Intimate partner violence in orthopaedic trauma patients
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Citation for published version (APA):
Sprague, S. A. (2013). Intimate partner violence in orthopaedic trauma patients

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Chapter 13

Summary and General Discussion
Background

Intimate partner violence (IPV) or domestic violence is a common and serious public health problem around the globe. Victims of IPV frequently present to health care practitioners including orthopaedic surgeons. Substantial research has been conducted on IPV over the past few decades, but very little research has focused on IPV in the field of orthopaedic surgery. Orthopaedic surgeons may be well positioned to help women who are experiencing IPV and position statements from both the American Academy of Orthopaedic Surgeons and the Canadian Orthopaedic Association exist and provide guidance on the topic (1,2). This thesis originated from the lack of understanding of IPV in orthopaedic patients as well as the desire to develop a program for orthopaedic surgeons to assist IPV victims presenting to orthopaedic fracture clinics.

Aims of this Thesis

The overarching purpose of this thesis was to conduct research to understand the opportunities and challenges facing orthopaedic surgeons in assisting IPV victims in their orthopaedic fracture clinics. The specific aims of this thesis were: 1) to investigate orthopaedic surgeons', surgical trainees', and medical students’ perceptions about IPV, 2) to determine the prevalence of IPV in orthopaedic fracture clinic patients, 3) to assess the barriers to and facilitators for screening for IPV in orthopaedic settings, and 4) to discuss the development of a screening program for IPV in orthopaedic fracture clinics.

Key Finding of this Thesis

Section I: Orthopaedic Surgeons and Surgical Trainees Perceptions about Intimate Partner Violence

To inform the current situation, we assessed the perceptions, attitudes, and knowledge of orthopaedic surgeons, surgical trainees, and medical students on the topic of IPV. This section reported on the findings of two surveys. We began by surveying the Canadian Orthopaedic Association membership, which is comprised of over 700 orthopaedic surgeons practicing in Canada (Chapter 2). A qualitative survey was used to collect demographic data about the surgeons and their practices, as well as to measure their attitudes towards IPV by identifying their beliefs regarding victims, batterers, and their own responsibilities as healthcare practitioners. One-hundred-and-eighty-six orthopaedic surgeon members of the Canadian Orthopaedic Association completed the survey, which equates to a response rate of 51%. The majority of the respondents (95 percent) estimated that less than 10 percent of their patients were victims of IPV and most respondents believed that IPV was rare (a prevalence of less than one percent). Multiple misperceptions were identified including: 1) the belief that asking about IPV is an invasion of the victims’ privacy, 2) investigating IPV is not the surgeon’s duty, 3) IPV victims choose to be victims, and 4) some patients' personalities cause them to
be abused. The majority of medical students and surgical residents estimated the IPV prevalence in their intended practice to be 10 percent or less. However, the majority of respondents believed identifying IPV was very relevant to clinical practice. Most of the medical students and surgical residents felt that their level of training on IPV was inadequate and over three quarters of respondents expressed a desire to receive additional education and training on IPV.

The surveys of the Canadian Orthopaedic Association (Chapter 2) and of Ontario medical students and surgical trainees (Chapter 3) are strengthened by the use of a survey that has previously been well described. In our survey of the Canadian Orthopaedic Association we obtained a response rate of 51 percent. Our survey was limited to Canadian orthopaedic surgeons who are practicing members of the Canadian Orthopaedic Association, which represents approximately 80 percent of orthopaedic surgeons in Canada. This may limit the generalizability of our study results.

Although our survey of medical students and surgical trainees had an adequate sample size, our response rate was 29 percent (Chapter 3), which may be a potential source of bias. In addition, this survey was restricted to medical students and surgical trainees at McMaster University who could be contacted via email. It is unclear as to whether our findings are generalizable to other academic institutions and jurisdictions.

In summary, this section found that orthopaedic surgeons, surgical trainees, and medical students have multiple misperceptions about IPV. Our surveys also found that respondents believed that the prevalence of IPV was very low in their patient population. These surveys also identified the need for further education of orthopaedic surgeons, surgical trainees, and medical students on the topic of IPV. Through education and awareness, the misperceptions must be corrected before we can develop IPV screening programs and IPV support programs within orthopaedic fracture clinics.

Section II: Prevalence of Intimate Partner Violence in Orthopaedic Fracture Clinic Patients

The aim of this section was to determine the prevalence of IPV in patients presenting to orthopaedic fracture clinics. We began by conducting a systematic review and meta-analysis of the published literature to examine the best estimates of IPV prevalence across different medical subspecialties (Chapter 4). This meta-analysis found that the best estimates of lifetime prevalence of any type of IPV were 38 percent in family medicine and 40 percent in emergency medicine. We did not identify any studies assessing the prevalence of IPV in orthopaedic patients, revealing a gap in the present published literature. This review and meta-analysis (Chapter 4) is strengthened by our comprehensive search of the literature. We screened articles for inclusion in duplicate and two independent reviewers abstracted data from each included study, ensuring accuracy. Despite these strengths, this study is limited by a large degree of heterogeneity across the included studies, which limited our ability to directly compare studies. Another limitation is that only articles published in English were included. We also did not include grey literature in our review.

To measure the prevalence of IPV in orthopaedic fracture clinic patients, we developed the protocol for the PRevlance of Abuse and Intimate Partner Surgical Evaluation (P.R.A.I.S.E.) study (Chapter 5). This is a multi-centre cross-sectional study in which female patients presenting to fracture clinics completed two validated self-reported questionnaires (Woman Abuse Screening Tool (WAST) and the Partner Violence Screen (PVS)), as well as a direct screening approach, to determine the prevalence of IPV in the past 12 months and in their lifetime. Prior to completing the large cross-sectional study, we completed a pilot P.R.A.I.S.E. study at two level I trauma centres in Ontario (Chapter 6). In our pilot study, we found that the
overall prevalence of IPV (defined as emotional, physical, and/or sexual abuse) within the last 12 months was 32 percent. This study suggested a high prevalence of IPV among female patients with injuries who presented to fracture clinics within trauma centres in Ontario. The pilot study helped to inform the protocol for the definitive P.R.A.I.S.E. study and the high prevalence that we found in the pilot study provides a strong rationale to complete the larger definitive study.

The definitive P.R.A.I.S.E. study included 2,945 women from 12 clinical sites in Canada, the United States, the Netherlands, Denmark, and India. This study found that the 12-month prevalence of IPV is 16.0 percent and the lifetime prevalence is 34.6 percent (Chapter 7). This study also found that the rates of IPV differed across the different jurisdictions.

Our Prevalence of Abuse and Intimate Partner Surgical Evaluation (P.R.A.I.S.E.) study (Chapters 5, 6, and 7), was strengthened by the use of previously developed screening questionnaires and direct questions, broad eligibility criteria, the use of female study coordinators in order to maximize enrolment, the completion of self-administered questionnaires in a private location, and the assurance of anonymity of the respondents. Using multiple screening tools may help to identify patients who have experienced forms of abuse that may not be detected with only utilizing one tool. However, there is a risk that broadening the definition of IPV created a high rate of false-positives. The P.R.A.I.S.E. pilot study (Chapter 6) is limited by 113 women declining to participate in the study. It is plausible that the non-participants differed from the participants in terms of prevalence of IPV. In addition, the generalizability of the findings may be limited to fracture clinics with similar referral and triage practices as the two included in this pilot study.

Our cross-sectional multi-centre study assessing the prevalence of IPV in the fracture clinic setting was strengthened by including multiple international centres (Chapter 7). This study was limited by the use of a self-completed questionnaire, which resulted in some missing data. This study was also limited by including only patients who present to the clinic for treatment or follow-up of an injury, which decreases the generalizability of the findings. In addition, the exclusion of non-English speaking patients further decreases the generalizability of the findings. Finally, this study only included female patients and it consequently does not provide an estimate of the prevalence of IPV in male orthopaedic fracture clinic patients.

This research from this section provides suggests that the prevalence of IPV is as high as other medical subspecialties (3 - 24) and provides a strong rationale to consider implementing a screening program to assist IPV victims in orthopaedic fracture clinics.

Section III: Barriers to and Facilitators for Screening for Intimate Partner Violence in Orthopaedic Fracture Clinic Patients

The results of the first section of this thesis demonstrated that orthopaedic surgeons and surgical trainees had multiple misperceptions and a lack of education about IPV, which is a significant barrier to implementing a screening program within a fracture clinic. This section further investigated some of the barriers to screening for IPV in an orthopaedic fracture clinic setting and also suggests recommendations on how to overcome some of these barriers.

We conducted a systematic review which examined health care providers’ perceived barriers to screening for IPV (Chapter 8) and identified and explored five categories of IPV screening barriers: personal barriers, resource barriers, perceptions and attitudes, fears, and patient-related barriers. The most frequently reported barriers included personal discomfort with IPV, lack of knowledge about IPV, and time constraints within a clinical setting. Health care provider barriers were reported more frequently than patient-related barriers. This systematic review was strengthened by a thorough and systematic search of the literature. We reviewed all
potentially eligible articles and independently abstracted all data in duplicate. In addition, this systematic review is limited by the small sample sizes and the low response rates in some of the included studies. In addition, there was heterogeneity across the included studies as a result of variations in study design, methodology, provider characteristics, and medical specialties. Consequently, this heterogeneity limited the direct comparisons of the included studies. Another limitation was the high number of low- and moderate-quality studies included in the review. In addition, we included only articles that were published in English. Finally, we did not include grey literature in this review.

To further explore the barriers to and facilitators for IPV screening in fracture clinics, we conducted a series of focus groups with orthopaedic surgeons and orthopaedic surgical trainees (Chapter 9). To provide additional context to the focus group findings, we also interviewed two opinion leaders in the field of orthopaedics. Similar to the previous published literature, the focus groups of orthopaedic surgeons and surgical trainees identified multiple perceived fracture clinic barriers, barriers related to patients, barriers specific to surgical trainees, and barriers specific to surgeons. The participants of the focus groups also discussed and identified facilitators for IPV screening including system-level facilitators, fracture clinic processes, and personnel resources. The interviews with the opinion leaders identified several facilitators for the implementation of policies for IPV screening including the need for champions, the need to increase awareness both locally and nationally, local policy implementation, and the need for research to inform policy. This qualitative study was strengthened by utilizing an experienced facilitator and interviewer who was knowledgeable about IPV. In addition, we worded questions within our focus group and interview guide to ensure that they were neutral and did not lead the participants. Participants in our focus groups were from a single academic institution, limiting the generalizability of the results. However, we did interview two opinion leaders from different academic institutions, which may improve the generalizability of our findings.

We then evaluated whether it was acceptable to fracture clinic patients for health care practitioners to screen for IPV in the orthopaedic fracture clinic setting. Seven-hundred and fifty patients at five different hospitals in Canada and the Netherlands completed a survey that addressed this question (Chapter 10). This study found that the majority of patients agreed that the fracture clinic was an appropriate setting for health care practitioners to ask about IPV. This survey was strengthened by including multiple centres and the use of broad inclusion criteria. This study was limited by only including English (Canada) and Dutch (Netherlands) speaking patients, which may mask the effects of cultural differences. In addition, the use of a self-completed questionnaire resulted in some missing data.

In summary, this section identified multiple barriers to screening for IPV, which are similar to those identified in other specialties (25-27). Fortunately, many of which are possible to overcome through championship, education and additional resources. In addition, orthopaedic surgeons provided multiple facilitators for implementing a screening program within the fracture clinic and patients were acceptable to the idea of a universal screening program for IPV being implemented in the fracture clinic setting.

Section IV: Moving Towards Developing a Screening Program for Intimate Partner Violence in the Orthopaedic Fracture Clinic

There are a number of potential options for screening for IPV in health care settings and the optimal method of screening for IPV remains highly controversial (28, 29). This section provides a discussion on several different screening methods and the challenges for implementing a screening program within an orthopaedic fracture clinic setting.
Multiple screening instruments have been developed and implemented in various health care settings (30-37). For the P.R.A.I.S.E. study, we utilized two previously developed instruments (the WAST and the PVS), and we also directly asked patients whether they had experienced physical, emotional, and/or sexual abuse. We found that the prevalence rates varied across these instruments (Chapter 11). Specifically, the prevalence was 30.5 percent with the direct questioning approach, 12.4 percent using the WAST, and 9.2 percent using the PVS. This study suggests that previously developed screening tools may not be broad enough and are consequently under-estimating the prevalence of IPV. A more direct approach to screening for IPV may be more effective. This study is limited by the small sample size of women who screened positive using the composite of the three measures. Please refer to the previous discussion about the strengths and limitations for Chapter 6.

Multiple factors need to be considered prior to implementing an IPV program in an orthopaedic fracture clinic setting. This chapter (Chapter 12) provides a summary of the research conducted to date on IPV in the field of orthopaedic surgery. This chapter also sets the stage for future research initiatives which include providing orthopaedic fracture clinics with an IPV tool kit and determining its effectiveness. We also discussed several items that need to be considered when developing a program to identify cases of IPV within the orthopaedic fracture clinic setting. Recommendations for future research are also discussed. This review is strengthened by a thorough review of the literature and using an evidence-based approach in making recommendations for future research.

This section has discussed several items that need to be considered when implementing an initiative to help identify patients who are experiencing IPV within the orthopaedic fracture clinic setting. Screening for IPV remains controversial and recent randomized controlled trials evaluating different screening programs have not shown positive results (38, 39). Future research needs to rigorously evaluate active screening programs using the appropriate study designs and outcome measures.

Implications of this Thesis

Unlike child abuse, it is not mandatory to screen for and report IPV in adult patients in most jurisdictions. As a consequence, most hospitals and clinics have procedures and protocols in place for screening for and managing cases of child abuse, but not for IPV. In addition, most physicians receive education on how to identify and manage children who are being abused and very little education on how to manage IPV in a clinical setting. While the mandatory reporting of IPV in the adult population is not appropriate, we can learn from the establishment of detailed protocols and processes and educational initiatives that are in place to guide health care professionals in the screening and management of child abuse.

Traditionally, general practitioners have been well-positioned to screen for IPV and assist IPV victims due to their gatekeeper role within the health care system. Many patients have close relationships with the family physicians which leads one to believe that general practitioners are appropriately helping IPV victims within their practice. Unfortunately, not everyone has a general practitioner and not all general practitioners actively ask patients about IPV. In addition, patients may be hesitant to disclose IPV to someone that they and their families are very close to. Given these limitations, it is vital that other health care practitioners look to identify cases of IPV.

Many of the women who present to emergency departments with injuries are referred to orthopaedic surgeons for treatment of their injuries. Although these patients may be screened for IPV in the emergency room, the emergency department is not the perfect location to manage IPV
The orthopaedic fracture clinic may provide an ideal opportunity for a second chance to screen for IPV and subsequently offer appropriate assistance for patients with orthopaedic injuries (2). At the initiation of this thesis, very little research had been conducted on IPV in orthopaedic trauma and this thesis helps us to move towards an evidence-based approach for addressing how orthopaedic surgeons can help IPV victims.

We hypothesized that orthopaedic surgeons are well positioned to help victims of IPV; however, as is evident by the research conducted in this thesis, multiple barriers must be overcome before large-scale IPV programs can be implemented in the orthopedic fracture clinic. One of the key barriers identified in this thesis is the lack of education on IPV for medical students, surgical trainees, and orthopaedic surgeons. Broad education initiatives need to be developed, evaluated, and then implemented to ensure that orthopaedic surgeons are comfortable with assisting IPV victims. Another key barrier identified included was the lack of privacy within the orthopedic fracture clinic setting. As fracture clinics are renovated and redesigned, patient privacy should be taken into consideration. We need to move from a model of open-concept, to private exam rooms. Orthopaedic surgeons and the surgical trainees also identified that the lack of time during the patient’s fracture clinic visit was a critical barrier. This suggests that it may be more efficient to have a nurse or social worker screen for IPV and provide support to patients who are victims of IPV.

Our surveys found that orthopaedic surgeons believed that the prevalence of IPV was very low in the patients presenting to their fracture clinics. This is a misperception, as the cross-sectional prevalence studies conducted as part of this thesis found a higher than anticipated rate of IPV in patients presenting to fracture clinics with injuries. This finding further supports our belief that screening for IPV in the orthopaedic fracture clinic presents an opportunity to help many women who are victims of IPV.

The last section of this thesis touched on some of the items to consider when developing a program to identify IPV victims within the fracture clinic setting. Our research found that a direct approach when asking about IPV and computer based screening may be more effective than face-to-face screening and self-administered written screening. There are numerous factors to take under consideration when developing, evaluating, and implementing a new IPV initiative and it is vital that a multi-disciplinary approach be utilized. Future research needs to be conducted to evaluate different screening options. In summary, through education, restructuring, forward thinking, and additional research, the barriers to identifying and managing IPV patients in orthopaedic fracture clinics needs to be urgently overcome.

**Future Research**

Future research needs to begin with a formal evaluation of educational initiatives in identifying and managing IPV for medical students, surgical trainees, and orthopaedic surgeons. Educational opportunities regarding IPV may include an addition to the core curriculum at the medical school level. Individual surgical trainee programs also need to incorporate information about the management of IPV into their programs to ensure that surgical trainees are comfortable with screening and managing IPV victims. Workshops and educational rounds may also provide an excellent opportunity for creating awareness and improving the level of comfort about IPV amongst orthopaedic surgeons and surgical trainees.

This thesis identified several different facilitators to screening for IPV, along with multiple methods for creating awareness and managing IPV in the fracture clinic setting. Despite the initial research on IPV screening in the fracture clinic setting conducted as part of this thesis,
numerous questions remain unanswered. Some of these questions include: what is the optimal method of screening for IPV, is passive or active screening more effective, who should conduct the screening, and what are the most effective means of helping fracture clinic patients who are identified as IPV victims. These initiatives need to be formally developed and appropriately evaluated using an evidence-based approach before they are widely implemented to ensure that they are an effective and safe means of helping victims of IPV. In addition, very little research has been conducted on IPV in male patients. Future research should estimate the prevalence of IPV in male patients as well as design, implement, and evaluate screening and management programs aimed at male IPV victims.

Conclusions

We are moving towards an evidence-based approach to assisting IPV victims in orthopaedic fracture clinics. We found that multiple barriers to screening exist, and that orthopaedic surgeons, surgical trainees, and medical students have many misperceptions about IPV. Educational programs are urgently needed to address these misperceptions and to provide factual knowledge about IPV. We also identified a higher than anticipated prevalence of IPV (physical, emotional, and sexual abuse) in orthopaedic patients, which suggests that the orthopaedic fracture clinic may provide an opportunity to identify and subsequently help many women who are victims of IPV. Our focus groups with orthopaedic surgeons and surgical trainees and our interviews with opinion leaders also identified multiple facilitators for screening for IPV in orthopaedic fracture clinics. Most focus group and interview participants are in favour of IPV screening programs and would be supportive of their implementation. Multiple factors need to be considered when designing an IPV screening and assistance program and future research needs to focus on the evaluation of educational programs as well as the effectiveness of different IPV screening and assistance programs.