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Providing trans-affirming care for sexual assault survivors: An evaluation of a novel curriculum for forensic nurses

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ABSTRACT

Background: Transgender (trans) persons experience high rates of sexual victimization, often face discrimination by healthcare providers, and may have unique and diverse needs post-victimization. However, there remains a lack of comprehensive trans-specific training among healthcare professionals, including nurses.

Objectives: Our primary objective was to develop and evaluate a novel curriculum for its efficacy in improving the competence of forensic nurses in providing sensitive, informed, and appropriate healthcare services for trans survivors of sexual assault.

Methods: The curriculum was evaluated among forensic nurses working in sexual assault treatment centres across Ontario, Canada. Forty-seven nurses participated in this study, all of whom were selected by their respective programs to receive in-depth formal Sexual Assault Nurse Examiner training. Changes in participants' perceived expertise and competence in providing trans-affirming care were assessed on a 5-point Likert scale (5 being the highest level) using pre- and post-training questionnaires. Participants were asked to indicate their level of agreement with 31 competency-based statements, which were organized thematically into four domains: Initial Assessment, Medical Care, Forensic Examination, and Discharge and Referral. A clinical vignette assessed participants' demonstrated competence in providing care across four questions.

Results: Participants level of expertise improved significantly from pre- to post-training (Mean [M] = 1.89, Standard Deviation [SD] = 0.84 vs. M = 3.47, SD = 0.62, $p < 001$), as well as their competence across all content domains: initial assessment (M = 3.79, SD = 0.63 vs. M = 4.70, SD = 0.31, $p < .001$), medical care (M = 3.33, SD = 0.73 vs. M = 4.69, SD = 0.33, $p < .001$), forensic examination (M = 3.40, SD = 0.75 vs. M = 4.72, SD = 0.35, $p < .001$), and discharge and referral (M = 3.62, SD = 0.80 vs. M = 4.59, SD = 0.40, $p < .001$). There were also significant improvements in competence associated with the clinical vignette pre- to post- training (M score = 2.13, SD = 1.06 vs. M score = 3.23, SD = 0.87, $p < .001$).

Conclusions: The success of this curriculum may have relevance to the more than 5000 members of the International Association of Forensic Nurses who practice and support forensic nursing across the globe, as well as to other healthcare professionals.

1. Introduction

Across the globe, forensic nursing programs increasingly have been developed to address the health consequences associated with violence against women, men, and children, including sexual assault and intimate partner violence, and to provide medicolegal supports (International Association of Forensic Nurses, 2014–2019). In Ontario, Canada, there are 35 established forensic nursing programs throughout the province, also known as Sexual Assault/Domestic Violence Treatment Centres (SA/DVTCs). These centres provide acute post-sexual assault healthcare services to geographically and culturally diverse populations (e.g., urban, suburban, rural dwellers, Indigenous persons, Franco-Ontarians) including adults who have recently been sexually assaulted and/or physically assaulted by an intimate partner, and children who have been sexually or physically abused (Du Mont et al., 2014). The services encompass acute post-sexual assault care, including

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crisis intervention, emergency medical care, medico-legal evidence collection (e.g., documentation of injuries, collection of biological samples), discharge planning, follow-up care, short- and longer-term counseling, and referral to community agencies for ongoing supports (e.g., housing and legal services) (Du Mont et al., 2002).

Sexual Assault Nurse Examiner (SANE) training is the key educational component for nurses working within Ontario's SA/DVTCs. The Ontario SANE training program requires nurses to complete 16 online learning modules in advance of a 30 h in-person training, which includes information about medico-legal evidence collection, strangulation, documentation and interpretation of injures, and testifying in court, among other topics (Ontario Network of Sexual Assault/Domestic Violence Treatment Centres, 2017). However, this training does not include comprehensive information on how to respond to transgender (trans) survivors of sexual assault.

Trans persons, defined in the literature as individuals whose gender identity does not correspond with their assigned sex at birth (Bauer et al., 2017), experience high rates of sexual violence (munson and Cook-Daniels, 2016) and may have differing needs from other survivors of sexual assault of which healthcare providers, including nurses, should be aware (FORGE, 2014). It is therefore critical that healthcare providers are trained to provide sensitive, informed, and appropriate acute care services for trans survivors post sexual assault (Du Mont et al., 2019a). However, in a 2017 survey of staff of Ontario's SA/DVTCs, only 39% of frontline nurses indicated that they had any specialized training to meet the needs of trans survivors of sexual assault (Du Mont et al., 2019b). In this survey, the overwhelming majority (96%) of these nurses strongly agreed/agreed that they would benefit from additional training in the care of trans survivors (Du Mont et al., 2019b). Additionally, when program leaders of these SA/DVTCs were surveyed, 100% stated that their frontline nurses would benefit from trans-specific training (Du Mont et al., 2019a).

The purpose of this study was to develop and evaluate a novel curriculum for its efficacy in improving nurses' perceived expertise, perceived competence, and demonstrated competence in providing appropriate care to trans survivors of sexual assault. A second objective was to evaluate their satisfaction with the structure, content, and delivery of the training. This study was guided by the four-step evaluation model as outlined by Kirkpatrick (1996). This study involved the first two steps, which include: 1) Reaction: evaluation of participant satisfaction with training, and 2) Learning: evaluation of participant knowledge and skills following training (Du Mont et al., 2017b).

2. Method

An advisory committee representing national, provincial, and local organizations with extensive expertise in trans issues related to violence, health, forensic nursing care, and the creation of trainings, guided the conduct of this research (see acknowledgements for a list of advisory committee members). The TREND checklist, designed for non-randomized evaluations, was used to guide the reporting of this study (Des Jarlais et al., 2004) (see supplementary file).

2.1. Participants

The nurses participating in this study were registered with the College of Nurses of Ontario and working within Ontario's SA/DVTCs. All 47 nurses had been selected by their respective programs to receive SANE training. The evaluation of our curriculum was conducted as a part of their 30-h in-class training, which builds on and reinforces the learning in the online modules, completion of which was required in advance of attending the in-class training.

2.2. Curriculum development

The curriculum developed, *Providing Trans-Affirming Care for Sexual Assault Survivors*, is based on evidence-informed competencies for nurses specific to the care needs of trans persons who have been sexually assaulted. Competency-based education has been proven to be an effective method of educating health professionals across disciplines, including nursing (Du Mont et al., 2017a; Du Mont et al., 2018; Gravina, 2017).

The competencies were developed in a multi-step process using Bloom's Taxonomy of Learning (Anderson and Krathwohl, 2001), as detailed in Du Mont et al., 2019b including: 1) translation of recommendations for care of trans persons from the *National Protocol for Sexual Assault Medical Forensic Examinations, Adult/Adolescent* (United States Department of Justice Office on Violence Against Women, 2013)—endorsed by FORGE, an anti-violence advocacy organization specific to trans persons (FORGE, 2014)—into skills-based competencies; 2) review of these competencies in an in-person meeting by an advisory group of trans community members and allies; and 3) iterative review and revision of the competencies electronically until finalized with the advisory group. The 31 competencies that resulted from this process were organized into four domains: Initial Assessment, Medical Care, Forensic Examination, and Discharge and Referral (see Table 4 for examples and Du Mont et al., 2019b for full listing of competencies).

The competencies were used to guide the drafting of the curriculum content by the research team, which has extensive experience in curriculum development (e.g., Du Mont et al., 2017a; Du Mont et al., 2017b; Du Mont et al., 2018). The content was then reviewed by the advisory committee in two in-person meetings and extensive feedback was provided. Following revisions by the research team and further electronic review by advisory committee members, key materials were then externally reviewed by a physician with expertise in sexual, reproductive, and trans health and a nurse with extensive experience in forensic nursing training and the medical care of trans survivors (see Acknowledgements for details).

As part of the curriculum, we developed a standardized facilitator's guide and training module incorporating various active learning methods in addition to didactic lecture components to facilitate learning and knowledge retention, such as interactive case studies and discussion questions (Saad et al., 2018a; Saad et al., 2018b; Tomey, 2003). The training module consisted of seven lessons within two overarching sections. The first section, entitled “Introduction to the Issues”, provided background and context related to the experiences of trans survivors of sexual assault and was comprised of three lessons: Key Terms, Experiences of Sexual Assault, and Interactions with Healthcare. The second section, entitled “Core Elements”, comprised the four core content domains of the curriculum (Initial Assessment, Medical Care, Forensic Examination, and Discharge and Referral) and highlighted principles of trans-affirming care through all aspects of the SANE consultation. Each of these lessons included a corresponding set of learning objectives derived from the 31 competencies (see Table 1).

2.3. Pre- and post-training questionnaires

Pre- and post-training questionnaires were developed by the research team to capture changes in perceived expertise, perceived competence, and demonstrated competence (primary outcomes). The Post-training Questionnaire also measured satisfaction with the training (secondary outcome).

The questionnaires were developed based on the 31 final competencies and previous pre- and post-training evaluations as described in other literature (Du Mont et al., 2017b; Du Mont et al., 2019b). Participants were asked to indicate their level of agreement with the 31 competency-based statements on a 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree, 5 = strongly agree), which were organized into the four content domains of the training. Both the pre- and post-training questionnaires contained the item “How would you rate your current level of expertise related to care of transgender persons who have been sexually

Table 1
Learning objectives: providing trans-affirming care for sexual assault survivors.

- Introduction to the Issues
  - Key terms
    - ■ Understand key terms used among trans persons to refer to themselves, their identities, their bodies, and their experiences
  - Experiences of sexual assault
    - ■ Understand the prevalence of sexual assault among trans persons
      - ■ Identify contextual and contributing factors that explain the high prevalence of sexual assault in trans persons
      - ■ Understand the issues of trans sexual assault survivors through an intersectional lens
      - ■ Recognize power and control tactics that are often used against trans persons by abusive partners and other perpetrators of sexual violence
      - ■ Understand structural and interpersonal sources of violence that trans persons may be exposed to throughout the life course
  - Interactions with healthcare
    - ■ Describe how trans persons' exposure to stigma and discrimination in healthcare shape how trans persons seek and receive care
      - ■ Recognize the ways in which cissexism can hinder trans persons' access to quality healthcare
      - ■ Consider how the processes of medicalization and medical gatekeeping influence trans persons' expectations of —and experiences with—healthcare systems
- Core Elements
  - Initial assessment
    - ■ Understand how to ask about the names and pronouns a client goes by
      - ■ Use appropriate language to refer to body parts that may be relevant in providing care to trans clients
      - ■ Assess, recognize, and respect trans clients' boundaries in the context of care and decision-making
      - ■ Document work in a manner that both represents the care provided and reflects language preferences to the extent possible
      - ■ Understand unique concerns relevant to trans clients, such as added psychosocial and bodily trauma
  - Medical care
    - ■ Describe regimens of hormone replace therapy, as well as transition-related surgeries relevant to the care of trans clients
      - ■ Identify potential interactions of hormone replace therapy with emergency contraceptives, antibiotics, and HIV prophylactics
      - ■ Recognize specific health issues among trans clients who have undergone transition-related procedures
      - ■ Understand trans clients may be at heightened risk for HIV acquisition
  - Forensic examination
    - ■ Conduct appropriate forensic examinations
      - ■ Identify suggested equipment and tools
      - ■ Recognize key issues associated with the collection of evidence and the importance of ensuring proper documentation
  - Discharge and referral
    - ■ Understand key factors associated with risk assessment for trans clients who may be at increased risk of further victimization
      - ■ Develop an appropriate safety plan for trans clients
      - ■ Understand the importance of referring trans clients to trans-positive resources and community support services

assaulted?", which was also rated on a 5 point Likert scale (1 = low level, 2 = low-mid level, 3 = mid level, 4 = mid-high level, 5 = high level).

A clinical vignette, which is "a valid tool for measuring the quality of clinical practice … [in] diverse clinical settings" (Peabody et al., 2004, p. 771), was developed using recommendations described in the literature (Peabody et al., 2004; Veloski et al., 2005) and reviewed by the advisory committee. The vignette was included on both the pre- and post-training questionnaires to evaluate participants' competence in providing trans-affirming post sexual assault care using four multiple choice questions that encompassed the core content domains of the training (see Fig. 1).

The Pre-training Questionnaire additionally captured participant sociodemographic information and information on work history, including experiences undergoing trans-specific training and providing care to trans clients.

The Post-training Questionnaire included a series of additional questions examining participants' satisfaction on several items related to the content and delivery of the training, which was indicated on a 5 point Likert scale (1 = very dissatisfied, 2 = dissatisfied, 3 = neither dissatisfied nor satisfied, 4 = satisfied, 5 = very satisfied). Four open-ended questions were also included on the Post-training Questionnaire to collect supplementary feedback on the training (i.e., What aspect(s) of this training module was/were most helpful?; Are there any aspects of this training module you would suggest changing to make it better for future trainees?; What additional training elements, if any, would you add to this training module?; and, Do you have any additional comments about the training you received through this new module?).

2.4. Procedure

The curriculum was rolled out on November 21, 2018 in Toronto, Ontario during the week-long in-person SANE Training for frontline nursing staff. On the first day of SANE Training, as part of the orientation to the week, the study was explained to all nurses (including that participation was optional, anonymous, and would not affect their relationship with the Ontario Network of SA/DVTCs or its leadership) and consent forms to participate in the pre- and post-training questionnaires were distributed. On the fourth day of SANE training, the training module was delivered by a member of the trans community who had also aided in the overall development of the curriculum. To encourage interaction between the trainer and participants and facilitate interactive learning, following two lessons, case studies were presented with discussion questions. Participants were asked to spend a few minutes reflecting on each case study and discussing the associated questions with fellow participants at their tables. The trainer then invited one person at each table to share their table's responses with the full group. The total training time was 1.75 h. The pre- and post-training questionnaires were administered and were linked by an ID number to preserve anonymity of participants. Data were entered in an Excel database.

2.5. Data analysis

Descriptive statistics were calculated for sociodemographic characteristics, work experience, and prior trans-specific training (frequency, proportion), as well as items related to satisfaction with the training (mean [M], standard deviation [SD]). Mean Likert ratings for expertise were compared from pre- to post-training using paired *t*-tests. The means of the valid responses to all competency-based statements within each core content domain were calculated and compared from pre- to post-training using paired t-tests. The total score on the clinical vignette was calculated based on the number of correct responses among the four included questions and compared from pre- to post-training using a paired t-test. In the calculation of the total score, only one correct response was allowed per question with all other responses marked as incorrect (i.e., there were no half marks). Statistical significance across these analyses was set at $p = .05$. Responses from the four open-ended questions were synthesized by two members of the research team. All analyses were conducted using Excel and SPSS Version 24.0.

3. Results

All 47 nurses undergoing SANE training consented to participate in the evaluation of the trans training and completed pre- and post-training questionnaires.

3.1. Sociodemographic characteristics

The majority (61.7%) of participating nurses were 25 to 35 years of age (see Table 2). All participants indicated that their sex was female and that their gender was woman. The large majority identified as White or Caucasian (89.4%) and had an undergraduate degree as their

The following vignette represents a hypothetical scenario you may encounter working with a trans client. Please read the scenario and answer the subsequent questions to the best of your ability.

Alexis is a 25-year old client who presents to the emergency department. Alexis informs triage staff that she has been recently assaulted by her intimate partner and would like to be tested for HIV. She describes how she has been seeing her partner for only four weeks and does not know him well and was just recently anally penetrated by him without her consent. Alexis appears visibly distraught and states "whatever the result, just please don't call the police". Alexis does not tell triage staff that she is trans and simply states that she is a woman. However, her health card designates her sex as "M" and lists her name as "Alexander".

When you meet with her, she describes moving in with her male partner four weeks after they met because she is currently unable to afford living on her own. Since moving in together, her partner has displayed abusive and violent tendencies, controlling what Alexis wears, and threatening to take away her hormones if she doesn't comply with his wishes. He also tells her that no one else will ever love her. Alexis discloses to you that she is trans. Alexis has been on estrogen therapy for 2 years, and while she is doubtful of whether she may want to go to court, she wishes to have forensic evidence collected regarding the anal assault in case she decides to file charges in the future. Alexis expresses that while she is scared of her partner, she feels compelled to return back to him because she's lucky to find any partner at all. Furthermore, she doesn't want to go to a women's domestic violence shelter because she fears being discriminated against because she is trans.

39. What could be a *first* step to take in managing Alexis' case?
    a. Ask Alexis if she would consent to a medical examination to investigate any potential injuries
    b. Ask Alexis if she has had any transition-related surgeries
    c. Ask Alexis what pronouns she uses and the language she is most comfortable with for describing her body parts
    d. B and C
    e. All of the above

40. Alexis is concerned that if she were exposed to HIV, she would be unable to take HIV medications because of her hormone replacement therapy. What would you tell Alexis in response to this concern?
    a. Inform her that HIV Post-Exposure Prophylaxis (PEP) is an option for her that can be administered safely with estrogen
    b. Inform her that she may be required to stop estrogen in order to take HIV PEP
    c. Inform her that estrogen is at times known to interact with HIV medications and, as a result, HIV PEP and estrogen may only be taken concurrently in some cases under the supervision of a primary care provider
    d. B and C
    e. None of the above

41. While completing documentation in the Sexual Assault Evidence Kit, you realize that Alexis' health card information is inconsistent with her expressed name and pronoun. How would you proceed?
    a. Ask Alexis what name and pronoun she would like you to include in your documentation
    b. Write a note in her chart, where relevant, that indicates the name and pronoun she goes by
    c. Gently explain to Alexis that although medical documentation associated with her visit may be labeled with her legal name and sex, you will indicate the name and pronoun she goes by in your charting
    d. A and B
    e. All of the above

42. Knowing that Alexis is reluctant to go to a domestic violence shelter for fear of discrimination and feels compelled to return to her partner, how would you help Alexis plan for discharge and follow-up support?
    a. Let Alexis know that there is a risk of repeated violence and escalation in severity of violence
    b. Validate that she is concerned about experiencing discrimination at a women's shelter and work through any specific concerns that could be addressed when exploring shelter options
    c. Help Alexis explore if there are friends or acquaintances that she might be comfortable staying with, or if there are other informal sources of support in her own network that she could turn to for emotional support
    d. Provide her with information on trans positive support organizations, either in her city or in other cities if you can't find something in her own community, that she would be able to access for follow-up support
    e. B and C
    f. All of the above

Fig. 1. Clinical vignette.

highest level of completed education (74.5%).

3.2. Work experience and prior trans-specific training

Most participants had been working as a SA/DVTC nurse for less than two years (78.8%) (see Table 3). The majority of participants had never provided direct clinical care to a trans client (76.6%), nor had they undergone training specifically related to providing care for trans clients (66.0%). Where they had engaged in training, it was most often self-directed (43.8%) or through a community organization/group (43.8%), from one-to-four hours in length (68.8%), and delivered solely in-person (50.0%).

3.3. Expertise and competence

Participants' perceived level of expertise related to care of trans persons who have been sexually assaulted improved significantly from pre- to post-training ($M = 1.89$, $SD = 0.84$ vs. $M = 3.47$, $SD = 0.62$, $p < .001$). Perceived competence increased significantly across all core content domains of the curriculum: initial assessment ($M = 3.79$,

Table 2
Sociodemographic characteristics (N = 47).

Variable	*n*	%
Age, in years		
19–24	2	4.3
25–35	29	61.7
36–45	11	23.4
46–60	4	8.5
61 +	1	2.1
Sex		
Female	47	100
Male	0	0.0
Other	0	0.0
Gender		
Woman	47	100
Man	0	0.0
Trans	0	0.0
Other	0	0.0
Ethnicity/race		
Arab/West Asian	0	0.0
Black	1	2.1
Chinese	1	2.1
Filipino	1	2.1
Indigenous	0	0.0
Japanese	0	0.0
Korean	0	0.0
Latin American	1	2.1
South Asian	1	2.1
South East Asian	0	0.0
White/Caucasian	42	89.4
Other	0	0.0
Highest level of education		
Hospital-based nursing program	2	4.3
Community college	6	12.8
Bachelor's degree	35	74.5
Master's degree	4	8.5

Table 3
Work experience and prior trans-specific training (N = 47).

Variable	*n*	%
Time in role as SA/DVTC nurse		
1 day to < 6 months	2	4.3
6 months to < 1 year	15	31.9
1 year to < 2 years	20	42.6
2 years to < 3 years	9	19.1
3 + years	1	2.1
Ever provided direct clinical care to a trans client as a SA/DVTC nurse		
Yes	11	23.4
No	36	76.6
Undergone training specifically related to providing care for trans clients		
Yes	16	34.0
No	31	66.0
Type of training[a]		
Undergraduate nursing course	3	18.8
Self-directed	7	43.8
Community organization/group	7	43.8
Conferences	2	12.5
Community of practice	2	12.5
Other (government, individual trans speaker, and clinical placement)	3	18.8
Approximate length of training		
1–4 h	11	68.8
5–10 h	3	18.8
11–15 h	2	12.5
16 + hours	0	0.0
Modalities of training		
In-person	8	50.0
Online	3	18.8
Both	5	31.3

Note:
[a] Categories are not mutually exclusive.

SD = 0.63 vs. M = 4.70, SD = 0.31, p < .001), medical care (M = 3.33, SD = 0.73 vs. M = 4.69, SD = 0.33, p < .001), forensic examination (M = 3.40, SD = 0.75 vs. M = 4.72, SD = 0.35, p < .001), and discharge and referral (M = 3.62, SD = 0.80 vs. M = 4.59, SD = 0.40, p < .001) (see Table 4). Scores on the clinical vignette also significantly improved from pre- to post-training (M = 2.13, SD = 1.06 vs. M = 3.23, SD = 0.87, p < .001).

3.4. Satisfaction with training module

Participants were highly satisfied with the training module, including: clarity (M = 4.68, SD = 0.47), time allocated for the scope of the material presented (M = 4.11; SD = 0.91), comprehensiveness in addressing critical issues related to care (M = 4.60; SD = 0.54), amount of practical information provided (M = 4.55; SD = 0.72), and appropriateness of the information presented and associated handouts for level of expertise at the start of training (M = 4.57; SD = 0.65).

Overall, responses to the four open-ended questions further confirmed that the training module was very well received with participants indicating that it was a “great learning opportunity”, “excellent”, “exceptional and engaging”, “really informative and understandable”, “very interesting”, “very beneficial”, “inclusive and pertinent to care”, “well organized”, and “extremely helpful”. Several participants commented that the training should be rolled out more broadly: “This training is incredibly relevant and important! This should be available and mandatory for health care providers EVERYWHERE.”

3.5. Most helpful aspects of training module

Synthesis of the 43 responses to “What aspect(s) of this training module was/were most helpful?” identified the following content: a) information on appropriate language use and key terms/definitions used in the trans community, specifically, the overview of terminology relevant to the “respectful” and “sensitive” care of trans populations (e.g., distinction between sex and gender, intersex, cisgender), use of preferred names and pronouns when interacting with trans clients, and examples of appropriate language to use (e.g., gender-neutral terms to refer to body parts); b) information pertinent to the assessment/examination of a client, such as specific tools to use in the examination (e.g., pediatric speculum); c) information associated with the gathering of medico-legal evidence from trans clients using prostheses and anatomical changes post-transition related surgery; and d) information regarding the medical care of trans clients, such as the safe prescribing of medications for sexually transmitted infections and the different regimens of hormone replacement therapy. The following quotes are illustrative:

> Background and terminology. I've been unsure of proper terms, which makes it hard to be comfortable and supportive.

> The anatomy piece, the equipment to use (ex. small speculum), the use of prosthetics - I really didn't know a lot - the fact they may have removed such items before coming to the nurse.

Several participants commented that the case study format was particularly helpful in their learning.

3.6. Suggestions to improve the training module

Suggestions to improve the training module were synthesized across responses to, “Are there any aspects of this training module you would suggest changing to make it better for future trainees?” (n = 33), “What additional training elements, if any, would you add to this training

Table 4
Perceived expertise, perceived competence, and demonstrated competence pre- and post-training.

Variable	N	Pre-training		Post-training		p value
		M	SD	M	SD	
Perceived expertise[a]	44	1.89	.84	3.47	.62	< .001
Perceived competence[b]						
Initial assessment	46	3.79	.63	4.70	.31	< .001
Medical care	47	3.33	.73	4.69	.33	< .001
Forensic examination	47	3.40	.75	4.72	.35	< .001
Discharge and referral	46	3.62	.80	4.59	.40	< .001
Demonstrated competence[c]	47	2.13	1.06	3.23	.87	< .001

Note:
[a] Rated on a five point Likert scale (1 = low level, 2 = low-mid level, 3 = mid-level, 4 = mid-high level, 5 = high level).
[b] Based on mean of all valid responses to competency-based statements within each of four core content domains of training, as rated on a 5 point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree, 5 = strongly agree). Examples of competencies included: Initial Assessment (e.g., I know to always refer to a trans client by their chosen name and pronoun(s), even when speaking to others. If unsure of their chosen name or what pronoun they go by, I routinely ask; I am confident that I do not, or would not, show surprise, shock, dismay, or concern when either told or inadvertently learning that a client is trans); Medical Care (e.g., I know how to ask a trans client sensitively about their history of transition-related medical interventions [e.g., hormones and/or surgeries], if relevant to the care being provided; I know that if a trans man/transmasculine client is taking hormones, certain types of hormonal contraceptives may be limited in their efficacy); Forensic Examination (e.g., I am aware of what specific equipment [e.g., pediatric speculum] and tools [e.g., gender-neutral body map] might be needed to assist in the examination of a trans client; When following procedures and collecting clothing evidence, I am aware that a trans client may be unwilling to part with prostheses and similar items for reasons of safety and/or cost); and Discharge and Referral (e.g., I am aware that a trans client may lack or have decreased social supports [e.g., family, friends, trusted service providers]; I am aware that the sexual assault of a trans client may have occurred in the context of a hate crime, which may be important to consider in safety planning).
[c] Based on the mean number of correct responses to four multiple choice questions on clinical vignette.

module?" (n = 28), and "Do you have any additional comments about the training you received through this new module?" (n = 29) and included: a) allocation of more time to the training presentation; b) introduction of more photographs/diagrams of trans anatomy and, specifically, of post-transition-related surgeries; c) use of more case studies; and d) inclusion of quotes/personal stories from trans persons with lived experiences of sexual assault and their experiences navigating the healthcare system. With regards to the latter, one participant noted, "this would help us gain deeper understanding of what trans individuals go through and for some perhaps decrease stigmatization."

4. Discussion

This study revealed that the novel curriculum, *Providing Trans-Affirming Care for Sexual Assault Survivors*, on the provision of appropriate, sensitive, and informed care for trans survivors of sexual assault was efficacious in educating forensic nurses working in hospital-based violence treatment centres. This finding is critically important as evidence reveals that trans persons experience significant mistreatment across healthcare settings in Ontario and beyond. Not only do trans persons regularly report being denied healthcare specifically as a result of their trans identity (Bauer et al., 2014), but they also report experiencing victim blaming, harassment, the use of demeaning language by healthcare providers (munson and Cook-Daniels, 2016), as well as being refused examinations of their bodies when medically indicated (Bauer and Scheim, 2015). In addition to experiencing overt stigma and discrimination, trans persons frequently encounter providers who lack competence in providing respectful and appropriate care (Seelman, 2015). These experiences may prevent trans persons from seeking support in the aftermath of sexual assault and, in turn, this may be detrimental to their overall health. The training evaluated in this study holds promise for improving outcomes for trans survivors of sexual assault across Ontario's SA/DVTCs.

The curriculum led to significant improvements in nurses' perceived competence on all core content domains representing the 31-skills based competencies (Initial Assessment, Medical Care, Forensic Examination, and Discharge and Referral). After training, nurses reported on average a significant increase in their level of expertise in the provision of trans-affirming post-sexual assault care from low to low-mid to mid to mid-high. Additionally, the curriculum led to significant improvements in demonstrated competence, with an average of approximately 2 out of 4 correct questions on the clinical vignette pre-training and 3 out of 4 post-training. These results are consistent with prior evaluations of trainings aimed at improving healthcare professionals' knowledge and competence in caring for survivors of sexual assault more generally through competency-based trainings, where participants' competence also improved significantly (Du Mont et al., 2017b; Du Mont et al., 2018).

The nurses were highly satisfied with the training module, including clarity of materials, time allocated, comprehensiveness of the content, amount of practical information, and appropriateness for their level of expertise. This was further confirmed in the comments provided to the open-ended questions, where participants corroborated the overall significance of the curriculum for enhancing care for trans sexual assault survivors. Similar to other studies, where the efficacy of training for improving emergency care providers' expertise and competence to care for LGBTQ+ clients was assessed (Bristol et al., 2018), the nurses in this study particularly appreciated information on the use of appropriate language when working with trans and gender diverse clients, such as gender-neutral terminology, definitions of terms related to gender identity and sex, and gender-affirming language. Several nurses indicated, however, that the curriculum would benefit from more time being allocated to its presentation and additional material, such as images of post-surgical genital changes, anatomy diagrams, and direct quotations from trans persons through interviews, videos, or other materials.

There were some limitations to this study that must be considered. First, although the nurses included in this study represented SA/DVTCs across Ontario, the sample may not be generalizable to all nurses working in these centres, as many were fairly new in their role as a SA/DVTC nurse. Second, while the curriculum was developed specifically for forensic nurses, many indicated varying degrees of prior trans-specific training. Therefore, training specific to the level of expertise in trans-affirming care of forensic nurses, from beginner, intermediate, to advanced, could prove beneficial.

5. Conclusion

This curriculum could be useful to the more 5000 members of the International Association of Forensic Nurses who practice and support forensic nursing in 26 countries globally (International Association of Forensic Nurses, n.d.). Two-thirds of nurses in our study had not undergone any prior training on the provision of care for trans clients but indicated an enthusiasm for this opportunity and the importance of extending the curriculum's reach. Indeed, the curriculum could have implications also for educating emergency department staff, who, in many jurisdictions, are still the only healthcare professionals providing acute care to sexual assault victims (Du Mont et al., 2018). In a 2018 American study assessing LGBTQ+ competency training for emergency department staff members in one hospital (including physicians, nurses, and secretaries), it was discovered that more than 85% of participants had no prior LGBTQ-specific training (Bristol et al., 2018). Further development and extension of the curriculum to other healthcare

providers could aid in meeting the increasing demand for healthcare services tailored specifically to trans populations (Torjesen, 2018).

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Ethics statement

This study was approved by the Research Ethics Board at Women's College Hospital (REB #2017-0169-E).

Declaration of competing interest

The authors have no conflicts of interest to declare.

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