

SHORT REPORT

Evaluation of an e-Learning Curriculum for Forensic Nurses on Trans-Affirming Postsexual Assault Care

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Abstract

Trans survivors of sexual assault have called for the development and implementation of training for care providers. To answer this call, we developed and evaluated an innovative e-learning curriculum for forensic nurses working across Ontario, Canada, on the provision of trans-affirming care. The e-learning curriculum, developed in Storyline 360 by Articulate, was launched in August 2019. The competence of nurses ($N=65$) completing the curriculum improved significantly from pre- to post-training across all content domains (Initial assessment, Medical care, Forensic examination, and Discharge and referral). This e-learning curriculum could be of utility in training forensic nurses worldwide.

Keywords: curriculum; e-learning; evaluation; forensic nursing; sexual assault; transgender persons

Introduction

Transgender (trans) persons experience high rates of sexual violence.¹ In a recent survey, 26% of trans persons, including those identifying as nonbinary, reported that they had been sexually assaulted in the previous 5 years.¹ Despite this, many trans survivors have difficulty accessing appropriate services postvictimization due to cisgender-centric models of care.²⁻⁴ The barriers to care that trans survivors face are particularly problematic given their increased risk of experiencing revictimization, discrimination, depression, and suicidality.^{2,5} They may also lack social supports, be engaged in sex work, and experience significant rates of poverty, issues for which comprehensive and appropriate services could be helpful.^{4,6-8} A lack of knowledgeable providers skilled in the provision of trans-positive postsexual assault care has been cited by survivors as especially distressing and challenging.^{9,10} A survivor of sexual assault in an American survey conducted by Tetamanti in Oregon in 2016 indicated that “when a ...

provider denies their trans identity ... it ‘feels like violence.’”^{10(p.10)} Trans survivors of sexual assault have called for the development and implementation of training for care providers.^{9,10}

Globally, many health care-based sexual assault services are led by specially trained forensic nurses, who provide acute medical care, crisis intervention, forensic evidence collection, and follow-up care, as well as refer to community services, as appropriate.¹¹ The Ontario Network of Sexual Assault/Domestic Violence Treatment Centres (SA/DVTCs) recently identified a pressing need to train their forensic nurses across the province in the provision of trans-affirming care.^{12,13} Trans-affirming care in the context of postsexual assault services “comprises assessment, intervention, discharge, and referral practices that recognize, account for, and address the unique experiences and needs of trans sexual assault survivors.”^{14(p.21)}

An ~1.5-h in-person training focused on the provision of trans-affirming care was developed in 2018,

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using a competency-based approach; an approach that is well-established in the training of nurses.¹⁵ Competency development was guided by an advisory group of trans community members and their allies and informed by Bloom's Taxonomy of Learning and recommendations for the care of trans survivors from the U.S. *National Protocol for Sexual Assault Medical Forensic Examinations* and FORGE.^{16–18} Thirty-one final competencies were organized each into one of four core components of care that comprised the response to persons who have been sexually assaulted at SA/DVTCs (hereinafter referred to as “core content domains”): Initial assessment, Medical care, Forensic examination, and Discharge and referral (see previous publication for full listing of competencies).¹³ In November 2018, in Toronto, the training was evaluated among 49 nurses representing the geographical diversity of Ontario.¹⁹ The training was successful, with significant improvements across all areas of competence and high levels of satisfaction among learners. Recommendations made to improve the training were to increase its length, introduce more visual representations of body configurations, enhance case studies, and add quotes/personal stories from trans persons with relevant lived experiences.¹⁹

To expand the reach of the in-person training, we developed an e-learning version in 2019. e-Learning, which is increasingly being adopted for the training of forensic nurses, improves accessibility to training as it is flexible, convenient, can be used on any computer with a stable internet connection, and requires no travel—features particularly helpful for nurses working in remote geographical locations and those with family and work-related constraints.²⁰ In this study, the e-learning curriculum, which built on the 31 competencies from the in-person training, was examined for its effectiveness in improving expertise and competence to provide trans-affirming care among forensic nurses working within Ontario's SA/DVTCs.

Methods

This study was approved by the Research Ethics Board at Women's College Hospital (REB #2019-0074-E).

Development of the e-learning curriculum

In the development of the e-learning curriculum, enhancements to the in-person training were made based on evaluation feedback. Case studies were reworked to better reflect the diversity of persons living in Ontario (e.g., immigration status) and include information regarding relevant medical history (e.g., testosterone

use). Other improvements to the training were the addition of trans voices (e.g., the inclusion of a recent newspaper article recounting a trans person's experiences of accessing emergency care in Ontario) and more visual content, particularly in the context of anatomical changes post-transition-related surgeries.

The e-learning curriculum was drafted using Storyline 360 by Articulate, a software used to develop interactive online training that can be delivered on multiple devices. We drew on principles of multimedia learning, which outline evidence-based criteria for effective interactive content and online training design, to guide the development of the curriculum.²¹ The draft curriculum was reviewed externally by two members of trans communities who are experts in trans health and the care of trans survivors of sexual assault. Based on their feedback, minor revisions were made to the content.

Box 1. e-Learning Curriculum Outline for Providing Trans-Affirming Care for Sexual Assault Survivors

Section I: Introduction to the issues

- Lesson 1: Key terms
 - Definitions
 - Correct terminology
 - Lesson 2: Experiences of sexual assault
 - Prevalence
 - Contextual and contributing factors
 - Power and control tactics
 - Structural and interpersonal violence
 - Lesson 3: Interactions with health care
 - Stigma and discrimination
 - Cissexist beliefs
 - Medicalization and medical gatekeeping
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Section II: Core elements

- Lesson 4: Initial assessment
 - Name and pronouns
 - Language use
 - Boundaries
 - Documentation
 - Case study (including reflection questions)
 - Gender dysphoria and trauma
 - Lesson 5: Medical care
 - Hormone replacement therapy
 - Emergency contraception
 - Transition-related surgeries
 - HIV risk assessment
 - Support for clients living with HIV
 - Case study (including reflection questions)
 - Lesson 6: Forensic examination
 - Initiation of the examination
 - Equipment and tools
 - Collection of evidence
 - Completion of sexual assault evidence kit forms
 - Lesson 7: Discharge and referral
 - Risk assessment
 - Safety planning
 - Trans-positive resources and services
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Each lesson includes learning objectives, knowledge checks, references, and a summary.

The final curriculum, which was ~2 h in length, included two major sections: Introduction to the Issues and Core Elements (Box 1). To maximize learning, a glossary of key terms was compiled and made viewable at any time during training. Closed captions of the narration were also provided. In addition, integrated throughout the curriculum to reinforce knowledge and assess retention were the following: multiple choice questions, game-based learning activities, case studies and associated questions for reflection, boxes with additional information, weblinks to other relevant materials, and downloadable resources (e.g., a companion training manual).¹⁴ This e-learning curriculum was asynchronous; the material was prerecorded so that the learner could complete the training at their convenience, starting and stopping the training as required.

Implementation

The curriculum was uploaded in the learning management system, Docebo, in August 2019. It was made immediately available to SA/DVTC nurses who had already completed online Sexual Assault Nurse Examiner (SANE) training—a standardized training of 16 modules focused on, among other topics, strangulation, medico-legal documentation, and interpretation of injuries. These nurses were notified about the curriculum through a mailing list and staff-only website.²² Each nurse was given 6 weeks to complete the curriculum, with a 2-week extension offered to those who required additional time. Data were collected for the evaluation for ~10 months, during which time the curriculum was made available to any new nurses who joined the network and met the requirements. Immediately upon registration for the training, participants were invited to complete a pre-training questionnaire in the learning management system. Consent to participate in the evaluation was obtained as part of the preamble to the questionnaire. Immediately after completion of the curriculum, they were invited to complete a post-training questionnaire in the learning management system, after which they received an automatically generated certificate of completion.

Pre- and post-training questionnaires

The pre- and post-training questionnaires each contained the same 36 items related to expertise and perceived and demonstrated competence. The overall level of expertise on the care of trans survivors of sexual assault was measured on a 5-point Likert scale (1 = low level to 5 = high level). Perceived competence was measured using level of agreement with the 31 competen-

cies, organized into the 4 core content domains (Initial assessment, Medical care, Forensic examination, Discharge and referral), on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Demonstrated competence was measured using a clinical vignette, a hypothetical case of a trans client and associated questions.^{19,23} One question each represented the four core content domains.¹⁹

The pretraining questionnaire also contained five items associated with sociodemographic characteristics, including age, sex, gender, ethnicity/race (predominantly identify with), and highest level of education. Two items also captured work experience: time in role as an SA/DVTC nurse and provision of direct clinical care to a trans client as an SA/DVTC nurse. Three items were related to having undergone training specifically in the care of trans clients, including the type and length of training.

The post-training questionnaire additionally contained five items related to satisfaction with the curriculum: clarity, engaging and kept attention, comprehensiveness, right amount of practical information, and appropriateness for level of experience and knowledge at the start of the training. These items were rated on a 5-point Likert scale (1 = very dissatisfied to 5 = very satisfied).

Data analysis

Sociodemographic characteristics, work experience, and prior trans-specific training, as well as items related to satisfaction with the curriculum, were summarized using counts and proportions. Paired *t*-tests were used to compare results from pre- to post-training (significance set at $p < 0.05$) for the following: (1) mean Likert ratings of expertise, (2) mean Likert ratings of competencies within each core content domain, and (3) mean total score on the clinical vignette. The clinical vignette was scored based on the number of correct responses out of four questions. Analyses were conducted using SPSS Version 25.0.

Results

Participant characteristics

Sixty-five nurses consented to participate in the evaluation and completed the curriculum. Approximately half (50.8%) were 25 to 34 years of age (Table 1). All participants indicated their sex was female and gender was woman. Most identified as white (87.7%), with 3.1% each being Chinese or indigenous and 1.5% each being Latin American or Filipino. For almost two-thirds (63.1%) of participants, the highest level of

Table 1. Participant Characteristics

Variable	n	%
Age group (n=65)		
19 to <25 years	3	4.6
25 to <35 years	33	50.8
35 to <45 years	14	21.5
45 to <60 years	14	21.5
60+ years	1	1.5
Sex (n=65)		
Female	65	100
Male	0	0
Other	0	0
Gender (n=65)		
Woman	65	100
Man	0	0
Transgender	0	0
Other	0	0
Ethnicity/race (n=65)		
Arab/West Asian	0	0
Black	0	0
Chinese	2	3.1
Filipino	1	1.5
Indigenous	2	3.1
Japanese	0	0
Korean	0	0
Latin American	1	1.5
South Asian	0	0
Southeast Asian	0	0
White	57	87.7
Other ^a	2	3.1
Highest level of education (n=65)		
Hospital-based nursing program	2	3.1
Community college	16	24.6
Undergraduate degree (e.g., BScN)	41	63.1
Graduate degree (e.g., MN)	6	9.2
Time in role as an SA/DVTC nurse (n=65)		
1 day to <6 months	16	24.6
6 months to <1 year	6	9.2
1 year to <2 years	12	18.5
2 years to <3 years	4	6.2
3+ years	27	41.5
Ever provided direct clinical care to a trans client as an SA/DVTC nurse (n=65)		
Yes	16	24.6
No	49	75.4
Undergone training specifically related to providing care for trans clients (n=65)		
Yes	21	32.3
No	44	67.7
Type of training ^b (n=21)		
Undergraduate nursing course	1	4.8
Community organization/group	10	47.6
Conferences	9	42.9
Community of practice	5	23.8
Self-directed	7	33.3
Other ^c	2	9.5
Approximate length of training (n=21)		
1 to <5 h	12	57.1
5 to <11 h	6	28.6
11 to <16 h	2	9.5
16+ h	1	4.8

^aIncluded mixed white/indigenous and did not specify.

^bCategories are not mutually exclusive.

^cIncluded Sexual Assault Nurse Examiner training with trans-specific content and involvement in clinical settings.
SA/DVTC, Sexual Assault/Domestic Violence Treatment Centre.

education completed was an undergraduate degree. More than two-fifths (41.5%) of participants had been in their role for three or more years. Only one-quarter (24.6%) had provided direct clinical care to a trans client, whereas a third (32.3%) had undergone training specifically related to caring for trans persons.

Changes in expertise and competence

Perceived expertise related to care of trans persons who have been sexually assaulted increased from pre- to post-training (Mean [M]=2.2, standard deviation [SD]=1.1 vs. M=3.6, SD=0.78, *p*<0.001; Table 2). Perceived competence improved across all core content domains post-training: Initial assessment (M=3.9, SD=0.58 vs. M=4.5, SD=0.55, *p*<0.001), Medical care (M=3.5, SD=0.80 vs. M=4.5, SD=0.53, *p*<0.001), Forensic examination (M=3.6, SD=0.70 vs. M=4.5, SD=0.53, *p*<0.001), and Discharge and referral (M=3.7, SD=0.73 vs. M=4.4, SD=0.52, *p*<0.001) (Table 2). Demonstrated competence also improved post-training (M=2.4, SD=0.86 vs. M=3.0, SD=0.86, *p*<0.001).

Satisfaction with the curriculum

The large majority of participants were satisfied or highly satisfied with the curriculum, including the clarity of the material (n=60, 92.3%), the ability of the material to engage and keep their attention (n=60, 92.3%), the comprehensiveness of the material in addressing critical issues in providing care to trans survivors (n=59, 90.8%), the amount of practical

Table 2. Changes in Expertise and Competence of Forensic Nurses Following Completion of an e-Learning Curriculum on the Provision of Tran-Affirming Sexual Assault Care

Variable	N	Pretraining		Post-training		p
		M	SD	M	SD	
Perceived expertise ^a	65	2.2	1.1	3.6	0.78	<0.001
Perceived competence ^b						
Initial assessment	65	3.9	0.58	4.5	0.55	<0.001
Medical care	63	3.5	0.80	4.5	0.53	<0.001
Forensic examination	64	3.6	0.70	4.5	0.53	<0.001
Discharge and referral	64	3.7	0.73	4.4	0.52	<0.001
Demonstrated competence ^c	65	2.4	0.86	3.0	0.86	<0.001

^aRated on a 5-point Likert scale (1=low level, 2=low-mid level, 3=mid-level, 4=mid-high level, 5=high level).

^bBased on means of all valid responses to competencies 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, and 5=strongly agree).

^cBased on the mean number of correct responses to four multiple choice questions on a clinical vignette.

M, mean; SD, standard deviation.

information contained ($n=58$, 89.2%), and the appropriateness of material for their level of experience and knowledge ($n=62$, 95.4%).

Summary and Conclusion

Our novel and interactive e-learning curriculum shows promise in improving the response to trans survivors of sexual assault across Ontario. Such training is critically important as trans persons seeking support postsexual assault have historically had limited access to care that appropriately meets their needs.^{9,10}

Nurses' perceived level of expertise in caring for trans survivors of sexual assault changed from pre- to post-training, with average ratings of expertise increasing from approximately low-mid to mid-high. Their perceived competence also increased post-training across the core components of care that frame the SA/DVTC response to persons who have been sexually assaulted: Initial assessment, Medical care, Forensic examination, and Discharge and referral. Similarly, competence improved post-training, as demonstrated on a hypothetical clinical scenario of a trans client, although this finding requires further exploration in a real-world clinical setting. Levels of satisfaction with the curriculum content and delivery were high, findings that are consistent with other studies focused on the development of e-learning curricula for nurses.²⁴ Promising avenues for future research could include observational studies of the impacts of the e-learning curriculum on behavioral outcomes in practice among service providers and trans survivors' satisfaction with their care experiences.

Based on our evaluation, the e-learning curriculum has become a permanent component of training for forensic nurses working within Ontario's SA/DVTCs, helping to ensure that all trans survivors receive sensitive, informed, and appropriate care. Although the generalizability of this study may be limited to the Ontario context, forensic nursing-led services that currently care for victims of violence in 26 countries worldwide could adapt the curriculum to their own settings and train nurses to better support trans survivors.²⁵

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Abbreviations Used

M = mean
 SA/DVTC = Sexual Assault/Domestic Violence Treatment Centre
 SANE = Sexual Assault Nurse Examiner
 SD = standard deviation