Preventive Medicine Reports 53 (2025) 103058

Contents lists available at ScienceDirect

Preventive Medicine Reports

journal homepage: www.elsevier.com/locate/pmedr

Health system preparedness to respond to domestic and sexualized violence: A cross-sectional survey in Nova Scotia, Canada

Alexa R. Yakubovich [a,b,*], Bridget Steele [a,c], Jessie Cullum [a], Christine P. Johnson [b], Lindsey N. Parker [d,e], Susan J. Wilson [b], Robert Green [a,b], Shelley Fashan [f], Stacy Burgess [e,g], Annette Elliott Rose [b,e]

[a] Dalhousie University, Canada
[b] Nova Scotia Health, Canada
[c] University of Oxford, UK
[d] Office of Addictions and Mental Health, Canada
[e] IWK Health, Canada
[f] Health Association of African Canadians, Canada
[g] Department of Health and Wellness, Canada

ARTICLE INFO

Keywords:
Domestic violence
Health services
Health policy
Women's health
Nova Scotia

ABSTRACT

Objective: Violence against women (VAW) has detrimental health consequences, making the health system an important intervention point. There are no large-scale Canadian studies on health system preparedness or practices related to VAW using data collected in the last 20 years. We investigated health professionals' knowledge and practices around VAW in Nova Scotia, which has the highest self-reported prevalence of intimate partner violence against women of all Canadian provinces.

Methods: We surveyed 1649 participants working in health services and policy in Nova Scotia in partnership with knowledge users across the VAW and health sectors. We descriptively analyzed quantitative data on knowledge and practices related to domestic and sexualized violence (the most common forms of VAW).

Results: Over 90 % of participants worked in areas of high priority to addressing VAW (e.g., mental health and addictions), yet only 35 % reported that addressing domestic or sexualized violence was part of their team's goals. Nearly half the sample (43 %) reported seeing at least one new case of abuse in their work in the last six months, two-thirds of whom had not received training on domestic or sexualized violence since March 2020. Participants reported significant deficits in VAW-related knowledge and systems-level supports, including inadequate referral resources, time, and space to respond to violence among patients.

Conclusions: We found significant gaps in current health system capacity to respond to VAW in one of Canada's most impacted provinces, despite increased awareness and programming around VAW since March 2020. Given the health inequities faced by survivors, health sectors must be better equipped to respond to VAW.

1. Introduction

Violence against women (VAW) has severe health consequences, in both the short-term and long-term (including after the violence has ended and, in some cases, across generations), making VAW a priority for health systems to prevent and address (Campbell, 2002; Krug et al., 2002). Some of the impacts on health include: physical injury, acute and chronic mental health problems, and chronic disease and pain. The most common forms of VAW are domestic or family violence (including intimate partner violence [IPV]) and sexualized violence (Krug et al., 2002; WHO, 2012). Most VAW survivors do not formally report or seek help for their experiences, making the health system commonly one of the only formal supports survivors come into contact with. In particular, emergency departments, perinatal care, primary healthcare, and mental health and addictions services – along with health policy more broadly – have been previously highlighted as areas in the health system that are especially high priority for addressing VAW in policy and practice (García-Moreno et al., 2015; Melendez-Torres et al., 2023).

* **Corresponding author at:** Department of Community Health and Epidemiology, 5790 University Avenue, Halifax, NS, B3H 1V7, Canada.
E-mail address: Alexa.yakubovich@dal.ca (A.R. Yakubovich).

https://doi.org/10.1016/j.pmedr.2025.103058
Received 2 December 2024; Received in revised form 31 March 2025; Accepted 1 April 2025
Available online 3 April 2025

As in previous public health emergencies, VAW increased during the COVID-19 pandemic (Piquero et al., 2021; Kim and Royle, 2023). In Canada, increased rates of VAW intersected with several high-profile policy initiatives and inquiries, including the first National Action Plan to End Gender-Based Violence, announced in Nova Scotia in November 2022 (Women and Gender Equality Canada, 2022). As a result, there has been a renewed push for the health system to be part of a strengthened societal response to VAW, as an important intervention point for VAW survivors (Dale et al., 2021; Yakubovich et al., 2023). However, little is known about the health system's capacity to take up these calls – especially in light of the continued impacts of the COVID-19 pandemic, which limited capacity for new interventions, particularly those perceived as beyond scope or requiring significant training (Worster et al., 2023). To our knowledge, available Canadian studies on preparedness or practices related to VAW in the health system have been conducted on small-scale samples (n ⟨200) (Peters et al., 2021; Vonkeman et al., 2019; Long et al., 2019; Du Mont et al., 2019; Sivagurunathan et al., 2018; Vonkeman et al., 2017; Sprague et al., 2013; Guillery et al., 2012; McClennan et al., 2008; Bhandari et al., 2008), specific health professional subgroups (e.g., orthopedic surgeons, obstetricians/gynecologists) (Peters et al., 2021; Vonkeman et al., 2019; Long et al., 2019; Du Mont et al., 2019; Sivagurunathan et al., 2018; Vonkeman et al., 2017; Sprague et al., 2013; Guillery et al., 2012; McClennan et al., 2008; Bhandari et al., 2008; Mason et al., 2010; Shearer and Bhandari, 2008; Gallop et al., 1998), or using data from 20 or more years ago (Gallop et al., 1998; Beynon et al., 2012; Gutmanis et al., 2007).

Nova Scotia provides a particularly important opportunity to address this gap in our understanding of health system preparedness to respond to VAW, as recent Canadian events have been particularly concentrated in the province. This includes the 2020 mass casualty – the largest mass shooting in Canadian history – rooted in misogyny and VAW, and resulting Mass Casualty Commission (Mass Casualty Commission, 2023), as well as the Desmond Fatality Inquiry, a provincial inquiry into the murder-suicide of the Desmond family, including the role of IPV and failures in the health system response (Scovil, 2024). Notably, Nova Scotia has the highest prevalence of self-reported IPV among women of all Canadian provinces (Cotter, 2021) and an annual provincial rate of femicide higher than the national average based on the most recent data (Dawson et al., 2023). On September 12, 2024, Nova Scotia became the first Canadian province to pass legislation declaring IPV an epidemic, with others expected to follow suit (Amyotte, 2024). The current study aimed to, for the first time, create a snapshot of health system readiness to respond to domestic and sexualized violence – the most common forms of VAW – in Nova Scotia, including both health services and policy, and identify areas in need of capacity-building to take up provincial- and federal-level recommendations.

2. Methods

Data were collected as part of The Interprovincial VAW Project (The IPV Project), which aims to strengthen systems responses to VAW across Canada, during and beyond public health emergencies. The Interprovincial VAW Project uses integrated knowledge translation (Jull et al., 2017), with health and VAW knowledge users (including service providers, policymakers, leaders, advocates, program developers and evaluators, and women with lived experience of violence) involved as collaborators and team members in all stages of the research.

2.1. Design and recruitment

We conducted an online, mixed-methods survey open to all professionals in health-related fields – including government, healthcare, public health, or community health organizations – in Nova Scotia from 22 November 2023 to 6 February 2024 on REDCap, a secure, web-based software platform, hosted at Dalhousie University. We used a variety of recruitment methods with the goal of collecting as large and diverse a sample as possible, prioritizing individuals and organizations working in areas most relevant to domestic and sexualized violence (e.g., mental health and addictions, sexual and reproductive health, emergency, trauma, primary healthcare, public health) (García-Moreno et al., 2015; Melendez-Torres et al., 2023). This goal reflected the multidisciplinary nature of both (a) those targeted by provincial- and federal-level recommendations on responding to VAW and (b) an increasing number of healthcare practice settings, which makes it challenging to locate appropriate sampling frames for recruitment (Hutchinson and Sutherland, 2019). To estimate response rates, each provincial health authority (Nova Scotia Health and IWK Health) provided approximate numbers of employees within priority areas. We directly emailed and called health organizations and departments to share information on the study (emails and posters with the open survey link), contacted professional associations and networks for circulation, and presented at meetings and events. We also individually emailed or called professionals using public registries for licensed health professionals in the province. Our collaborating knowledge users supported participant recruitment by facilitating meeting presentations, circulating our materials to their teams and networks, and identifying appropriate recruitment outlets. We monitored sample characteristics throughout recruitment (e.g., sociodemographics) and used this information to inform ongoing recruitment efforts. More details on study recruitment are provided in the appendix (box a1).

2.2. Measures and administration

The survey was approximately 15 min long. Participants first completed an eligibility screener (inclusion criteria were 19 years or older and working for a health-related organization in Nova Scotia). Those who passed the screener then received questions on their work information and select items from the Physician Readiness to Manage IPV Scale (PREMIS) (Short et al., 2006). PREMIS is the most widely used measure of outcomes of healthcare training interventions for IPV (Kalra et al., 2021). We added and adapted some items to cover both domestic and sexualized violence (rather than just IPV), be applicable to all health professionals (rather than just physicians), and enhance relevance to the Nova Scotia context. Health system 'readiness' to respond to violence was conceptualized at structural/organizational and individual levels, including questions on: organizational policies and procedures about domestic and sexualized violence; training and perceived and actual knowledge around violence; and personal practice (e.g., select items from the preparation, workplace issues, and victim understanding opinion subscales, perceived preparation, and screening practices) (García-Moreno et al., 2015; Melendez-Torres et al., 2023; Short et al., 2006; Hegarty et al., 2020). Participants received certain questions depending on whether they indicated they provided or managed patient/client-facing care or not. The survey ended with demographic questions. The survey was adapted and piloted by the research team and eligible participants, through iterative rounds of feedback prior to launch. See appendix (table a1) for a summary of the instrument (full instrument available upon request). Participants could enter a draw for one of three $100 gift cards to their preferred Canadian store as an honorarium.

2.3. Data validation

Due to the risk of fraudulent participation in online research, any public-facing forum that shared study information (e.g., social media posts) included direction to contact our team email address rather than the survey link. Throughout the survey's run, the research team periodically searched social media to ensure the link had not been shared publicly. All data were subject to a validation protocol prior to inclusion. Two team members independently screened data, with a third reviewer acting as arbiter as needed. Reviewers checked: survey completion times, names and email addresses, and consistency within survey

responses. Checking data consistency was facilitated by several questions included at different parts of the survey that should have aligned (e.g., year of birth and age). Finally, reviewers checked for suspicious patterns within and across survey responses (e.g., similar or nonsensical open-ended responses). Reviewers also identified and removed any duplicate participants (i.e., participants who took the survey more than once). Fifty-six survey responses were excluded following data validation: $n = 49$ duplicates and $n = 7$ with eligibility and/or data quality concerns.

2.4. Statistical analysis and ethics approval

The current paper focuses on a descriptive analysis of our quantitative data (including calculating medians, interquartile ranges, and cross-tabulations, as relevant) and the Checklist for Reporting Results of Internet *E*-Surveys (CHERRIES) informed our reporting (Eysenbach, 2004). Participants provided written informed consent prior to starting the survey. All available data from complete and incomplete surveys were analyzed (participants were informed they could contact the research team if they wanted their data withdrawn prior to analysis). The Nova Scotia Health Research Ethics Board approved this study (REB#1028425).

3. Results

Table 1 summarizes the sociodemographic and professional characteristics of the sample ($N = 1649$) (completion rate: 81 %, or $n = 1340$). Of note, most participants (93 %) were working in specializations that would be more likely to deal with issues related to domestic or sexualized violence. Estimated response rates ranged from 48 % for sexual assault nurse examiners and violence prevention, intervention, and response to 11 % for primary healthcare (see appendix, table a2).

3.1. Professional focus on violence

Among those involved in patient-facing work (either as direct support or leadership), 43 % reported seeing at least one case of domestic or sexualized violence in their work in the last six months (see Fig. 1). Participants who reported seeing recent cases of abuse in their work more commonly indicated that addressing violence was part of their team's goals. However, 52 % of those who saw one to five cases and 38 % of those who saw six or more cases reported that addressing violence was not part of their team's goals.

As shown in Fig. 2a (appendix), only 35 % of all participants (including those providing patient-facing work and those who do not) reported that addressing domestic or sexualized violence was part of their team's objectives or goals. Participants involved in patient-facing work more commonly indicated that addressing violence was part of their goals compared to those who were not (36 % vs. 19 %). Domestic violence, IPV, sexualized violence, and child abuse were the most common forms of violence addressed by participants' teams. The most common reasons that participants endorsed for why their teams did not focus on violence were a lack of relevance to the type of work they do, awareness or education around violence, or leadership support (Fig. 2b).

3.2. Knowledge and opinions on violence

Most participants reported that they knew nothing or a little about the prevalence of domestic or sexualized violence in Nova Scotia (62 %) and nothing or a little about their role in responding to or preventing domestic or sexualized violence (52 %). Nearly half of participants (43 %) reported that they did not know which organizations or resources to refer to if issues of domestic or sexualized violence come up in their work. Participants got a median of 4 out of 6 knowledge-testing questions correct (interquartile range, IQR: 3–5). Participants most commonly did not know that policies that otherwise promote public

Table 1
Summary characteristics of 1649 health professionals who participated in a cross-sectional survey on knowledge, practices, and experiences related to domestic and sexualized violence in Nova Scotia, Canada from November 2023 to February 2024.

Characteristic	N = 1649
Socio-demographics	
Race and ethnicity[a] ($n = 1346$), N (%)	
Only white selected	1092 (81)
Acadian	85 (5)
Indigenous	47 (3)
Black	30 (2)
East or Southeast Asian	25 (2)
South Asian	23 (2)
Middle Eastern	19 (1)
Latino	15 (1)
Jewish	8 (1)
Other	8 (<1)
Prefer not to answer or don't know	38 (2)
Gender ($n = 1333$), N (%)	
Cis woman	1206 (90)
Gender minority[b]	25 (2)
Cis man	102 (8)
Sexual identity ($n = 1337$), N (%)	
Heterosexual	1143 (86)
Gay or lesbian	37 (3)
Bisexual	70 (5)
Queer	45 (3)
Not sure, questioning, or other	25 (2)
Age ($n = 1128$), median in years (interquartile range)	41 (33–51)
Born outside of Canada ($n = 1343$), N (%)	
Yes	109 (8)
No	1234 (92)
Education above bachelor's (n = 1343), N (%)	594 (44)
Professional information	
Organization, N (%)[a]	
Nova Scotia Health	1077 (65)
IWK Health	293 (18)
Community health organization or private practice	392 (24)
Government	83 (5)
Education, N (%)[a]	
Non-clinical	329 (20)
Business administration	62 (4)
Health administration	57 (3)
Public health	46 (3)
Community health	26 (2)
Biomedical science	15 (1)
Epidemiology	7 (<1)
Law	6 (<1)
Engineering	5 (<1)
Other	149 (9)
Clinical	1320 (80)
Nurses	585 (35)
Physicians (including residents)	179 (11)
Social workers	156 (9)
Healthcare assistants	69 (4)
Psychologists	65 (4)
Occupational therapists	48 (3)
Counselors	44 (3)
Nutritionists and dieticians	43 (3)
Clinical therapists	26 (2)
Physiotherapists	24 (1)
Dentists	14 (1)
Midwives	6 (<1)
Other	165 (10)
Job role, N (%)[a]	
Direct support to patients, clients, or community members	1413 (86)
Managing or leading people providing direct support	532 (32)
No direct support (e.g., policy, research)	147 (9)
Specialization, N (%)[a,c]	
Leadership	567 (34)
Mental health and addictions	341 (21)
Primary healthcare	260 (16)
Maternity and early years	193 (12)
Emergency, critical care, and trauma	185 (11)
Long-term and continuing care	156 (9)
Public health	154 (9)

(*continued on next page*)

Table 1 (*continued*)

Characteristic	N = 1649
Community health organization	103 (6)
Children's health	101 (6)
Surgical services	83 (5)
Rehabilitative and restorative care	60 (4)
Sexual assault nurse examiner	52 (3)
Diet and nutrition	29 (2)
Sexual health	20 (1)
Senior leadership	19 (1)
Safety	10 (<1)
Health zone, N (%)	
Central	619 (38)
Western	334 (20)
Eastern	300 (18)
Northern	262 (16)
Provincial	301 (18)
Areas serviced or focused on in work, N (%)	
Only rural or remote	540 (33)
Only urban	378 (23)
Urban and rural/remote	255 (15)
Provincial	399 (24)
Not applicable	77 (5)
Start date in current role, N (%)	
Before the COVID-19 pandemic (11 March 2020)	908 (55)
After the COVID-19 pandemic	741 (45)

Note. N is number.

[a] Categories are not mutually exclusive and therefore percentages may not add up to 100. The measure for race and ethnicity was based on the Ontario data standards for the identification and monitoring of systemic race; however, we also included 'Jewish' and 'Acadian,' as per the latest Canadian census question on ethnic origins to capture the most frequently reported non-Indigenous examples not adequately captured by the existing categories (see appendix for references).

[b] Cell sizes are too small ($n < 5$) to parse into more detailed categories.

[c] The following specializations were deemed a priori to be more likely to deal with issues related to domestic or sexualized violence (see appendix, box a1 for further details).

health can exacerbate domestic violence (72 % incorrect or unsure) and that the strongest single risk factor for becoming a victim of intimate partner homicide is being female (47 % incorrect or unsure) (see appendix, fig. a1).

Table 2 summarizes participants' responses on their opinions and perceived preparation regarding managing domestic or sexualized violence (scored from 1 to 7, where 7 indicates better preparedness to manage violence). Participants scored much more positively on items related to their individual-level attitudes around victim understanding (median score 6 out of 7) compared to items that measured organizational and systems-level support (workplace issues: median score 4 out of 7; general preparation: median score 4 out of 7; and perceived preparation to do specific tasks related to managing violence among patients: median score 3 out of 7).

3.3. Organizational and systems-level responses to violence

Table 3 summarizes participants' training, screening practices, and data availability around domestic or sexualized violence. Most participants (76 %) reported that they had received at least some training on domestic or sexualized violence. Most of these participants indicated that they engaged in one type of training (IQR 1–3), most commonly classroom training (48 %) or attending a lecture or talk (41 %). Only 39 % of trained participants indicated that they received this training after March 2020 (13 % reported that their training occurred more than 10 years ago). Among those who manage patient-facing teams, only 22 % indicated that they provided training opportunities for their staff. These proportions were consistent for those participants who reported seeing recent cases of abuse in their work versus those who did not.

Most participants involved in patient-facing work reported that they do not have or are not aware of screening practices in their team for domestic or sexualized violence (70 %). Among those that do screen, this most often entailed screening all new patients (54 %) or those with abuse indicators (36 %). Although most participants (68 %) collected or had access to sociodemographic data on patients, clients, or community members, only 28 % reported having access to data on domestic or sexualized violence. In line with participants' professional foci (Fig. 2), this most commonly included domestic (75 %), intimate partner (69 %), or sexualized violence (65 %), or child abuse (65 %) and less commonly included human trafficking (42 %) or elder abuse (42 %). Participants who reported that their team goals focused on these forms of violence

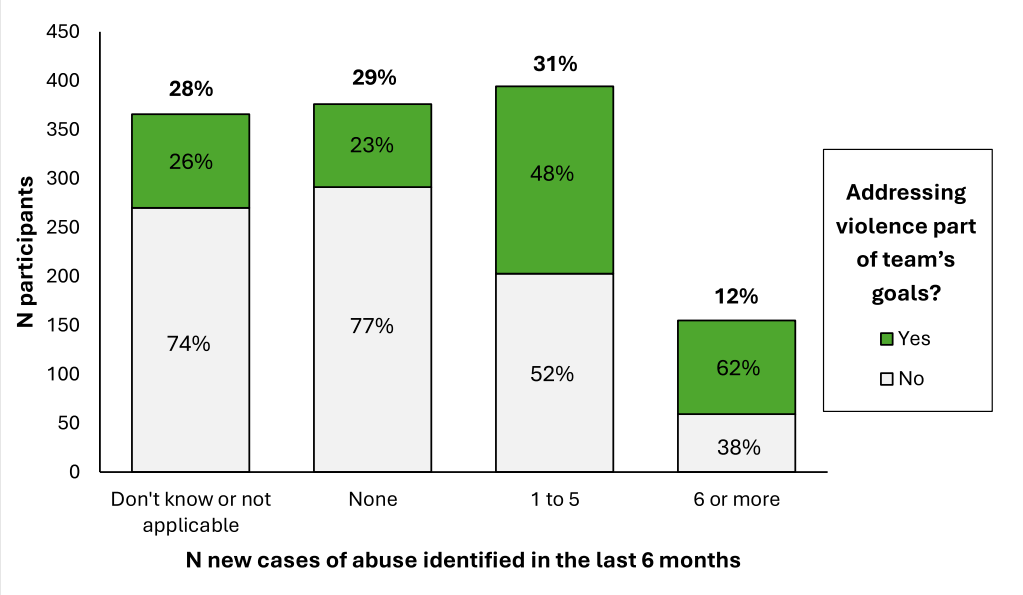

Fig. 1. Number of new cases of domestic or sexualized violence that participants involved in patient-facing work estimated seeing in their work in the last six months by the percentage of participants who reported addressing domestic or sexualized violence was part of their team's goals ($n = 1291$) in a cross-sectional survey of health professionals in Nova Scotia, Canada from November 2023 to February 2024.

Footnote: Participants are classified as "no" if they reported that addressing domestic or sexualized violence was not part of their team's goals or that they did not know.

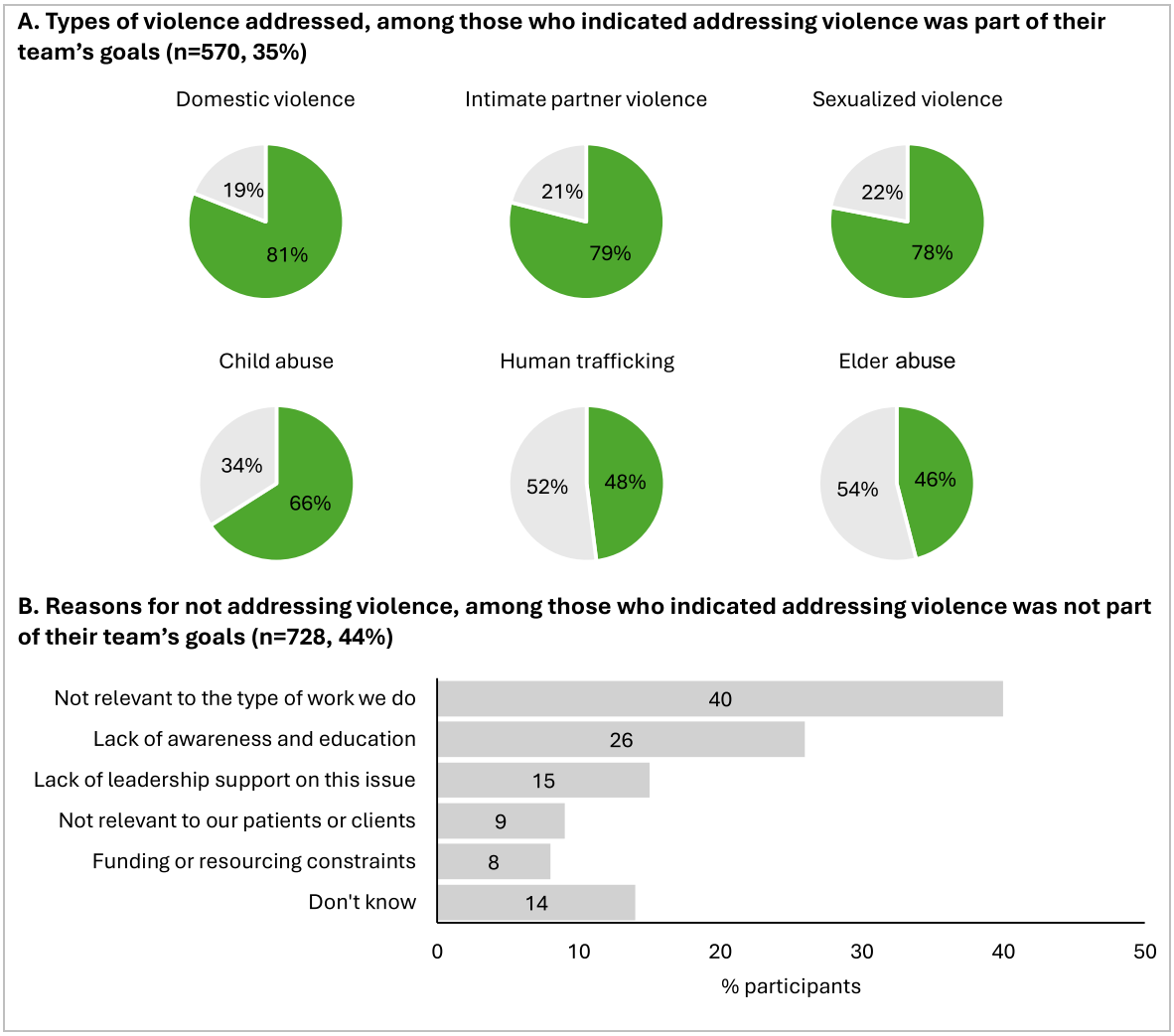

Fig. 2. Focus on addressing domestic or sexualized violence among 1649 health professionals who participated in a cross-sectional survey in Nova Scotia, Canada from November 2023 to February 2024.
Footnote: $n = 351$ participants (21 %) reported that they did not know if their team's objectives or goals addressed domestic or sexualized violence.

more commonly reported having access to these data. Only 14 % of participants who reported having access to any data on domestic or sexualized violence reported that these data could be easily aggregated across individuals.

Fig. 3 summarizes characteristics of the current response to domestic and sexualized violence among patients as reported by participants who indicated they screened for violence or saw recent cases in their work. Most participants (64 %) reported that they provide education or resource materials to patients who have experienced domestic or sexualized violence, however, in most cases participants qualified they only do this when it is safe or upon request. A minority of participants reported having adequate referral resources at their worksite (27 %) or knowledge of referral resources in the community (39 %). The most common challenges participants reported in responding to violence since March 2020 were: increased workload or staffing shortages and decreased availability of supports to refer patients or clients to. The most common opportunities were: having more awareness of domestic or sexualized violence among patients and visitor restrictions making it easier to ask patients or clients about potential violence.

4. Discussion

With high-profile cases of intimate partner homicide, IPV-related gun violence, and pandemic-related increases in VAW, political pressure for an all-of-society response to VAW, including the health system, is at an all-time high in Canada, and especially Nova Scotia (Mass Casualty Commission, 2023). Yet our winter 2023–24 survey of 1649 health professionals, working predominantly in areas more likely to manage issues related to domestic or sexualized violence in Nova Scotia, identified significant gaps in the sector's preparedness to respond to violence. Most participants reported that addressing violence was not part of their team's goals, they do not currently have systematic practices for managing violence (including screening or data collection), and they lacked knowledge about violence, including around their role in responding to domestic or sexualized violence. Despite this, nearly half of participants reported they saw new cases of domestic or sexualized violence in their work within the previous six months. Among those who had seen recent cases, a minority of participants reported having adequate referral resources at their worksite, knowledge of available community resources, or up-to-date training on domestic or sexualized violence. While participants tended to perform well on individual-level items related to readiness to respond to violence (including actual knowledge on domestic or sexualized violence and victim understanding), they tended to report a lack of organizational and systems-level support (including workplace issues and adequate preparation).

Our results provide a comprehensive snapshot of the state of health system capacity to respond to domestic and sexualized violence across priority program areas, including roles that are and are not patient-

Table 2
Attitudes and beliefs around domestic and sexualized violence among 1649 health professionals who participated in a cross-sectional survey in Nova Scotia, Canada from November 2023 to February 2024.

Adapted Scales from Physician Readiness to Manage Intimate Partner Violence Scale (PREMIS) (Short et al., 2006)	Median (IQR)
Opinions scale on victim understanding (1 = strongly disagree to 7 = strongly agree)	
Victims of abuse could leave the relationship if they wanted to.[a]	1.0 (1.0–2.0)
Screening for domestic or sexualized violence is likely to offend those who are screened.[a]	2.0 (2.0–4.0)
If a victim/survivor of domestic or sexualized violence does not acknowledge the abuse, there is very little that I/our staff can do to help.[a]	3.0 (2.0–4.0)
Total score (McDonald's ω = 0.46)[b]	**5.7 (5.0–6.3)**
Opinions scale on workplace issues (1 = strongly disagree to 7 = strongly agree)	
My practice setting allows me/my staff adequate time to respond to survivors of domestic or sexualized violence.	3.0 (2.0–5.0)
I/my staff have contacted services within the community to establish referrals for survivors of domestic or sexualized violence.	4.0 (2.0–5.0)
There is adequate private space for me/my staff to provide care for survivors of domestic or sexualized violence.	4.0 (2.0–6.0)
My workplace encourages me/our staff to respond to domestic or sexualized violence.	4.0 (3.0–6.0)
Total score (McDonald's ω = 0.77)[b]	**3.8 (2.8–5.0)**
Opinions scale on preparation (1 = strongly disagree to 7 = strongly agree)	
I/my staff do not have sufficient training to assist individuals in addressing situations of domestic or sexualized violence.[a]	5.0 (3.0–6.0)
I/my staff have the necessary skills to discuss abuse with a survivor of domestic or sexualized violence who is:	
A man	3.0 (2.0–5.0)
Gender diverse or transgender	3.0 (2.0–5.0)
From a different cultural/ethnic background	3.0 (2.0–5.0)
A woman	4.0 (2.0–5.0)
Health professionals do not have the knowledge to assist patients/clients in addressing domestic or sexualized violence.[a]	3.0 (2.0–4.0)
Total score (McDonald's ω = 0.90)[b]	**3.7 (2.7–4.7)**
Perceived preparation scale (1 = not prepared to 7 = quite well prepared)	
Conduct a safety assessment for the survivors' children	2.0 (1.0–4.0)
Help a survivor assess their danger	3.0 (2.0–5.0)
Help a survivor create a safety plan	3.0 (1.0–5.0)
Appropriately ask questions and respond to disclosures about domestic or sexualized violence	4.0 (2.0–5.0)
Document experiences of violence in patient's/client's chart	4.0 (2.0–5.0)
Identify indicators of domestic or sexualized violence based on patient/client history or physical exam	4.0 (2.0–5.0)
Total score (McDonald's ω = 0.94)[b]	**3.2 (2.0–4.7)**

Note. IQR is interquartile range. Total scores were computed by averaging the scores for each item within a scale, with items reverse coded as indicated, so that higher scores indicate better readiness to manage violence. Items are listed in order from worst to best scores within each scale.

[a] Item reverse coded for total score.

[b] Omega coefficient (McDonald's ω) was used to estimate internal consistency of scale items. Generally ω > 0.70 is considered acceptable. Victim understanding items had lower internal consistency due to the item "victims of abuse could leave the relationship if they wanted to," which relatively few participants reported disagreeing with. McDonald's ω requires at least three items, so this item could not be dropped from the scale.

facing (e.g., decision or policy-making positions), in one of Canada's provinces most impacted by this violence. These findings critically extend available Canadian studies on healthcare readiness to respond to domestic or sexualized violence from the last 25 years. Recent studies have been conducted with specific professional groups, including orthopedic residents (Peters et al., 2021), emergency department staff (Vonkeman et al., 2019), obstetricians/gynecologists (Long et al., 2019), and hand therapists (Sivagurunathan et al., 2018), consistently finding minimal training, preparation, screening practices, and documentation around domestic or sexualized violence among participants. Similar to our investigation, a survey of nurses and physicians ($n = 931$) conducted in Ontario in 2004 found that most participants had seen recent cases of IPV in their work but were not routinely screening for violence among patients (Gutmanis et al., 2007). In contrast to our findings, however, this Ontario study also found that most participants had never received formal training around IPV, which, along with years of experience, was correlated with greater perceived preparation to manage violence. In our study, most Nova Scotia participants had received at least some training around domestic or sexualized violence, but this commonly took place prior to March 2020. In addition, 'training' most often entailed healthcare classroom-based training (which is typically no more than one to five hours in a 4-year program (Sprague et al., 2018)) or attending a lecture or talk. These findings provide important context around the need for updated professional education as well as implementation and/or awareness building around organizational policies and practices regarding responding to violence among patients – key components of strengthening both individual- and systems-level responses to VAW (García-Moreno et al., 2015).

The current study further identified specific knowledge gaps, including a lack of systematic awareness among participants of the potential for health policies to have unintended consequences on domestic or sexualized violence. This is notable given the harmful effects of public health measures of physical distancing and lockdown on women sheltering in place with abusers (Piquero et al., 2021) and infection prevention and control measures on VAW organizations during the COVID-19 pandemic (Wathen et al., 2022; Michaelsen et al., 2025). It is only with this awareness that buffering measures or a trauma- (and violence-) informed approach to policymaking can be implemented (Bowen and Murshid, 2016; Wathen and Mantler, 2022). Another significant knowledge gap was around female sex being the single greatest risk factor for becoming a victim of intimate partner homicide (globally (Stöckl et al., 2013) and in Canada (Statistics Canada, 2023)). Understanding the gendered dynamics of domestic and sexualized violence is critical to promoting a gender inclusive approach to health care and policy that does not become a gender neutral or blind approach (e.g., failing to attend to gendered risk factors or warning signs for violence) (García-Moreno et al., 2015; Dawson et al., 2023).

Effective strategies for strengthening the current capacity of health systems to respond to VAW in Nova Scotia, and across Canada, will require ongoing institutional support for large-scale, coordinated action

Table 3
Professional practices around domestic and sexualized violence among 1649 health professionals who participated in a cross-sectional survey in Nova Scotia, Canada from November 2023 to February 2024.

Variable	N (%)
Training	
Received any training on domestic or sexualized violence	
No	392 (24)
Yes	1230 (76)
Type of training received	
Medical, nursing, or other school classroom training	592 (48)
Attended a lecture or talk	506 (41)
Read my institution's protocol	455 (37)
Medical, nursing, or other school clinical setting	370 (30)
Attended a skills-based training or workshop	337 (27)
Watched a video	332 (27)
Continuing education program	297 (24)
Residency, fellowship, or other post-graduate training	139 (11)
Other	92 (7)
Date of most recent training	
More than 10 years ago	159 (13)
Before March 2020 but within the last 10 years	464 (38)
After March 2020	478 (39)
Don't remember	125 (10)
Provided training opportunities for staff to receive training on domestic or sexualized violence[a]	
No	374 (72)
Yes	114 (22)
Don't remember	32 (6)
Screening practices	
Do you or your team currently screen for any forms of domestic or sexualized violence?[b]	
No	682 (51)
Don't know	247 (19)
Yes	398 (30)
All new patients	203 (54)
All patients with abuse indicators on history or exam	134 (36)
All patients periodically	50 (13)
Certain patient/client categories	46 (12)
All new female patients	41 (11)
All female patients periodically	22 (6)
Other	46 (12)
Data availability	
Collect or have access to information from patients, clients, or community members on…	
Any socio-demographic characteristics	
No	243 (18)
Don't know	193 (14)
Yes	935 (68)
Any form of domestic or sexualized violence	
No	554 (41)
Don't know	424 (31)
Yes	382 (28)
Domestic violence	285 (75)
Intimate partner violence	264 (69)
Sexualized violence	250 (65)
Child abuse	250 (65)
Human trafficking	160 (42)
Elder abuse	159 (42)
Other	91 (24)

Note. N is number.
[a] Only asked of participants who indicate they manage teams who directly support patients or clients ($n = 532$).
[b] Only asked of participants involved in any patient-facing work ($n = 1502$).

(García-Moreno et al., 2015; Hegarty et al., 2020). This includes establishing VAW as a health system priority, developing and implementing clear screening protocols that are appropriate to the clinical context, strong referral pathways to high-quality supportive services, team collaboration, and providing appropriate time and resources (Melendez-Torres et al., 2023). Institutional support should also include continuous, baseline training among healthcare providers, particularly those most likely to see patients at risk of experiencing VAW, to be able to appropriately elicit and manage patients' disclosure of VAW (Melendez-Torres et al., 2023; Kalra et al., 2021). Although evidence is currently limited, training initiatives have been shown to improve healthcare providers' attitudes and responses to VAW among patients (Kalra et al., 2021). The expectation, however, does not have to be for all healthcare providers to become experts on VAW. Instead, advocate-based models – which embed advocates with VAW expertise into the health system – would allow for immediate referral to specialized advocates to manage follow-up care (Dheensa et al., 2020; Feder et al., 2011; Sohal et al., 2020; Robbins et al., 2014). Recent initiatives in Nova Scotia's health system, including the establishment of Nova Scotia Health's Violence Prevention, Intervention, and Response program in 2022, are positive steps forward. Our results serve as an important benchmark to evaluate future progress.

4.1. Limitations

As with most practitioner surveys, our study is limited due to challenges in establishing a sampling frame and evaluating response bias (Hutchinson and Sutherland, 2019). We calculated approximate response rates for priority program areas within each provincial health authority. We expect that these rates are underestimated as we cannot be certain that all individuals listed in program rosters received the survey invitation and we prioritized certain professional groups over others in recruitment efforts (e.g., clinicians, decision-makers, program developers versus clerical, secretarial). However, our estimated response rates were on par with a recent multidisciplinary provider survey on VAW in the USA (Hutchinson and Sutherland, 2019). Of note, this USA study compared three different sampling strategies and found similar results across variables of interest. Our sample had representation across all health zones in Nova Scotia with diverse roles, training, and educational backgrounds and a similar socio-demographic background to the provincial healthcare workforce based on available data (*Health workforce in Canada, 2022 — quick stats. CIHI*, 2024). This representation was consistent across all cross-sections of priority program areas. The one major recruitment shortfall was among cis men. Although most healthcare professionals are female, apart from physicians, we had more female participants across all professional groups, despite targeted recruitment efforts. Engaging cis men in domestic violence research is an identified challenge in the field and one deserving of further attention, particularly for informing prevention and response efforts (Maddox et al., 2018).

In terms of interpreting potential response bias, we anticipate that professionals who had more knowledge, experience, and training on VAW would have been more likely to participate in our voluntary survey. Therefore, our findings likely overestimate preparedness to manage domestic or sexualized violence within Nova Scotia's health system at the time of survey, which underscores the critical need for improved system-wide intervention and policy strategies to respond to VAW to meet current recommendations (Women and Gender Equality Canada, 2022; Mass Casualty Commission, 2023; Scovil, 2024). Our data are vulnerable to measurement error. For instance, given the significant proportion of the sample who reported lacking protocols or training to screen for violence, our data likely underestimate the true number of cases of violence that participants were in contact with – which further supports the urgency of our findings. Our data are cross-sectional, so we cannot determine causal predictors of readiness to manage VAW; however, our study represents a critical, large-scale, descriptive analysis that

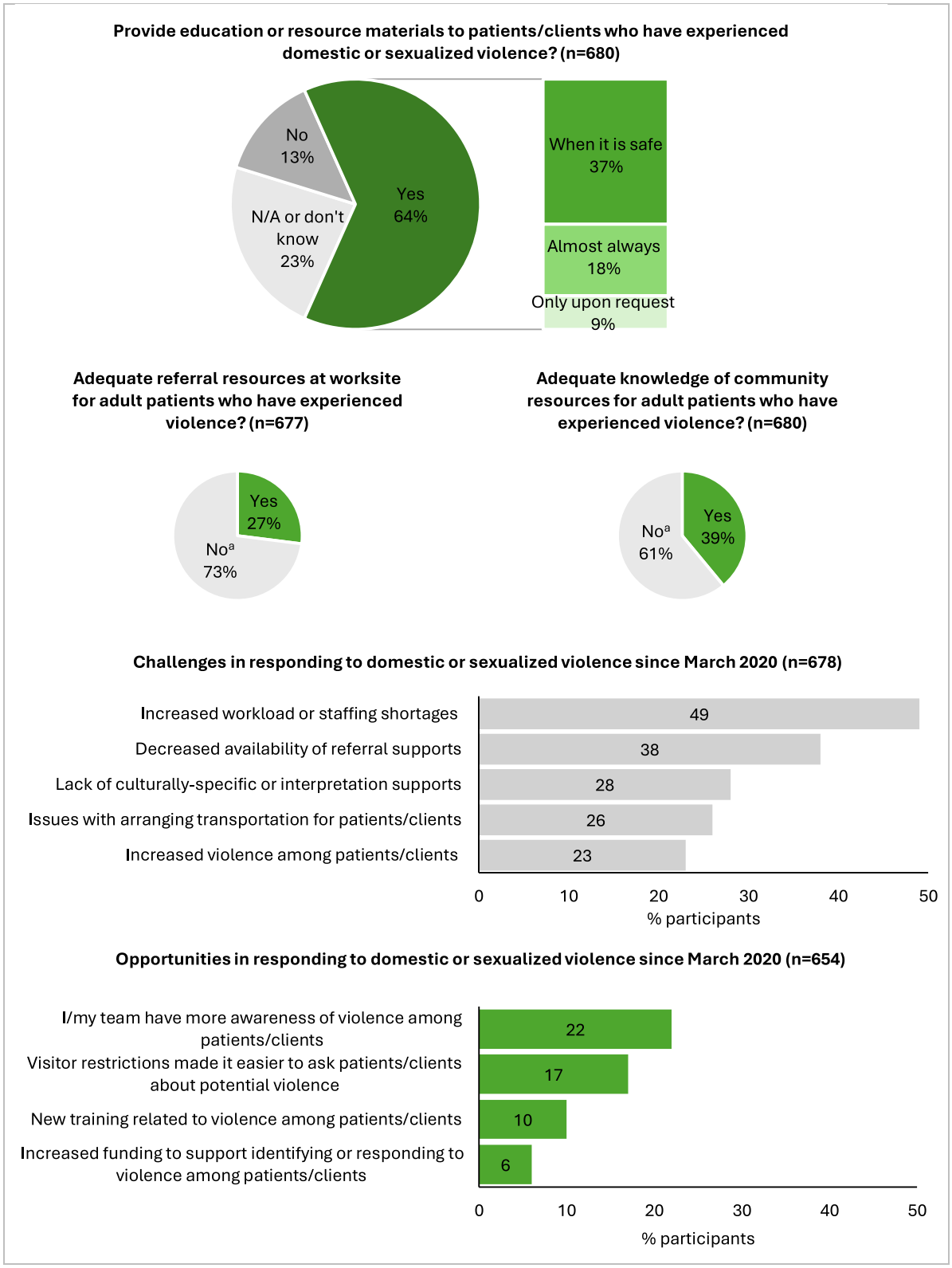

Fig. 3. Management of domestic and sexualized violence among patients, as reported by participants who indicated they screen or have seen recent cases of violence in their work (n = 695) in a cross-sectional survey of health professionals in Nova Scotia, Canada from November 2023 to February 2024.
Footnote: [a]Includes participants who selected "no," "unsure," or "not applicable to my work."

contributes to the existing evidence gap on health system readiness to respond to domestic and sexualized violence in Canada. Future research should evaluate generalizability to other Canadian jurisdictions.

5. Conclusion

To our knowledge, this is the largest study of health system readiness to address domestic or sexualized violence in Canada to date. Our findings outline the gaps that need to be addressed to take up provincial- and national-level recommendations to strengthen health system and intersectoral responses to VAW in one of Canada's most impacted provinces, Nova Scotia, while also demonstrating the import of doing so. Even without systematic screening procedures in place, nearly one in two participants reported they saw recent cases of violence in their work but lacked the appropriate knowledge and resources to respond effectively. There is a clear need for more training on domestic and sexualized violence, improved knowledge of internal and community resources, and stronger organizational directives, protocols, and resources related to identifying and responding to violence among patients across the health system. Given increased rates of VAW, the known health consequences, and limited Canadian data on health system preparedness to respond, similar needs assessments should be conducted across the country, followed by evidence-informed policy and systems change.

Availability of data and material

Data are only available at the aggregate level to ensure participant anonymity.

Authors Contribution

ARY, BS, CPJ, LNP, SJW, RG, SF, SB, and AER collaborated on study conceptualization and methodology. ARY led and BS supported data collection. ARY led and BS and JC supported data analysis. ARY wrote the original manuscript and all authors made critical revisions and approved the final manuscript. ARY was responsible for project administration and funding acquisition.

CRediT authorship contribution statement

Alexa R. Yakubovich: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Bridget Steele:** Writing – review & editing, Methodology, Formal analysis, Data curation, Conceptualization. **Jessie Cullum:** Writing – review & editing, Formal analysis. **Christine P. Johnson:** Writing – review & editing, Methodology, Conceptualization. **Lindsey N. Parker:** Writing – review & editing, Methodology, Conceptualization. **Susan J. Wilson:** Writing – review & editing, Methodology, Conceptualization. **Robert Green:** Writing – review & editing, Methodology, Conceptualization. **Shelley Fashan:** Writing – review & editing, Methodology, Conceptualization. **Stacy Burgess:** Writing – review & editing, Methodology, Conceptualization. **Annette Elliott Rose:** Writing – review & editing, Methodology, Conceptualization.

Ethics approval

The Nova Scotia Health Research Ethics Board approved this study (REB#1028425).

Code availability

Available upon request.

Funding

Canadian Institutes of Health Research (WI2–179955) and Nova Scotia Health Research Fund Award. No funder was involved in study design, collection, analysis, or interpretation of data, writing of the report, or decision to submit the article for publication.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Alexa Yakubovich reports financial support was provided by Canadian Institutes of Health Research. Alexa Yakubovich reports financial support was provided by Nova Scotia Health Authority. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgments

We gratefully acknowledge all members of the research and advisory groups who supported The IPV Project. Thank you to all of our participants, who took the time to contribute their thoughts and experiences to this study.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.pmedr.2025.103058.

Data availability

The data that has been used is confidential.

References

Amyotte, S., 2024. NS Government Unanimously Passes Unifor-Backed NSNDP Bill to Declare Intimate Partner Violence an Epidemic. https://www.unifor.org/news/all-news/ns-government-unanimously-passes-unifor-backed-nsndp-bill-declare-intimate-partner. (Accessed 6 November 2024).

Beynon, C.E., Gutmanis, I.A., Tutty, L.M., Wathen, C.N., MacMillan, H.L., 2012. Why physicians and nurses ask (or don't) about partner violence: a qualitative analysis. BMC Public Health 12 (1), 473.

Bhandari, M., Sprague, S., Tornetta, P.I., et al., 2008. (Mis)perceptions about intimate partner violence in women presenting for Orthopaedic care: a survey of Canadian Orthopaedic surgeons. JBJS 90 (7), 1590–1597.

Bowen, E.A., Murshid, N.S., 2016. Trauma-informed social policy: a conceptual framework for policy analysis and advocacy. Am. J. Public Health 106 (2), 223–229.

Campbell, J.C., 2002. Health consequences of intimate partner violence. Lancet 359 (9314), 1331–1336.

Cotter, A., 2021. Intimate partner violence in Canada, 2018: an overview. Juristat 85-002-X.

Dale, A., Maki, K., Nitia, R., 2021. A Report to Guide the Implementation of a National Action Plan on Violence against Women and Gender-Based Violence. Women's Shelters Canada, Ottawa.

Dawson, M., Zecha, A., Angus, H., 2023. #CallItFemicide: Understanding Sex/Gender-Related Killings of Women and Girls in Canada, 2018–2022. Canadian Femicide Observatory for Justice and Accountability, Guelph.

Dheensa, S., Halliwell, G., Daw, J., Jones, S.K., Feder, G., 2020. "From taboo to routine": a qualitative evaluation of a hospital-based advocacy intervention for domestic violence and abuse. BMC Health Serv. Res. 20 (1).

Du Mont, J., Kosa, S.D., Solomon, S., Macdonald, S., 2019. Assessment of nurses' competence to care for sexually assaulted trans persons: a survey of Ontario's sexual assault/domestic violence treatment Centres. BMJ Open 9 (5), e023880.

Eysenbach, G., 2004. Improving the quality of web surveys: the checklist for reporting results of internet E-surveys (CHERRIES). J. Med. Internet Res. 6 (3), e34.

Feder, G., Davies, R.A., Baird, K., et al., 2011. Identification and referral to improve safety (IRIS) of women experiencing domestic violence with a primary care training and support programme: a cluster randomised controlled trial. Lancet 378 (9805), 1788–1795.

Gallop, R., McCay, E., Austin, W., Bayer, M., Peternelj-Taylor, C., 1998. A survey of psychiatric nurses regarding working with clients who have a history of sexual abuse. J. Am. Psychiatr. Nurses Assoc. 4 (1), 9–17.

García-Moreno, C., Hegarty, K., d'Oliveira, A.F.L., Koziol-McLain, J., Colombini, M., Feder, G., 2015. The health-systems response to violence against women. Lancet 385 (9977), 1567–1579.
Guillery, M.E., Benzies, K.M., Mannion, C., Evans, S., 2012. Postpartum nurses' perceptions of barriers to screening for intimate partner violence: a cross-sectional survey. BMC Nurs. 11 (1), 2.
Gutmanis, I., Beynon, C., Tutty, L., Wathen, C.N., MacMillan, H.L., 2007. Factors influencing identification of and response to intimate partner violence: a survey of physicians and nurses. BMC Public Health 7, 12.
Health workforce in Canada, 2022 — quick stats. CIHI. https://www.cihi.ca/en/topics/health-workforce, 2024.
Hegarty, K., McKibbin, G., Hameed, M., et al., 2020. Health practitioners' readiness to address domestic violence and abuse: a qualitative meta-synthesis. PLoS One 15 (6), e0234067.
Hutchinson, M.K., Sutherland, M.A., 2019. Conducting surveys with multidisciplinary health care providers: current challenges and creative approaches to sampling, recruitment, and data collection. Res. Nurs. Health 42 (6), 458–466.
Jull, J., Giles, A., Graham, I.D., 2017. Community-based participatory research and integrated knowledge translation: advancing the co-creation of knowledge. Implement. Sci. 12 (1), 150.
Kalra, N., Hooker, L., Reisenhofer, S., Di Tanna, G.L., Garcia-Moreno, C., 2021. Training healthcare providers to respond to intimate partner violence against women. Cochrane Database Syst. Rev. 5, CD012423.
Kim, B.H., Royle, M., 2023. Domestic violence in the context of the COVID-19 pandemic: a synthesis of systematic reviews. Trauma Violence Abuse 1–18.
Krug, E.G., Dahlberg, L.L., Mercy, J.A., Zwi, A.B., Lozano, R. (Eds.), 2002. World Report on Violence and Health. World Health Organization, Geneva.
Long, A.J., Golfar, A., Olson, D.M., 2019. Screening in the prenatal period for intimate partner violence and history of abuse: a survey of Edmonton obstetrician/Gynaecologists. J. Obstet. Gynaecol. Can. 41 (1), 38–45.
Maddox, R., O'Campo, P., Grove, J., et al., 2018. Identifying how to engage men in domestic violence research: a concept mapping study. J. Fam. Violence 34 (8), 781–793.
Mason, R., Schwartz, B., Burgess, R., Irwin, E., 2010. Emergency medical services: a resource for victims of domestic violence? Emerg. Med. J. 27 (7), 561–564.
Mass Casualty Commission, 2023. Turning the tide together: final report of the mass casualty commission executive summary and recommendations. Truro 1–72.
McClennan, S., Worster, A., MacMillan, H., 2008. Caring for victims of intimate partner violence: a survey of Canadian emergency departments. Can. J. Emerg. Med. 10 (4), 325–328.
Melendez-Torres, G.J., Dowdell, E.B., Kelley, S.J., Lewis-O'Connor, A., 2023. Strategies for identification of intimate partner violence in healthcare settings: overview of reviews and realist synthesis. J. Fam. Violence 38 (7), 1457–1468. https://doi.org/10.1007/s10896-022-00463-w.
Michaelsen, S., Jordan, S.P., Zarowsky, C., Koski, A., 2025. Challenges to the provision of Services for Sexual and Intimate Partner Violence in Canada during the COVID-19 pandemic: results of a Nationwide web-based survey. Violence Against Women. 31 (6–7), 1536–1556. https://doi.org/10.1177/10778012241228286.
Peters, M.J., Roffey, D.M., Lefaivre, K.A., 2021. Effect of orthopaedic resident education on screening for intimate partner violence. Inj. Epidemiol. 8 (1), 62.
Piquero, A.R., Jennings, W.G., Jemison, E., Kaukinen, C., Knaul, F.M., 2021. Domestic violence during the COVID-19 pandemic: evidence from a systematic review and meta-analysis. J. Crim. Just. 74, 1–10.
Robbins, R., McLaughlin, H., Banks, C., Bellamy, C., Thackray, D., 2014. Domestic violence and multi-agency risk assessment conferences (MARACs): a scoping review. The Journal of Adult Protection. 16 (6), 389–398.
Scovil, P.B., 2024. In: Desmond, Shanna, Desmond, Brenda, Desmond, Lionel (Eds.), In the Matter of a Fatality Inquiry Regarding the Deaths of Aaliyah Desmond. Port Hawksbury: Provincial Court of Nova Scotia.
Shearer, H.M., Bhandari, M., 2008. Ontario chiropractors' knowledge, attitudes, and beliefs about intimate partner violence among their patients: a cross-sectional survey. Journal of Manipulative & Physiological Therapeutics. 31 (6), 424–433.
Short, L.M., Alpert, E., Harris Jr., J.M., Surprenant, Z.J., 2006. PREMIS: a comprehensive and reliable tool for measuring physician readiness to manage IPV. Am. J. Prev. Med. 30 (2), 173–180.
Sivagurunathan, M., Packham, T., Dimopoulos, L., et al., 2018. Perceptions of preparedness and intimate partner violence screening practices amongst hand therapists. Hand Therapy. 23 (4), 139–147.
Sohal, A.H., Feder, G., Boomla, K., et al., 2020. Improving the healthcare response to domestic violence and abuse in UK primary care: interrupted time series evaluation of a system-level training and support programme. BMC Med. 18 (1), 48.
Sprague, S., Kaloty, R., Madden, K., Dosanjh, S., Mathews, D.J., Bhandari, M., 2013. Perceptions of intimate partner violence: a cross sectional survey of surgical residents and medical students. J Inj Violence Res. 5 (1), 1–10.
Sprague, S., Swaminathan, A., Slobogean, G.P., et al., 2018. A scoping review of intimate partner violence educational programs for health care professionals. Women Health 58 (10), 1192–1206.
Statistics Canada, 2023. Trends in police-reported family violence and intimate partner violence in Canada, 2022. The Daily. 11-001-X, 1–6.
Stöckl, H., Devries, K., Rotstein, A., et al., 2013. The global prevalence of intimate partner homicide: a systematic review. Lancet 382 (9895), 859–865.
Vonkeman, J., Atkinson, P., Fraser, J., McCloskey, R., 2017. P124: determining ED staff awareness and knowledge of intimate partner violence and available tools. CJEM 19, S120.
Vonkeman, J., Atkinson, P., Fraser, J., McCloskey, R., Boyle, A., 2019. Intimate partner violence documentation and awareness in an urban emergency department. Cureus 11 (12), e6493.
Wathen, C.N., Mantler, T., 2022. Trauma- and violence-informed care: orienting intimate partner violence interventions to equity. Curr. Epidemiol. Rep. 9 (4), 233–244.
Wathen, C.N., Burd, C., MacGregor, J.C.D., et al., 2022. "We're so limited with what we actually can do if we follow all the rules": a qualitative study of the impact of COVID-19 public health protocols on violence against women services. BMC Public Health 22 (1), 1175.
WHO, 2012. Understanding and Addressing Violence against Women and Girls: Intimate Partner Violence. WHO, Geneva.
Women and Gender Equality Canada, 2022. National Action Plan to End Gender-Based Violence a Significant Step towards Gender Equality [Press Release]. Government of Canada, Pictou County.
Worster, A., Lang, E., Thombs, B.D., et al., 2023. Universal screening in the emergency department for intimate partner violence would consume scarce resources without improving patient well-being. CJEM 25 (6), 462–464.
Yakubovich, A.R., Steele, B., Moses, C., et al., 2023. Recommendations for Canada's National Action Plan to end gender-based violence: perspectives from leaders, service providers and survivors in Canada's largest city during the COVID-19 pandemic. Health Promot. Chronic Dis. Prev. Can. 43 (4), 155–170.