TITLE: Emergency Medical Services: A Resource for Victims of Domestic Violence?

NUMBER OF AUTHORS: 4

ARTICLE TYPE: Reflections on Prehospital Care

KEYWORDS: Domestic Violence, Abuse, Ambulance, Emergency Medical Services, Emergency Medical Technician

ABSTRACT

Background: Domestic violence (DV), also known as intimate partner violence (IPV), is one of the leading causes of serious injury among women of childbearing age, accounting for between 2-24% of emergency department visits depending upon the specific criteria used to measure incidence. As first responders on the scene during domestic violence calls where personal injuries have occurred, emergency medical services (EMS) could routinely identify, report and assist victims of violence. Yet, little is known of the prevalence of DV calls in EMS practice, emergency medical technicians' (EMT) knowledge and comfort in responding to such calls, or how they care for victims.

Study Objectives: The objectives of this study were to assess Emergency Medical Technicians' knowledge of and experience with providing care to victims of DV in the province of Ontario, Canada.

Method: Data were gathered through an online, short-answer survey. Survey data were analyzed using basic frequency displays, and descriptive statistics are reported.

Results: Almost 500 EMTs participated in this study, the vast majority of whom (90%) attended at least one DV call in the preceding year, with 65% attending between 10 and 20 DV calls. The majority of respondents (84.5%) wished for more education and training on the issue.

Conclusion: EMTs have frequent contact with victims of DV and require specific education and training in order to develop competency and comfort in responding to patients who have experienced DV.

INTRODUCTION

Domestic violence (DV) is a serious public health issue affecting untold numbers of women worldwide. In Canada, 7% of women, some 653,000 individuals, experienced physical or sexual assault by their intimate partners in the 5 years preceding the most recent survey; 2% had experienced an assault in the previous 12 months (1). Of those assaulted by a current or ex-partner 44% reported receiving injuries, 13 % required medical attention and 2% were hospitalized (1).

The prevalence of DV in hospital emergency department patients has been repeatedly studied, although variability in the criteria used (for example, current or past violence; physical and sexual or physical/sexual and psychological) and the fact that women may not disclose the first time they are asked, have led to conflicting findings regarding prevalence. For example, one cross sectional study of women presenting in American emergency departments reported 11.7% had injuries or stress-related issues resulting from DV (2) while a recent study of a hospital in the UK used narrower parameters to assess DV (acute injury or condition directly related to DV) and reported 1% of female ED patients presented with DV related issues (3). The most recent Canadian study conducted in a smaller, urban emergency department reported 2% of female patients presented with DV related issues (4).

Given the high prevalence of DV and its associated health sequelae, it is not surprising that governmental organizations and medical governing bodies and colleges have repeatedly called for the development of DV related policies and protocols and additional

training and education for health care professionals. As a result a number of education and training initiatives for medical students, residents, and practitioners have been developed (5-10).

Despite this focus on emergency care for victims of DV, the prehospital setting has garnered little attention. A general estimate of the prevalence of DV among Emergency Medical Service (EMS) calls was calculated by The US Centers for Disease Control in 2003; they estimated 95,000 ambulance visits are made annually due to DV (11). There has been very little additional research. We found just one study of the prevalence of DV in a specific EMS jurisdiction and those authors noted there were no other peer reviewed English language publications (12). In that study, Boston area ambulance run sheets from a non-consecutive, convenience sample from July to December 1995 were obtained and reviewed to assess positive, probable and negative cases of DV (N= 876). The authors reported that 5.4% (N=47) of women transported by paramedics were positive for DV while 10.8% (N=95) were probable cases that went unidentified. The authors concluded that EMS personnel have unique training needs and require educational programs to increase their awareness, knowledge and documentation of the issue.

In 2005 the Sunnybrook-Osler Centre for Prehospital Care in Toronto, Canada received funding from the province of Ontario to develop a curriculum on Domestic Violence specific to EMS practice. (In our jurisdiction all EMTs who provide care under the supervision of a medical director are referred to as paramedics, regardless of the sphere of practice; henceforth we will refer to these providers as paramedics.) To guide and

inform curriculum content, we wanted to learn more about current practices on calls where DV was documented. We learned, however, that DV related calls do not have a specific code, making a chart review impossible. Instead, we developed an online survey to learn more about paramedics' current knowledge and daily practices.

MATERIALS AND METHODS

Study Design

An interactive, web-based survey was developed by an advisory committee comprised of paramedics and DV experts to assess paramedics' practice, knowledge of the issue, mistaken assumptions and educational gaps.

Institutional Ethics Review Board approval for this project was obtained from the Sunnybrook and Women's College Health Sciences Centre.

Study Population

A convenience sample of active paramedics in the province of Ontario was accessed through the Ontario Paramedic Association (OPA) website. The OPA is a voluntary association dedicated to 'enhancing the professional image of paramedics, improving communications between paramedics, and lobbying for improvements to the standards of patient care'. During the data collection period, the OPA membership was 1,326 and the website received an average 650 visits per month.

Survey

A brief, short-answer survey was developed based on the available literature and in consultation with the advisory committee. The survey was piloted with 51 paramedics during a provincial conference in September 2005. Participants completed a paper and pencil version of the survey and provided feedback on the instrument. The committee considered the pilot results and participants' feedback and made revisions as necessary; revisions primarily focused on wording and ordering of the questions.

The survey was comprised of 23 questions divided into three sections: a) demographic (9 questions); b) current practice and experience (7 questions), and, c) knowledge about DV from the point of view of paramedic practice (4 questions).

The survey was uploaded on the OPA website using a free software program (SurveyMonkey) with a banner reading, "We need your help!" Under the banner a description of the curriculum development project was provided with a link to the survey. Data collection took place over a three month period in the winter of 2005-2006. Survey completion was anonymous. As a small incentive, participants were invited to complete and submit a separate email in order to be eligible for one of twenty-five available gift certificates.

Data Analysis

Data were analyzed using the software available through the online program. Descriptive statistics were generated and used for data reporting.

RESULTS

On average, 650 visits are recorded on the website each month. The online survey was completed by 480 respondents representing 36% of the total OPA membership; the number of participants relative to the number of website visitors is unknown. Every level of paramedic practitioner (EMT-Defibrillation, EMT-Intermediate and EMT-Paramedic) and every regional base hospital (including those in rural, remote rural, and the provincial air ambulance service) were represented.

Demographics

Of the 456 respondents who provided their location, the majority (69%) were employed in urban centres of greater than 100,000 people. One hundred (21%) worked in communities of between 10,000 and 100,000 people and 48 (10%) worked in communities with fewer than 10,000 people. One hundred and eighty-six (40%) of respondents had five years or less experience as an EMT; 49 (24%) had more than 16 years, with the remainder having between 6 and 16 years. A majority 358 of the 477 respondents (75%) were under 40 years of age reflective of the known average age for paramedics (36.3 years) (19).

Current Practice and Experience

Of the 385 respondents who answered the question about the number of DV calls attended in the past 12 month period, 345 (90%) had attended at least one call in that timeframe; 93 (24%) responded to more than 10 such calls while 252 (65%) responded to

between 1 and 10 calls. Just 40 respondents (10%) had not attended, or did not remember attending, a DV call in the previous year.

When EMS providers arrive on the scene they may not know if injuries are due to assault or not, or whether or not the perpetrator is still on the scene. When a 911 call is made and DV is disclosed, or the dispatchers suspect DV, they share this information with the EMS, allowing the team to take necessary precautions to protect themselves. Of 378 respondents who described the way dispatchers identify DV calls, one-third (32%) reported that all or most of the DV calls were identified by dispatchers. Slightly more, 148 respondents, (39%) reported that few or none of their calls were so identified while 107 (28%) reported that just some of the calls were identified.

On their most recent DV call, 79% (294) of the respondents informed the police. (Calls made to 911, the emergency phone number, are automatically patched through the police services and those identified by the caller as involving DV would also automatically result in police at the scene, however calls for medical aid where there is no disclosure of DV would not automatically result in police attending the scene.) Upon transporting the patient to the hospital 58% of respondents (217) reported their assessment of DV to the hospital's emergency department staff, 18% (69) reported the case to their supervisor and 7% (25) told no one. Child protection services were notified by 8% of respondents (31). Twenty-three percent (106) of the respondents left this field blank. Totals add up to more than 100 as respondents could select more than one response.

In response to the question, 'how frequently are DV patients transported to hospital?' the majority of the 375 respondents, 64.3% (241), reported that DV patients are transported to hospital *some of the time* while 29.3% (110) said such patients are transported *most of the time*. When patients were not transported to hospital the most frequently cited reason for non transport, was because the *patient refused* 83.5%, (303). In only 6.3% (23) of the cases was the absence of injuries the reason for non transport. One hundred and seventeen respondents left this field blank.

Knowledge and Attitude*s*

Most of the 381 respondents had *some* prior education about DV, obtained through a variety of means. The largest percentage (58.3% or 222) described their prior learning as "informal education including personal learning"; 35.7% (136) attended a conference or other continuing medical education initiative while 17.6% (67) received some formal academic education. Although a "no training" option was not available, there was an "*other*" option with space provided for comments. Thirteen respondents noted they had no prior training or education; some indicated this with multiple exclamation marks. In this same section, 3 respondents said they knew about the issue from "personal experience". (Totals equal more than 100% as respondents could select more than one response.) Ninety-nine respondents left this field blank. Fully 84.5% of respondents (321) expressed the wish for more formal training on the topic.

Current knowledge about DV and paramedic practice was assessed through a series of questions beginning with "To your knowledge, does the law require mandatory reporting

of DV?" Twenty-two percent (84) of 378 respondents correctly identified that in Ontario mandatory reporting was required only when children had witnessed or heard the assault, however, 43% (163) believed the law required them to file a report when they attended victims of DV.

Two additional questions focused on perceived risk factors for victimization and perpetration of violence. Two hundred and eighty respondents wrote detailed answers describing factors that put a woman at risk for victimization. Risk factors for increased victimization were noted to be: women and children, low income and education, isolation, a history of past violence, recent immigrants, and involvement of alcohol or drugs. A number of respondents declared all women were equally at risk of victimization, one person noted that wealthier victims may be more adept at concealing DV. Factors related to increased risk of perpetration were identified by 236 respondents. Specific risk factors for perpetration were: former victimization or witnessing family violence, alcohol or drug use, anger issues, personality traits and behaviors such as manipulation, and mental illness.

DISCUSSION

To our knowledge, this is the first large, population-based survey of paramedics' experience and knowledge of DV and a first effort to estimate prevalence of DV calls in the EMS environment. Close to 500 paramedics from across the province responded to the survey, providing the first ever, broad based data on the prevalence of DV in paramedics' practice, their knowledge of the issue, mistaken assumptions and educational

gaps. As such, this research represents an important contribution to the scant literature on domestic violence in the prehospital environment.

EMS providers working in the prehospital environment encounter significant numbers of women who experience DV. In fact, almost one quarter of this study's respondents attended more than 10 such cases in the previous year while 9% reported seeing more than 20 DV cases in a one year period. These numbers likely refer to those cases where either the woman has disclosed or the circumstances have made identification of DV evident. Based on experience in other domains, it may be conjectured that an additional substantial number of cases go undetected.

Despite the volume of DV calls reported by EMS providers, it is surprising how little formal education or training has been developed for the sector. Most study respondents had only informal, personal education or a conference/CME session on the topic. Our scan of the literature revealed little in the way of specific training for EMTs on the topic although the latest version of one of the standard texts addresses the topic somewhat, and the upcoming edition of the textbook published by the National Association of EMS Physicians will have a section on DV (personal communication, Dr. David Cone). A review of the prehospital syllabus for Ontario paramedics revealed a broad section on the topic of abuse, however nothing specific concerning DV (http://www.health.gov.on.ca/english/public/program/ehs/edu/pdf/pcp_syllabus.pdf).

Although a few earlier studies have addressed EMS providers and the issue of domestic violence, for example, Singleton and colleagues (13) investigated public attitudes about the roles of EMS, and Jezierski (14), as well as Hall and Becker (15), published descriptions of curricula, there have been remarkably few studies of EMS providers' knowledge, attitudes, and experience with the issue. In our review of the literature we found just one evaluation of an educational intervention on DV developed specifically for workers in the prehospital environment (16). In that study, 46 EMTs completed a 12-item paper and pencil survey prior to a 3 hour mandatory lecture. A post test was administered 4 to 6 months after the lecture. Although the post test sample was small (n=19), significant improvements in knowledge were reported on most measures. In commenting on the small sample size, the authors note that the EMT population is a highly mobile one as providers move in and out of service. Despite this, the results suggest that instruction on the topic is useful.

Interestingly, in our study, of the 40 respondents who reported that they had not attended a DV case in the prior year, 14 were recent graduates (those with between 1 and 5 years of practice) and an equal number were amongst the most experienced (more than 21 years of practice). While it is difficult to account for this phenomenon, one possibility is that the less experienced are less likely to recognize subtle indicators of DV while the most experienced were trained at a time when DV was not considered DV a possible or potential health issue.

Without education on DV tailored to the EMS sphere of practice indicators of abuse are likely to go unrecognized and an opportunity to assist abused women will be missed. Without specialized training there is also a risk that EMS providers may inadvertently further victimize patients by failing to provide much needed support, failing to understand the characteristics of an abusive relationship, and responding inappropriately to disclosures, asking inappropriate and unsupportive questions and offering unrealistic or even dangerous solutions. Even if they do not actually harm their patients, EMTs are missing an opportunity to intervene, to reduce the shame and isolation many abused women experience, and to provide much needed resource and referral information.

Finally, conducting research with health care professionals is particularly challenging and low response rates are frequently noted. As little survey research has been conducted with EMTs and paramedics an 'average' response rate has yet to be determined. However, in *mail survey research* of health care professionals, response rates of 36% are fairly typical (20). Physicians are known to be particularly resistant to completing surveys in any form (21). Kellerman and Herald in a review of 25 studies of physicians that employed mailed surveys reported response rates ranging between 14% and 38% (22). *Online surveys* have been used with health professionals with varying degrees of success (response rates ranging from 9% to 94%) (23). While the number of studies using the web or email to collect data has been increasing over the past fifteen years, response rates appear to be decreasing. In a review of electronic surveys conducted between 1986 and 1998, the author notes: "On average, the 31 studies report a mean response rate of

36.83%... The 1998/9 period, in contrast, showed thirteen studies using e-mail surveys with an average response rate of about 31%”(24).

LIMITATIONS

There are some clear limitations to this study the first being a cautionary note about the generalizability of these findings to all EMTs or paramedics based on the low response rate.

A second limitation of our study is its reliance on paramedics’ recall of past events, in particular the number of DV related calls each paramedic answered in the past year. Nonetheless, given the scope of paramedic practice and range of medical emergencies encountered on a daily basis, one might argue that the respondents are more likely to underestimate rather than overestimate the number of DV cases seen in a year.

Finally, our jurisdiction employs a mix of EMT-Defibrillation, EMT-Intermediate and EMT-paramedic providers. We did not differentiate between these categories of EMTs for the purposes of this study. We therefore do not known whether the level of training, as distinguished from the years in practice, is associated with recognition and knowledge of DV.

CONCLUSION

EMTs encounter identified victims of domestic violence with some regularity. In addition, it is likely they also encounter victims who are not readily identified or choose not to disclose the cause of injuries. EMS providers are thus uniquely positioned to be useful in identifying, reporting, and assisting abused women. In failing to provide them with the necessary skills and tools to most effectively help victims of DV, EMS personnel miss an important opportunity to provide abused women with much needed support, resources and information, either themselves or through information provided to Emergency Department staff.

ACKNOWLEDGEMENTS: This research was funded in part by a grant from the province of Ontario. The authors wish to thank the members of the Steering Committee for their contributions to this project.

References:

1. General Social Survey, Cycle 18: Victimization. Statistics Canada: Ottawa. 2004; Catalogue 85-566-XIE.

2. Abbott J, Johnson R, Koziol-McLain J, Lowenstein SR. Domestic violence against women: Incidence and prevalence in an emergency department population. JAMA. 1995; 273(22):1763-7.

3. Boyle A, Todd C. Incidence and prevalence of domestic violence in a UK emergency department. Emerg. Med. J. 2003; 20(5):438-442.

4. Cox J, Bota GW, Carter M, Bretzlaff-Michaud JA, Sahai V, Rowe BH. Incidence and prevalence in a northern emergency department. Cdn Fam Phys. 2004; 50(1): 90-100.

5. Hendricks MM. A survey of family-violence curricula in Virginia medical schools and residencies at university medical centers. Acad Med. 1997; 72:54-6.

6. Kripke EN, Steele G, O'Biren MK, Novack DH. Domestic violence training program for residents. J Gen Intern Med. 1998; 13(12):839-41.

7. Alpert EJ, Albright C, Webb S. Massachusetts medical society seminar series on domestic violence. Acad Med. 1999; 74(5):589-90.

8. Magrane D, Ephgrave K, Jacobs MB, Rusch R. Weaving women's health across clinical clerkships. Acad Med. 2000; 75(11):1066-70.

9. McCauley J, Jenckes MW, McNutt LA. ASSERT: The effectiveness of a continuing medical education video on knowledge and attitudes about interpersonal violence. Acad Med. 2003; 78(5):518-24.

10. Brienza RS, Whitman L, Ladouceur L, Green ML. Evaluation of a women's safe shelter experience to teach internal medicine residents about intimate partner violence: A randomized controlled trial. J Gen Intern Med. 2005; 20(6):536-40.

11. National Center for Injury Prevention and Control. Costs of intimate partner violence against women in the United States; Atlanta GA: Centers for Disease Control and Prevention; 2003.

12. Husni ME, Linden JA, Tibbles C. Domestic violence and out-of-hospital providers: a potential resource to protect battered women. Acad Emerg Med. 2000; 7(3):243-8.

13. Singleton A, Brewer K, Goodman P. Domestic violence education and reporting: Public attitudes about the roles of EMS. Prehosp Emerg Care. 2003; 7(3):312-315.

14. Jezierski M. Family violence screening: Opportunities in prehospital settings. J of Emerg Nurs. 1999; 25(3)201-205.

15. Hall M, Becker V. The front lines of domestic violence. Training model for rural EMS personnel. J Psychosoc Nurs Ment Health Serv. 2002 Sep;40(9):40-8.

16. Weiss SJ, Ernst AA, Blanton D, Sewell D, Nick TG. EMT domestic violence knowledge and the results of an educational intervention. Am J Emerg Med. 2000; 18(2):168-71.

17. Dixon R, Turner R. Electronic vs. conventional surveys. In: Baker J, Woods R, Reynolds R, eds. Handbook of research on electronic surveys and measurements. Hershey, PA: Idea Group Reference, 2007; p. 104-111.

19. Canadian Institute for Health Informatics. Canada's health care providers: 2005 chartbook. Available at: http://secure.cihi.ca/cihiweb/products/HCP_Chartbook05_e.pdf (Accessed June 2/08).

20. DuMont J, Parnis D. Forensic nursing in the context of sexual assault: comparing the opinions and practices of nurse examiners and nurses. App Nurs Res. 2003; 16(3):173-183.

21. Hay D. A mail survey of health care professionals: An analysis of the response. J of Cdn Chiroprac Assn. 1996; 40:162-8.

22. Kellerman SE, Herold J. Physician Response to Surveys. A Review of the Literature. American Journal of Preventive Medicine. 2001; 20(1).

23. Braithwaite D, Emery J, Lusignan S, Sutton S. Using the Internet to conduct surveys of health professionals: a valid alternative? Fam Pract. 2003; 20(5):545-551.

24. Sheehan KB. E-mail Survey Response Rates: A Review. J of Comp-Med Comm. 6 (2), 0–0 doi:10.1111/j.1083-6101.2001.tb00117.x