between adults and children lie in the legal status of consent to sexual engagement, the different physiology/anatomy of the genital tract, and the baseline injury associated with normal sexual activity.

Because it is difficult to resolve such arguments if reliance is placed only on clinical experience, anecdotes or unsubstantiated worries about potential deterrent effects, this article discusses the extent to which these concerns, so far as they concern the medical examination of children and young people, are supported by the research evidence. To answer this, the authors were commissioned by the Sax Institute, on behalf of NSW Kids and Families, to review the available literature on all aspects of the use of photo-documentation in sexual assault investigations.

THE RESEARCH EVIDENCE

The concerns expressed above can best be explored in terms of four questions. First, are there negative impacts for children and young people from the use of colposcopy in the medical assessment of suspected child sexual assault? Secondly, does the use of colposcopy improve the reliability of the medical assessment? Thirdly, does the use of colposcopy affect the outcomes in trials, and in particular, criminal prosecutions? Fourthly, is there any legal or medical benefit to the retention of photo-documentation when the ano-genital examination reveals no abnormalities? In light of these questions, consideration is given to the issue of whether the current practices in the use of colposcopy should continue, and if not, what reforms to the law might be needed.

An Exploration of the Use of Optical Technologies in the Medico-legal Context'" (2009) 68 *Social Science & Medicine* 9; T Gamble, "Thinking Outside The Box: Limiting The Collection of Rape Kit Evidence in Acquaintance Rape Trials" (2014) 20 *Cardozo Journal of Law & Gender* 743.

[7] J Spangaro et al, "Use of Intimate Photography in Sexual Assault Prosecution: Who Is Being Deterred?" (2014) *Psychiatry, Psychology & Law* 1-6.

[8] Spangaro et al, n 7, 4.

[9] I McLean et al, "Female Genital Injuries Resulting From Consensual and Non-Consensual Vaginal Intercourse" (2011) 204 *Forensic Science International* 27.

[10] P Brennan, "The Medical and Ethical Aspects of Photography in the Sexual Assault Examination: Why Does it Offend?" (2006) 13 *Journal of Clinical Forensic Medicine* 194, 196. In this article, Brennan identifies, and responds to, objections on ethical, medical, legal and technical/economic grounds.

Evidence about the negative impacts of colposcopic photo-documentation

It is not surprising that many children and adolescents seen in a medical setting as a result of suspected child sexual abuse may feel anxious or stressed. Sources of distress include the experience of abuse itself, the reaction of a parent or caregiver to the disclosure, the involvement of police and social workers, as well as apprehensions about the medical examination.

Four peer-reviewed studies published in the last 15 years have explored child and parent anxiety in relation to ano-genital examinations. Three were conducted in the United States and one in Australia.

The first by Mears and colleagues in the United States, explored adolescent girls' responses to video-colposcopy in the investigation of possible child sexual abuse.[11] Seventy-seven girls aged 11 to 18 years participated, with 51 returning for follow-up at three months. For 30% of the girls, the most recent abuse occurred within the last month, with 39% occurring between one month and one year and 31% occurring longer than one year. The intervention involved a standard medical examination using video-colposcopy with no control group. Parents were able to observe the monitor if they wished.

After this, the physician conducted a short educational session regarding genital anatomy, abuse issues and sexually transmitted infections with the patient (and presumably the parent).

Prior to the medical examination, adolescents were assessed for their anticipation of the medical examination, level of anxiety, responses to stressful situations via information-seeking or information-avoiding behaviours and knowledge of genital anatomy. After the examination and educational session, participants were again assessed for their perceptions of the medical examination and video-colposcopy and levels of anxiety. At three months' follow-up, participants were re-assessed for their knowledge of their reproduction and genital anatomy.

Overall, girls had significantly more positive reactions post-examination than before ($p < 0.001$), while anxiety levels decreased between pre- and post-examination ($p < 0.001$). Just over three-quarters of the girls chose to watch the examination on the monitor and most found it a positive experience. Girls who received special education (because they had an intellectual disability or other special needs) had more negative perceptions of colposcopy than other girls ($p < 0.005$). Information-avoiding behavioural coping styles were significantly associated with more positive anticipations of the medical examination, although there was also a trend for more negative perceptions of video-colposcopy. No significant age differences were found in this study after accounting for multiple comparisons. There was also no significant improvement in knowledge of genital anatomy at three months' follow up compared with pre-examination.

The second study by Marks and colleagues used a prospective quantitative and qualitative design to explore the expectations and emotional responses of 71 children (90% female) and 67 caregivers to an ano-genital examination (including colposcopy).[12] A group of 204 children who presented at the same hospital for suspected child sexual abuse were compared with the 71 child participants in terms of demographic, assessment and abuse details, but were not invited to participate in the study. Colposcopy was used in 25% of cases in the participant group. This was the only study that included an individual analysis of the impact of colposcopy directly on parental and child wellbeing.

Overall, children and caregivers did not find the medical examination as stressful as expected, while children were less distressed than their parents. Qualitative data indicated that parents' levels of distress were guided by their children's reactions, in that parents calmed down once they realised their children were not distressed. A lack of knowledge about the medical examination and having an older child (over 12 years old) were significantly associated with increased parental distress. The only significant association between the use of colposcopy and outcomes was that where colposcopy was used, there was less parental distress before the examination ($p < 0.01$). Although most parents

[11] C Mears et al, "Adolescents' Responses to Sexual Abuse Evaluation Including the Use of Video Colposcopy" (2003) 33 *Journal of Adolescent Health* 18.

[12] S Marks, R Lamb, and D Tzioumi, "Do No More Harm: The Psychological Stress of the Medical Examination for Alleged Child Sexual Abuse" (2009) 45 *Journal of Paediatrics & Child Health* 125.

expected their child to be stressed about the medical examination, only 66% of children reported being scared beforehand. One negative response was: "I didn't want to have it because last time there was a video." Another was: "Not actually ready for anything touching me down there and that it may hurt a bit." However, the authors reported that most negative responses referred to injections and blood tests and that "use of the colposcope and/or the knee-chest position were not associated with increased reports of distress".

The third study was conducted by Scribano and colleagues, who undertook a cross-sectional study of 175 child and parent dyads in the United States. They found that most children were not severely distressed by medical examinations for suspected child sexual abuse (which included colposcopy),[13] although the direct impact of the colposcopy procedure was not analysed separately. The research team reported that 17.1% of children were significantly distressed prior to the examination which decreased to 15.4% post-examination. There was a modest parent/provider-child agreement of the level of anxiety that children experienced.

Finally, a United States randomised controlled trial tested the impact of an educational video intervention on children's and parents' distress about ano-genital examinations (including colposcopy).[14] Sixty-nine participants and their caregivers were included in the study (35 = video intervention, 34 = control) at a hospital-based child protection unit with a follow-up period of six weeks. Most children were aged less than 12 years old (89.6%). The 20-minute video provided education on examination procedures, the investigation process, ways for parents to help their children in the future, and several relaxation strategies to use during the examination. Overall, the video intervention significantly increased caregiver knowledge and decreased stress during the medical examination. Although there was decreased distress from pre- to post-examination, there were no significant differences between groups who had the video education and those who did not. There was, however, no direct analysis conducted on the impact of the video intervention on colposcopy-related distress.

After interviewing the children and caregivers to better understand their impressions and reactions, Rheingold and colleagues found that there was limited awareness of the medical examination and its purpose.[15] While half of the caregivers and fewer than half of the children were worried about the examination, the greater a caregiver's knowledge of the medical examination, the more likely they were to be anxious before it. However, the reverse was true for children, in that knowledge of the examination was associated with decreased levels of anxiety. Again no direct analysis was conducted of knowledge or wellbeing effects directly from the colposcopy procedure.

In summary, these four studies provide no evidence of negative outcomes as a result of colposcopic examinations which ought to lead to restrictions in their use when a child presents with an allegation of child sexual abuse. Rather, it appears there may be some positive benefits in terms of being able to assure the child or young person that there has been no physical injury resulting from the abuse, nor any physical impairment into the future. However, care must be taken to provide appropriate information to the patient and to obtain consent. Some patients may be uncomfortable with the collection of photographic evidence, particularly if he or she has been photographed for pornographic purposes by the alleged perpetrator. Because each child or young person is different, we consider that particular issue is best managed by seeking patient consent in the normal way. It appears that most children, even if uncertain at first, can be reassured to undergo the medical examination

[13] P Scribano et al, "Multi-informant Assessment of Anxiety Regarding Ano-genital Examinations for Suspected Child Sexual Abuse (CSA)" (2010) 34 *Child Abuse & Neglect* 602.

[14] A Rheingold et al, "Video Intervention for Child and Caregiver Distress Related to the Child Sexual Abuse Medical Examination: A Randomized Controlled Pilot Study" (2013) 22 *Journal of Child & Family Studies* 386.

[15] A Rheingold et al, "The Relationship Between Knowledge and Child and Caregiver Distress During the Medical Examination for Child Sexual Abuse" (2013) 22 *Journal of Child Sexual Abuse* 552.

without any problems.[16] Nonetheless, examining practitioners need to ensure that the child is able to choose whether to be examined with a colposcope or not.[17]

Colposcopy and the reliability of the medical assessment

Turning now to our second question, the literature reveals that photo-documentation of clinical findings improves the likelihood of detecting ano-genital injury, improves the accuracy of diagnosis, and allows other experts to comment on the evidence even though they were not present at the actual examination.

One of the advantages of photo-documentation is the support it can provide for clinicians in rural hospitals as an aspect of telemedicine consultations.[18] For example, MacLeod and colleagues analysed 42 live telemedicine consultations in two rural hospitals in the United States.[19] The equipment comprised a video camera attached to a colposcope with zoom on both, feeding into a videoconferencing unit. This provided live interaction from parents, child and examiner using video and audio which was secure and encrypted. The mean duration of the consultations was 71 minutes. As a result of the teleconferencing, there were changes in interview methods (47%), the use of the multi-method examination technique (86%) and the use of adjunct techniques (40%). For acute assaults there were changes in the collection of forensic evidence (89%). Ranking of skills and telemedicine effectiveness was high, with a majority of cases scoring five or more on a 7-point Likert scale. This study shows that child abuse clinicians in a tertiary centre can use telemedicine to effectively make positive changes in paediatric sexual assault examinations, with significant implications for improving the quality of care received by children in rural areas without the same specialist resources.

The use of photo-documentation to aid peer review also improves the reliability of medical assessments. In one study, 70% of female genital examinations diagnosed by a paediatric emergency physician as abnormal were subsequently re-diagnosed on re-examination as normal by child abuse-trained physicians.[20] In another study, Adams and colleagues reported that a review of cases at least quarterly by a child sexual abuse expert using photo-documentation significantly increased the accuracy of diagnosis.[21]

The impact of photo-documentation on trial outcomes

In relation to the third question we posed in our review, the evidentiary utility of colposcopic images is likely to depend on the quality of those images. In one study, Pillai investigated the validity of opinions given by 27 doctors as evidence in 14 cases of alleged child sexual abuse in the United Kingdom. She found that photo-documentation was only performed in five out of the 14 cases. The photographs were available for review in four cases, but the "quality of the photographs was generally poor". In two cases "they were so poor that no opinion could be made about the anatomy from the images".[22]

[16] Christian et al, n 4.

[17] Adams, n 1; A Giardino and M Finkel, "Evaluating Child Sexual Abuse" (2005) 34 *Pediatric Annals* 382; D Laraque, A DeMattia and C Low, "Forensic Child Abuse Evaluation: A Review" (2006) 73 *Mount Sinai Journal of Medicine* 1138.

[18] S Miyamoto et al, "Impact of Telemedicine on the Quality of Forensic Sexual Abuse Examinations in Rural Communities" (2014) 38 *Child Abuse & Neglect* 1533.

[19] K MacLeod et al, "Using Telemedicine to Improve the Care Delivered to Sexually Abused Children in Rural, Underserved Hospitals" (2009) 123 *Pediatrics* 223.

[20] K Makoroff et al, "Genital Examinations for Alleged Sexual Abuse of Prepubertal Girls: Findings by Pediatric Emergency Medicine Physicians Compared with Child Abuse Trained Physicians" (2002) 26 *Child Abuse & Neglect* 1235.

[21] J Adams et al, "Diagnostic Accuracy in Child Sexual Abuse Medical Evaluation: Role of Experience, Training, and Expert Case Review" (2012) 36 *Child Abuse & Neglect* 383.

[22] Adams et al, n 21, 508.

Photographic deficiencies may include lack of clarity in details, "noise" in areas expected to be smooth, loss of information in highlights or darker areas, and inaccurate representation of colour.[23] For image quality to be high, the image must satisfy the intended purpose (usefulness) and be a precise representation of the crime scene (naturalness).[24]

While there is a body of literature that explores the impact of forensic evidence generally on the likelihood of prosecution, there are very few empirical studies that address the issue of whether photo-documentation of ano-genital examinations affects the outcomes in child sexual assault trials. There is also a body of literature on the relationship between ano-genital injury and the *likelihood* of prosecution, but much of this literature does not differentiate between findings for adults and children.

The limitations of the literature are seen in the study by Hansen and colleagues, who analysed cases involving 482 children referred to the police for a forensic medical examination in northern Denmark in order to determine whether or not abnormal ano-genital findings lead to a higher rate of prosecution and conviction, compared with normal findings.[25] While colposcopy was used to evaluate the ano-genital findings (classified as normal, non-specific, and abnormal), the authors did not state whether the photo-documentation, the written forensic report or both were used as evidence in subsequent trials. They found that 38% of the 426 girls and 20% of the 56 boys had abnormal ano-genital findings while 31% of the girls and 52% of the boys had normal findings. The legal outcomes were known in 440 cases. Of these, only 190 (43%) were prosecuted and 165 defendants (87%) were convicted.

Convictions were correlated with the age of the child, in that convictions increased with the increasing age of the child. Gender was also a predictor, in that defendants accused of abusing boys were more likely to be convicted. Duration of the abuse was another significant predictor for conviction. However, the authors found no relationship between abnormal ano-genital findings and the decision to prosecute or trial outcomes (conviction or acquittal).

Similar results were reported in a French study by Saint-Martin and colleagues, who analysed medico-legal reports in all sexual assault cases (756) reported in Tours during a seven-year period.[26] Of the 68.3% of cases involving children under 15 years, the authors found that genital trauma occurred in 6.8% of the girls and 6% of the boys. Various genital injuries were documented, including tears/lacerations to the hymenal membrane. Because colposcopy is not generally used at the Centre for Victims of Sexual Assault in Tours, it is assumed that photo-documentation of these injuries did not take place. Nonetheless, anoscopy was performed in 68% of cases where anal trauma was observed. Overall, 36.3% of all defendants were convicted, although the presence of bodily and/or genital trauma was not associated with conviction. The authors concluded that successful prosecution depended on the quality of the victim's testimony.

It may be that the differences in the legal systems in European countries account for the lack of correlation between ano-genital medical evidence and legal outcomes[27] since the results reported by Hansen and colleagues and Saint-Martin and colleagues differ from studies conducted elsewhere. In a study involving 497 children in a mid-western county in the United States, Palusci and colleagues retrospectively investigated the case outcomes of all children aged zero to 17 years referred for

[23] E Ernst, P Speck and Fitzpatrick J, "Usefulness: Forensic Photo Documentation After Sexual Assault" (2011) 33 *Advanced Emergency Nursing Journal* 29.

[24] Ernst, Speck and Fitzpatrick, n 23. See also F Laitinen, O Grundmann and E Ernst, "Factors that Influence the Variability in Findings of Anogenital Injury in Adolescent/Adult Sexual Assault Victims: A Review of the Forensic Literature" (2013) 34 *American Journal Forensic Medicine & Pathology* 286.

[25] L Hansen et al, "Medical Findings and Legal Outcomes in Sexually Abused Children" (2010) 55 *Journal of Forensic Sciences* 104.

[26] P Saint-Marten, "Analysis of 756 cases of Sexual Assault in Tours (France): Medicolegal Findings and Judicial Outcomes" (2007) 47 *Medicine, Science & the Law* 315.

[27] Similar results were reported by Hagemann and colleauges in relation to reported cases of rape (January 1997-June 2003) of women over the age of 16 in the Norwegian county of Sør-Trøndelag. Documentation of injuries was not associated with charges being laid: C Hagemann et al, "Impact of Medico-legal Findings on Charge Filing in Cases of Rape in Adult Women" (2011) 90 *Acta Obstetrics & Gynecology Scandanavia* 1218.

medical evaluation for possible child sexual abuse in two separate periods: 1991-1992 and 1995-1996.[28] While 17.4% of children had an abnormal examination finding, no information was given about the use of a colposcope during the examinations of the children. Nonetheless, the authors found that a positive ano-genital examination finding predicted issuance of a warrant, substantiation by Child Protective Services, and a finding of guilt, better than disclosure by the child or behavioural symptoms.

More recently, Jewkes and colleagues undertook a study to investigate the association between documented injuries, DNA and case progression through the criminal justice system in South Africa.[29] An analysis of a representative sample of 2,068 attempted and completed rape cases reported to 70 randomly selected Gauteng province police stations in 2003 found that 1,547 cases (85%) involved ano-genital examinations. Out of 771 suspects who were arrested, only 14% (209) of cases went to trial. Of those, 31 (14.8%) adult cases and 44 (21.1%) cases involving children resulted in a conviction. DNA evidence was available in only 22 cases, although the presence or absence of injuries was documented in all other cases. Although the authors found that documented injuries were not correlated with arrest, they were associated with the likelihood of children's cases (but not adult cases) being prosecuted. In adult cases, a conviction was more likely if there were documented injuries, whether non-genital injuries alone, ano-genital injuries alone, or both non-genital and ano-genital injuries. DNA was not associated with case outcome for either adults or children.

Gray-Eurom, Seaberg and Wears also sought to determine the association between physical evidence and legal outcomes for all sexual assault cases reported in Duval County, Florida, during a two-year period.[30] Variables included the age and race of the victim, evidence of trauma (body, genital or both), presence of sperm, weapon use, and whether the victim knew the assailant. While 821 sexual assaults were reported, 801 forensic examinations were performed with evidence of trauma in 202 of the examinations, although colposcopy was unavailable. A suspect was only identified in 355 (44%) of the 801 cases involving a forensic examination. Of those, 271 arrests were made while 153 defendants (56.5%) had charges dropped, 89 (32.8%) were found guilty, two (0.74%) were found not guilty, and 27 cases (10%) were pending or unavailable for review. Logistic regression analyses found that victims aged younger than 18 years, the presence of trauma (body, genital, or both), and the use of a weapon by the assailant were significantly associated with successful prosecutions.

Overall, these studies show that a positive medical finding of ano-genital injuries can assist in successful prosecutions and convictions in child sexual assault cases, although there is insufficient data to make that conclusion specifically about colposcopic photo-documentation. Similar findings have been reported in studies involving adult complaints of sexual assault.[31]

Another, less well-researched, advantage of photo-documentation is that it can help courts to identify false positives, that is, incorrect diagnoses by clinicians[32] as demonstrated by three United

[28] V Palusci et al, "Medical Assessment and Legal Outcome in Child Sexual Abuse" (1999) 153 *Archives of Pediatric & Adolescent Medicine* 388.

[29] R Jewkes et al, "Medico-legal Findings, Legal Case Progression, and Outcomes in South African Rape Cases: Retrospective Review" (2009) 6 *PLoS Medicine* e1000164. While the types of documented ano-genital injuries were discussed by the authors, the study appears to have relied upon paper records of clinical findings since no details were given about whether a colposcope had been used to document those injuries.

[30] K Gray-Eurom, D Seaberg and R Wears, "The Prosecution of Sexual Assault Cases: Correlation with Forensic Evidence" (2002) 39 *Annals of Emergency Medicine* 39.

[31] M McGregor et al, "Examination for Sexual Assault: Is the Documentation of Physical Injury Associated with the Laying of Charges? A Retrospective Cohort Study" (1999) 160 *Canadian Medical Association Journal* 1565; M McGregor, J Du Mont and T Myhr, "Sexual Assault Forensic Medical Examination: Is Evidence Related to Successful Prosecution?" (2002) 39 *Annals in Emergency Medicine* 639. For a review of the literature, see A Quadara, B Fileborn and D Parkinson, *The Role of Forensic Medical Evidence in the Prosecution of Adult Sexual Assault* (Australian Institute of Family Studies, 2013).

[32] M Pillai, "An Evaluation of 'Confirmatory' Medical Opinion Given to English Courts in 14 Cases of Alleged Child Sexual Abuse" (2007) 14 *Journal of Forensic & Legal Medicine* 503, 512.

Kingdom cases.[33] One of these cases, which involved care proceedings by a local authority, exemplifies the benefits of having multiple photographs or, better still, a video of the colposcopic examination. In *Newport City Council v GW*,[34] Masterman J dismissed the local authority's case that parents had failed to protect their three daughters from child sexual assault. He found that the allegation had been made on the basis of misdiagnosis by Dr M, a consultant paediatrician. Dr M had examined all three daughters after sexual abuse by an older male child was suspected in the youngest daughter. Dr M found that the youngest daughter, C, had a "gaping" vaginal opening and "grossly abnormal findings" of the child's hymen which indicated "clear signs of [chronic] vaginal penetration".[35] A second consultant paediatrician, instructed by the Children's Guardian, agreed with Dr M's findings, based on a single still colposcopy photograph taken by Dr M during the ano-genital examination of C. The parents sought the opinion of an internationally recognised expert in the field who examined the same photograph and found no abnormality. That view was endorsed by another expert who re-examined the youngest child and took a series of colposcopy stills. She also found no abnormality.

At the time of C's original examination, consultant paediatricians limited colposcopy photographs to one only because of storage problems and fears that more images could be used as pornography if they fell into the wrong hands. Videos were also not made for the same reasons.[36] As Masterman J observed, this practice meant that "[t]he single photograph taken by Dr M succeeded in misleading four paediatricians" compared to the final examination of C in which 14 colposcopic photographs demonstrated that there were no abnormalities. Masterman J concluded that if there had been "fuller use of the colposcope's capabilities in the first place", including videos, the proceedings by the local authority may never have been commenced.[37]

What are the legal or medical benefits of the retention of photo-documentation?

There are very few reported legal cases that have discussed the relevance and admissibility of photo-documentation of child sexual abuse injuries in Australia. Generally speaking, where positive, such evidence amounts to corroboration of a child's allegations of sexual abuse, while photo-documentation that does not reveal any ano-genital injuries is considered to neither exclude nor support the allegations of sexual abuse.[38] Nonetheless, expert medical evidence of sexual abuse "is very powerful" because, to the jury, it amounts to "real" evidence.[39] But if the physical findings have been misinterpreted, as Pillai found in the 14 criminal cases she reviewed in the United Kingdom, wrongful convictions may ensue, which may be grounds for excluding the evidence at trial.[40] In a situation where the prosecution seeks to adduce photo-documentation of ano-genital injuries, Pillai's study and the United Kingdom case law reveals that more than one colposcopic photograph ought to be adduced into evidence, although the best form of evidence of such injuries is video-documentation.[41]

[33] *Re Y (Child) (Evidence of Abuse: Use of Photographs)* [2004] 1 FLR 855; [2003] EWHC 3090 (Fam); *Newport City Council v GW* [2006] EWHC 3671 (Fam); *Leeds City Council v YX (Assessment of Sexual Abuse)* [2008] 2 FLR 869; [2008] EWHC 802 (Fam).

[34] *Newport City Council v GW* [2006] EWHC 3671 (Fam).

[35] *Newport City Council v GW* [2006] EWHC 3671 (Fam), [6] (Masterman J).

[36] *Newport City Council v GW* [2006] EWHC 3671 (Fam), [45] (Masterman J).

[37] *Newport City Council v GW* [2006] EWHC 3671 (Fam), [46].

[38] *R v H* [2012] SADC 182, [37] (Judge Beazley).

[39] Pillai, n 32, 513.

[40] See, for example, *Evidence Act 1995* (NSW) s 137.

[41] Adams et al, n 21.

Even when the medical evidence in a criminal case is not neutral, it may not be accepted as conclusive of a complainant's allegation of sexual abuse. In *R v APC*,[42] medical evidence of penetration and a vaginal infection was admitted in a child sexual assault trial. In this particular judge-only trial, in which the defendant was found guilty in relation to four out of five counts of sexual abuse, Judge Beazley stated:

> I accept the evidence of the medical witnesses. The combined evidence of the four medical practitioners is neutral in either establishing or excluding the commission of any of the counts … or any of the uncharged acts. I have no doubt, as found by Dr Kummerow, that there had been trauma to the hymen of SLC and that that trauma had been caused by a penetrative injury. It does not in any way assist in determining who or what caused that trauma or when it occurred. At its highest that evidence is consistent with the allegations of SLC. I remind myself that such evidence should not be treated as in any way bolstering the evidence of SLC.[43]

By comparison, in the great majority of cases, ano-genital examinations reveal no abnormalities, but this does not mean that sexual abuse has not occurred.[44] In one United States study of over 2,000 children referred for investigation of child sexual assault, most of the children had been examined within a week of the abuse, yet 95.6% of the children who reported abuse showed no physical abnormalities on the medical examination. Only 5.5% of the girls and 1% of the boys who reported penetrative intercourse had abnormal findings.[45]

These findings are unsurprising. Even where there is some penile contact, it may be between the labia majora and the thighs. Because penetration deep enough to tear the hymen is likely to cause significant pain to a pre-pubertal girl, perpetrators may avoid it to escape detection and to make it more likely that the girl will continue to acquiesce in the sexual contact.[46] In any event, it is possible for a tear in the hymen to heal without scarring, while the research is clear that healing of the ano-genital area in children is rapid.[47] For these reasons, even where there has been penetration of the vagina or anus of a child, it may not leave evidence of the abuse.[48]

One of the critical issues in the Australian case law concerns the admissibility of medical findings that are neutral or equivocal about whether or not sexual abuse has occurred. Is there any utility in presenting findings of a normal ano-genital examination to a jury? In *R v Dann*, the Crown explained to the New South Wales Court of Criminal Appeal why such evidence was often adduced:[49]

> Such evidence is commonly called in cases of alleged sexual assault whether the complainant is male or female. It is also common in these cases for the medical evidence to be "neutral". As often as not a medical opinion is given that the examination revealed circumstances consistent with sexual penetration, but also consistent with nothing untoward having happened. Not to call such evidence would leave a gap; an unexplained aspect of the circumstances which a jury would expect to be told about. If the Crown were not to call such evidence in cases such as the present it would almost invariably invite a submission to the jury from defence counsel to the effect that the Crown has neglected an important aspect of the case in not having the alleged victim medically examined.

[42] *R v APC* [2006] SADC 53.

[43] *R v APC* [2006] SADC 53, [71] (Judge Beazley), referring to *R v Dann* [2000] NSWCCA 185. Compare *R v Mittiga (No 2)* [2010] SADC 68.

[44] *Hemiro v Sinla* [2009] FamCA 181, [175], Brown J stated that "a normal ano-genital examination does not preclude sexual abuse". See also *R v H* [2012] SADC 182, [37] (Judge Beazley).

[45] A Heger et al, "Children Referred for Possible Sexual Abuse: Medical Findings in 2384 Children" (2002) 26 *Child Abuse & Neglect* 645.

[46] Authors of one review article note that "children are rarely subjected to great violence" because a perpetrator who wants to maintain access to a child is careful to avoid attracting attention: E Sakelliadis, C Spiliopoulou, and S Papadodima, "Forensic Investigation of Child Victim with Sexual Abuse" (2009) 46 *Indian Pediatrics* 144, 148.

[47] J McCann et al, "Healing of Hymenal Injuries in Prepubertal and Adolescent Girls: A Descriptive Study" (2007) 119 *Pediatrics* 1094; C Berkowitz, "Healing of Genital Injuries" (2011) 20 *Journal of Child Sexual Abuse* 537.

[48] D Kerns, "Triage and Referrals for Child Sexual Abuse Medical Examinations: Which Children are Likely to Have Positive Medical Findings?" (1998) 22 *Child Abuse & Neglect* 515.

[49] *R v Dann* [2000] NSWCCA 185, [14].

However, the Court considered that it was "regrettable" that court time and the time of busy professionals should be wasted on evidence with "such limited materiality".[50] As a result, a practice has developed, following the suggestion of the Court of Criminal Appeal in *Dann's* case,[51] that the Crown and defence agree "that the evidence not be called" and "join in a request that the trial judge direct the jury that the jury should attribute no significance to the absence of the evidence because it is immaterial" in order to prevent jury speculation.[52]

This practice also has the effect of avoiding any embarrassment to the complainant and preventing any gratuitous viewing of the photo-documentation by other parties. On the other hand, it denies the jury the opportunity to hear from the examining doctor the reasons why the examination is normal, as well as the fact that a normal examination does not necessarily mean the alleged sexual abuse did not occur.

CONCLUSION AND IMPLICATIONS

In the introduction we posed a number of questions. First, are there negative impacts for children and young people from the use of colposcopy in the medical assessment of suspected child sexual assault? Secondly, does the use of colposcopy improve the reliability of the medical assessment? Thirdly, does the use of colposcopy affect the outcomes in trials, and in particular, criminal prosecutions? Fourthly, is there any legal or medical benefit to the retention of photo-documentation when the ano-genital examination reveals no abnormalities? A number of clear findings emerge from this literature and case law review.

In relation to the first and second questions, photo-documentation has become a well-accepted practice in the medical examination of children and adolescents for suspected child sexual abuse in Australia, where the requisite consent has been given. The clinical advantages of photo-documentation are well understood, particularly in relation to the provision of second opinions.

There is no reliable empirical evidence to support the conclusion that photo-documentation of the ano-genital region in the course of a medical examination causes distress *additional* to the stresses associated with the medical examination itself, and the circumstances that have made such an examination necessary. There is some evidence that the video display of the examination may actually be helpful in reducing stress for adolescents, even if it is only to allow them to see a part of their body they would otherwise be unable to see. Because there may be additional distress for patients with special needs, such as those suffering an intellectual disability, or children who have been photographed for the purposes of the production of pornography, it is important that appropriate information be provided to ease their concerns and to gain the requisite consent. Even where there is parental consent, if the use of photographic equipment will cause distress, it should not be used in the absence of compelling reasons.

The availability of photo-documentation of apparently abnormal findings is important forensically. When there are signs of genital injury, this evidence is likely to have a significant degree of probative value and may assist a jury in reaching a verdict, as well as providing objective evidence that can be examined by a defence expert. For this reason, the argument that has been made in relation to adult sexual assault cases, that photo-documentation will be of little forensic use because cases often turn on the issue of consent,[53] does not apply to alleged sex offences against children since consent is not a defence.

The quality of the evidence gained through photo-documentation is important. The optimal form of evidence is a video of the whole examination. Not only is it easier to take a continuous video than to take a succession of still photographs, but also video recording reveals the three-dimensional physiological structures which may prevent the misrepresentation of clinical features in still

[50] *R v Dann* [2000] NSWCCA 185, [15].

[51] *R v Dann* [2000] NSWCCA 185, [16].

[52] See further *Thorne v The Queen* [2007] NSWCCA 10, [24] (Howie J).

[53] Spangaro et al, n 7.

photographs. Still photographs may be taken while video-recording an examination, but on their own, they may be difficult to interpret or liable to mislead. Thus, a series of photographs or videos should be taken, and should be assessed by at least two examining doctors before apparent abnormalities form the diagnostic basis for a finding of child sexual abuse. Caution is warranted, especially where the child gives no history of sexual abuse.

In relation to the third question, studies in the literature do not provide an answer as to whether or not photo-documentation, itself, affects the likelihood of a defendant being convicted in a child sexual assault trial, although a positive medical finding of ano-genital injuries can assist in successful prosecutions and convictions. Certainly, video-documentation, as opposed to still photographs, will not only enhance the reliability of the evidence adduced by the prosecution,[54] it will reduce prejudice to the defendant which may arise from misinterpretation of still photography, an issue that has caused considerable concern in the United Kingdom. The availability of video-documentation to other experts can prevent false positives because they are able to view the exact same anatomical structures seen by the examining clinician. Conversely, video-documentation may help avoid false negatives since a second expert may detect abnormalities that the examining doctor did not observe.

In relation to the fourth question, there may be medical benefits associated with retaining photo-documentation of normal findings, that is, for the purposes of training doctors and for comparison purposes if a child makes allegations of sexual abuse at a later date. However, we consider that the legal benefits of retention ought to be considered in light of the impact on child complainants. Although we found no studies that examined the impact on child victims if photo-documentation of their ano-genital area is made available to the accused for the purposes of his or her defence, this does not mean that distress will not be experienced, particularly by adolescents, if such evidence is provided to the defence.

One way of reducing this potential distress is to recognise that photo-documentation of normal findings is of little or no forensic value. From a legal point of view, photo-documentation of normal findings is unlikely to be admissible because it assists neither the prosecution nor the defence. It is now well established that some injuries to the hymen can heal without scarring,[55] so that if the medical examination occurs months or years after the alleged abuse, abnormalities that might have been evident at the time of the abusive event may no longer be visible. Photo-documentation will only be of utility if the defence is seeking to draw an inference of reasonable doubt from the absence of injury or abnormality. In such a situation, an expert can then explain that normal findings are more common than abnormal findings, and that normal findings do not necessarily mean the alleged sexual abuse did not occur.

The retention of photo- or video-documentation of a child's ano-genital examination after a conclusion of normality has been reached (after appropriate review), is unlikely to be of any clinical utility unless for training purposes. This is an important issue to be taken into account in formulating any policy on the distribution of such evidence. There are very good reasons to use colposcopy in ano-genital examinations because of its effectiveness in detecting injuries and abnormalities that are not visible to the naked eye. Particularly in rural hospitals, there is also value in the non-expert examiner obtaining the benefit of a second opinion, especially in relation to ambiguous findings. However, once it is established that there are no abnormal findings, there is no reason to keep those records, and certainly no reason to make them available either to the prosecution or defence.

The concern remains that if photo-documentation which is of no forensic value is retained, it may be subpoenaed by defence counsel, or shown to the accused, when there is little or no legal utility in that evidence. We suggest that this issue should be addressed by legislation to ensure that there is no unnecessary retention of photo-documentation of normal findings, and that access to photo-documentation of abnormal findings is appropriately restricted. Two options include:

[54] Note that the issue of the reliability of this type of expert evidence may arise in relation to a s 137 application by the defence to exclude the evidence under the Victorian *Evidence Act 2008* (*Dupas v The Queen* (2012) 40 VR 182; [2012] VSCA 328) but compare the approach of the New South Wales Criminal Court of Appeal in *R v XY* (2013) 84 NSWLR 363; [2013] NSWCCA 121; *R v Shamouil* [2006] 66 NSWLR 228; NSWCCA 112.

[55] Berkowitz, n 47.

(i) legislation to permit the deletion of photo-documentation of ano-genital examinations after it has been established by *at least two clinicians* that there are no abnormal findings, notwithstanding the normal rule that medical records should be kept for 30 years; and

(ii) legislation to limit the availability of photo-documentation of positive findings to expert witnesses and the legal representatives of the parties, for the purposes of forming an opinion concerning the alleged sexual abuse. The photographic/video material should be examined at the premises of the hospital or other clinical facility where it is securely stored, in order to limit the risk of improper access to the photographs/videos or dissemination of them to third parties. There is no obvious legal reason why the defendant would need to see the photographs or videos personally. Photo-documentation should not be tendered in evidence before a jury unless the interests of justice in having the photo-documentation produced outweigh the need to protect the privacy of the complainant. If the judge does admit the photo-documentation in court, she or he may make such directions concerning the manner in which it is presented as will best preserve the privacy of the complainant.

Clearly, if Spangaro and colleagues are correct that the use of colposcopy has little forensic utility, that it may have adverse impacts on victims of sexual assault, and that it may deter victims from accessing services, then its use should be reconsidered. In suspected child sexual abuse cases, however, our review of the literature indicates that the case for discontinuing the use of photo- and video-documentation has not been made out. Colposcopic examinations may be of benefit to both the prosecution and the defence, and the retention of photo- and video-documentation of allegedly abnormal findings may be very important if the interests of justice are to be served. An examination which yields no abnormalities may serve the therapeutic benefit of reassuring the child and her or his parents that she or he is anatomically normal despite allegations of abuse, or it may reassure a family where abuse is suspected but no report has been made by the child. Nonetheless, there is no reason to retain such photo- and video-documentation of normal findings once there is no more medical utility in the documentation. For that reason, law reform of the kind proposed ought to be both medically and legally uncontroversial.