Evidence Profile (Quantitative)

Recommendation Question: Should integrating 2SLGBTQI+ health content into professional education (including policies) be recommended?

Population: Organizations and academic institutions

Intervention: Policies regarding integrating diverse and affirming education into the undergraduate curriculum and/or within organizations

Comparator: No policies regarding integrating content into undergraduate curriculum and/or within organizations

Outcomes: Student experience [Critical], Knowledge and/or skills of students and providers [Critical], Education embedded/integrated throughout the curriculum [Critical; not found within this literature], Number of continuing professional development offerings and/or modules that include 2SLGBTQI+ content [Important; not found within this literature], Number of educational institutions that have integrated policies [Important; not found within this literature]

Recommendation 5.0: The expert panel recommends academic institutions integrate 2SLGBTQI+ affirming health content into curricula for all students entering health professions.

Setting: All health care settings

Bibliography : 13716, 14173, 14302, 14334, 12152, 12181, 12813, 13062, 13331, 13354, 13472, 13929, 1636, 1392, 1529, 1597, 27, 213, 1912, 1922, 2007, 2119, 2133, 2152, 2209, 2878, 4789, 4818, 4922, 256, 291, 1187, 1190, 1199, 1201, 1293, 1303, 426

Quality assessment							Study details		No. of participants/events		Summary of Findings	Certainty	Reference
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention	Integrated content into professional education	No integrate content	Reported effects/outcomes		
Knowledge and/or skills of students *(assessed with: Knowledge and confidence survey (likert scale), online LGBT knowledge assessment, pre/post surveys, multiple choice survey, Sexual Orientation Counselor Competency Scale (SOCCS), Transphobia scale, Lesbian, Gay and Bisexual Affirmative Counseling Self-Efficacy Inventory (LGB-CSI), self-assessed knowledge and comfort surveys (likert scale))* **Follow-up:** *immediately post-education, 3 months*													
2[a]	Systematic review of non-RCTs [majority pre/post design]	Serious[b]	Serious[c]	Not Serious	Not Serious	None	13929: 8 studies: 5 USA, 2 UK, 1 Kenya	13929: All forms of training given to healthcare professionals on sexuality and LGBT specific health issues at undergraduate and postgraduate level Training Content: The content of the training can be grouped under the following five topics: key terms and terminology, stigma and discrimination, sexuality and sexual	13929: Total sample size across studies n= 706 Knowledge: Seven studies measured change in participants' knowledge. All the studies reported an improvement in knowledge immediately after the	13929: NA	Two systematic reviews demonstrated a positive direction of effect of education on knowledge, comfort and practice. 13929: Knowledge: Knowledge increased positively immediately post intervention and at 3 months. This was reported in 7 studies. Practice-: An overall improvement in behaviour was reported in one study.	⊕⊕○○ **Low**	13929: Sekoni, Gale, Manga-Atangana, et al., 2017

iaBPG

№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention	Integrated content into professional education	No integrate content	Reported effects/outcomes	Certainty	Reference
				Quality assessment				Study details		No. of participants/events	Summary of Findings		
								dysfunction, sexual history taking, LGBT-specific health and health disparities. Trainers: In all but one study, the training was hosted and developed by universities and the facilitators/trainers were faculty in the institutions.	training and during the three months follow-up evaluation. Practice : One study assessed change in behaviour among medical residents. An overall improvement was reported, specifically with regards to current sexual activity, number of current sexual partners and gender of current sexual partners. However, documentation of gender of sexual partners over their lifetime, history of specific STIs and sexual behaviour were still judged to be inadequate post intervention.				
							1636: Various [country of individual studies not reported]	1636: N=13 studies Education programs that sought to reduce implicit LGBTQ-related bias among health care professions students and providers by improving knowledge about LGBTQ health care, attitudes toward LGBTQ patients, and comfort	1636: Impact of interventions on knowledge: Overall, programs resulted in positive increases in knowledge for both students and providers	1636: NA	1636: There was an increase in knowledge and comfort from pre to post intervention however results for attitude were inconsistent.		1636: Morris et al, 2019

Quality assessment							Study details			No. of participants/events		Summary of Findings	Certainty	Reference
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention	Integrated content into professional education	No integrate content		Reported effects/outcomes		
								levels working with LGBTQ patients.	representing a variety of disciplines. Impact of interventions on attitudes: Overall, training program effects on LGBTQ-related attitudes were inconsistent for health care professions students and providers. Impact of interventions on comfort: Overall, training programs resulted in increased comfort levels and decreased anxiety levels among health care professions students and providers, though one study of health care providers reported no changes in comfort.				
								Additional studies identified:			An additional 35 primary studies were identified with the majority reported a positive effect of education on knowledge and skill of students.		

iaBPG

Quality assessment							Study details			No. of participants/events		Summary of Findings		
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention	Integrated content into professional education	No integrate content		Reported effects/outcomes	Certainty	Reference
							13716: USA	13716: LGBT health certificate program offered as an elective for students of the Schools of Medicine, Nursing, Dentistry, and Public Health and Information Science	13716: N= 39 Mean total correct knowledge score: *pre-training*: 6.90 (1.41) *post-training*: 8.46 (1.33) p <0.001, effect size= 0.90	13716: NA		13716: Medical students total correct knowledge score positively increased after educational experience.		13716: Sawning et al., 2017
							14173: USA	14173: LGBT health session delivered to first year medical students. Session was led by upper year students.	14173: N= 73 Medical knowledge-% correct: LGBT prevalence: *pre-education*: 30% *post-education*: 85% p<0.05 Transgender definition: *pre*: 45% *post:* 75% p <0.05 Same-sex marriage quality: *pre*: 95% *post:* 100% p=NS Suicide risk disparity: *pre:* 97% *post:* 100% p=NS	14173: NA		14173: medical student knowledge increased in all areas from pre to post-intervention.		14173: Grosz et al., 2017
							14302: USA	14302: 90-minute professionalism workshop on transgender health for medical residents.	14302: N= 22 Knowledge score: *pre-workshop*: 5% *post-workshop:* 55% p=0.0006 *90-days:* 25% p= NS	14302: NA		14302: There was an increase in knowledge immediately post-intervention. There was an increase in perceived skill at both time points and in knowledge at 90-days post intervention.		14302: Kidd, Bockting, Cabaniss, et al., 2016

Quality assessment							Study details			No. of participants/events		Summary of Findings		
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention		Integrated content into professional education	No integrate content	Reported effects/outcomes	Certainty	Reference
							14334: USA	14334: Single gender identity lecture offered to medical students.		Perceived interview skill: *pre-workshop*: 45% *post-workshop*: 75% p=NS *90-days*: 65% p= NS 14334: N=41 Knowledge exam: Question 1: *pre-exposure*: 63% *post-exposure*: 93% p<0.001 Question 2: *pre-exposure*: 20% *post-exposure*: 50% p<0.001	14334: NA	14334: there was an increase in students choosing the correct answers to 2 knowledge questions.		14334: Eriksson & Safer, 2016
							12152: USA	12152: 3 hour brief ally training facilitated by a university LGBT affairs department.		12152: N= 37 Median SOCCS Scores: pre: 140 post: 144 p < .01	12152: NA	12152: Students SOCCS scores increased from pre to post-intervention.		12152: Rivers & Swank, 2017
							12181: USA	12181: Transgender health and medicine course. Half of the instructors were transgender.		12181: N= 46 Mean knowledge score: Cultural competency/history: *pre*: 4.5 *post*: 4.5 p= NS *3-month*: 5 N=14 p=0.015	12181: NA	12181: Students transphobia scale score decreased from baseline to immediately post. Student knowledge increased in 4 categories at immediate follow up and in 2 categories at 3 months follow-up.		12181: Braun, Garcia-Grossman, Quinones-Rivera, et al., 2017

ia BPG

			Quality assessment					**Study details**		**No. of participants/events**		**Summary of Findings**		
№ of studies	**Study design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Publication bias**	**Country**	**Intervention**	**Integrated content into professional education**	**No integrate content**	**Reported effects/outcomes**		**Certainty**	**Reference**
							12813: USA	12813: Full credit LGBT counseling course offered as a summer elective.	Terminology: *pre:* 4.67 *post:* 5.21 p < 0.01 Primary care of TG people: *pre:* 3.39 *post:* 4.85 p <0.01 Medication use for gender affirmation: *pre:* 3.78 *post:* 4.65 p <0.01 California policies *pre:* 3.09 *post:* 3.41 p= NS *3-month:* 4 N=14 p=0.026 Federal policies *pre:* 1.04 *post:* 1.03 p <0.01 *3-month:* 2 N=14 p=0.06 Health disparities *pre:* 4.35 *post:* 4.52 p = NS Mean transphobia scale score: *pre:*15.9 *post:* 12 p= 0.0021 *3-month:* p=NS 12813: N= 23 Mean SOCCS score: *pre:* 4.71 (.68) *post:* 5.76 (.55) p <0.001	12813: 23 Mean SOCCS score: *pre:* 4.43 (.69)	12813: SOCCS and LGB-CSI increased from pre-intervention to post-intervention. SOCCS scores were improved in the post-intervention compared with the control group.			12813: Bidell, 2013

Quality assessment							Study details			No. of participants/events		Summary of Findings		
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention		Integrated content into professional education	No integrate content	Reported effects/outcomes	Certainty	Reference
								Control: Comparison group was a matched control group who had not taken the course.		A positive difference was found between intervention and control group final scores (p< 0.001) Mean LGB-CSI score: *pre*: 2.82 (0.75) *post*: 4.85 (0.56) p<0.001	*post*: 4.71 (.68) p=.092			
							13062: USA	13062: LGBT course for internal medical residents.		13062: 100 Resident confidence increased from pre-education to *post-education* in 8/10 areas (p<0.05) and resident knowledge increased from *pre-education* to post-education in 10/18 areas (p<0.05).	13062: NA	13062: Resident confidence had a positive direction of effect in 8/10 areas and resident knowledge had a positively direction of effect in 10 out of 18 areas.		13062: Ufomata et al., 2017
							13331: USA	13331: Transgender youth curriculum delivered through 6 online modules and an observational experience in a pediatric gender clinic.		13331: N= 28 Knowledge score: *pre:* 22% *post:* 56% p< 0.001 Perceived knowledge: *pre:* 1.8 *post:* 3.8 p< 0.001 Self-efficacy score: *pre:* 3.5 *post:* 7.0 p <0.001	13331: NA	13331: Students objective knowledge, perceived knowledge and self-efficacy increased post-intervention.		13331: Vance, Lasofsky, Ozer et al., 2018

№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention	Integrated content into professional education	No integrate content	Reported effects/outcomes	Certainty	Reference
			Quality assessment					Study details	No. of participants/events		Summary of Findings		
							13354: USA	13354: Transgender care curriculum offered in the doctor of pharmacy program. 70% of the course was on cultural sensitivity, 30% on pharmacotherapy. *Control:* The participants were compared to fourth year students who had not received the curriculum.	13354: 71 Mean knowledge score: 72.5% p < 0.01 compared to control Mean confidence score: 76.8%, p < 0.01 compared to control. Mean comfort level for providing care: 3.33 p = 0.955 compared to control Mean comfort level for medication counseling: 3.41 vs. p = 0.295	13354: 38 Mean knowledge score: 63.4% Mean confidence score: 60.6% Mean comfort level for providing care: 3.35 Mean comfort level for medication counseling: 3.11	13354: Students in the intervention group had higher knowledge and confidence scores than those in the control group. There was no difference in mean comfort levels in providing care or counseling between groups.		13354: Ostroff, Ostroff, Billings, et al. 2018
							13472: USA	13472: Transgender medicine course offered as an elective for 4th year medical students.	13472: N=20 Students reporting high knowledge: *Pre-test:* 0% *Post-test:* 85% p < 0.001 Students reporting high skills (caring for transgender patients):	13472: NA	13472: Student's increased in their rating of knowledge, comfort caring for transgender clients and confidence providing care from pre to post intervention.		13472: Park & Safer, 2018

ia BPG

Quality assessment							Study details			No. of participants/events		Summary of Findings		
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention		Integrated content into professional education	No integrate content	Reported effects/outcomes	Certainty	Reference
							1392: USA	1392: Transgender-simulated patient simulation (TSPS): It aimed to improve students' knowledge, skills, and attitudes with regard to providing culturally congruent nursing care. Control: students who are not taking the oncology elective course but enrolled in other mandated courses during the summer 2019 semester.		*Pre test:* 10% *Post test:* 80% p <0.001 Students reporting confidence providing transgender care: *Pre test:* 45% *Post test:* 80% p =0.04 1392: n=16 intervention TSET subscores: Cognitive: mean difference, SD: Intervention group: 1.57, .781 Practical: Intervention group: 1.42, 1.08 Affective: Intervention group: 1.35, .709	1392: n=41 comparison/control TSET subscores: Cognitive: mean difference, SD: Control group: 0.99 1.00 Practical: Control group: 1.19 1.26 Affective: Control group: 0.85 .809	1392: Cultural competency scores across three domains were higher in the intervention group compared to the control group.		1392: Ozkhara San et al, 2020
							1529: USA	1529: a comprehensive pediatric transgender curriculum embedded the curriculum embedded within the adolescent medicine rotation because all pediatric residents were required to do a		1529: Phase 1 (entire curriculum): n=20. Pre curriculum: 2.4 Post curriculum: 4.2	1529: NA	1529: knowledge score increased from pre to post intervention.		1529: Vance et al., 2020

iaBPG

№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention	Integrated content into professional education	No integrate content	Reported effects/outcomes	Certainty	Reference
								Quality assessment	**Study details**	**No. of participants/events**	**Summary of Findings**		

№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention	Integrated content into professional education	No integrate content	Reported effects/outcomes	Certainty	Reference
							1597: USA	4-week rotation in adolescent medicine. 1597: Effectiveness of standardized patients (SP) during Objective Structured Clinical Examination (OSCE) in the delivery of endocrine care for transgender individuals.	1597: Almost all fellows correctly discussed the risks and benefits of hormone therapy (5/6), whereas only one-half correctly asked about readiness/eligibility for hormone therapy (3/6).	1597: NA	1597: Knowledge was improved for some fellows in some domains but this was not consistent for all fellows and domains.		1597: Stevenson, et al., 2019
							27: Spain	27: A specific course, containing lectures, round tables, and workshops on transgender issues was proposed. Control: did not receive any type of training or specific activity regarding healthcare for transgender people.	27: Film-Forum group (n = 31) Lecture group (n = 28) Post test mean score Film forum 0.757 (0.025) PBL 0.721 (0.027)	27: n=57 Post test mean score Control 0.409 (0.019)	27: Post test scores were higher in both education groups compared with the control group.		27: García-Acosta et al., 2019
							213: USA	213: The eight-hour symposium on LGBTQ health. Learning objectives were designed to fill known gaps in the School of Medicine and Health Science curricula. Control: students who did not attend the symposium.	213: n=29 LGBT-DOCSS overall pre 66.7 (6.9) post 75.1 (7.1)	213: n=134 LGBT-DOCSS overall pre 66.7 (6.9) post 75.1 (7.1) comparison group	213: Knowledge as measured using the LGBT-DOCSS increased post-intervention compared with both pre intervention and the comparison.		213: Pratt-Chapman and Phillips, 2020

Evidence Profile Recommendation 5.0: Promoting 2SLGBTQI+ Health Equity

Quality assessment							Study details			No. of participants/events		Summary of Findings		Certainty	Reference
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention		Integrated content into professional education	No integrate content	Reported effects/outcomes			
							1912: USA	1912: One-hour "Gender Transition Therapeutics" lecture was included in the Endocrine, Women's Health, and Genitourinary module due to its focus on hormonal therapies, but content also included elements of cultural competency, critical consciousness, and other health considerations for transgender patient.		1912: n=60 Overall student survey: Mean scores (SD) Pre-test: 2.8 (0.8) n=43 Post-test: 3.91 (0.7) n=47	71.3 (9.3) .020 1912: NA	1912: Student knowledge increased from pre to post intervention.			1912: Leach et al., 2019
							1922: USA	1922: Lab-based LGBTQ-related curriculum with specific focus on transgender health was planned and delivered in the fall of 2017 with the following learning objectives: 1) use appropriate language in caring for patients in the LGBTQ community, 2) explain ways to ensure a welcoming environment for patients in the LGBTQ community, 3) list hormone therapy options for transmen and transwomen, 4) counsel patients on physical changes induced by hormone therapy, and 5) counsel patients on appropriate administration, adverse effects, and monitoring of masculinizing and feminizing therapy.		1922: n=85 Student pharmacists' knowledge improved from the pre-survey to the post-survey assessing testosterone administration routes, determining contraindications to estrogen, and choosing an optimal estrogen product. Students' understanding of the role of the pharmacist and their comfort in caring for transgender patients also increased between pre- and post-survey.	1922: NA	1922: Student knowledge increased from pre to post intervention.			1922: Knockel et al., 2019

Quality assessment							Study details			No. of participants/events		Summary of Findings		Certainty	Reference
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention		Integrated content into professional education	No integrate content	Reported effects/outcomes			
							2007: USA	2007: Fifth year medical school LGBTQ health course.		2007: pre-intervention: n=433 post-intervention: n=541 There were improvements in knowledge as measured through several domains. [overall score not reported]	2007: NA	2007: Student knowledge improved from pre to post intervention.			2007: Salkind et al., 2019
							2119: USA	2119: This intervention was named "eQuality: leading medical education to deliver equitable quality care for all people, inclusive of identity, development, or expression of gender/sex/ sexuality" and involved an integrated comprehensive curriculum revision that included 50.5 h of new or revised curriculum content dedicated to LGBTQI+ health.		2119: n=181 Pre-intervention: mean IAT score (SD): M year 1 (n=72): Sexuality: 0.31 (0.40) Race: 0.30 (0.39) Weight: 0.27 (0.34) M year 2 (n=105): Sexuality: 0.45 (0.41) Race: 0.38 (0.39) Weight: 0.29 (0.31) Post intervention: mean IAT score (SD): M year 1: Sexuality: 0.21 (0.42) Race: 0.24 (0.39) Weight: 0.22 (0.38) M year 2: Sexuality: 0.33 (0.49) Race: 0.28 (0.42) Weight: 0.26 (0.35)	2119: NA	2119: Knowledge and skills was improved according to the IAT score for race and sexuality. However there was no difference for weight (no curricular content).			2119: Leslie et al., 2018
								2133: 1-hour didactic lecture on social determinants of health from an LGBT		2133: n=63 Question 1: mean score (95% CI)	2133: NA	2133: Responses to all questions improved from pre intervention to post-intervention.			2133: Cooper et al., 2018

RNAO
Registered Nurses' Association of Ontario
L'Association des infirmières et infirmiers autorisés de l'Ontario
Speaking out for nursing. Speaking out for health.

iaBPG

Quality assessment							Study details			No. of participants/events		Summary of Findings	Certainty	Reference
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention		Integrated content into professional education	No integrate content	Reported effects/outcomes		
							2133: USA	perspective, in the 3rd year of a medical school curriculum.		Pre lecture: 5.8 (5.4-6.2) Post lecture: 8.1 (7.8-8.4) Question 2: Pre lecture: 5.1 (4.6-5.6) Post lecture: 7.7 (7.3-8.1) Question 3: Pre lecture: 5.0 (4.5-5.5) Post lecture: 7.9 (7.5-8.3) Question 4:Pre lecture: 3.7 (3.1-4.3) Post lecture: 8.1 (7.5-8.7) Question 5: Pre lecture: 5.5 (5.1-5.9) Post lecture: 8.2 (7.9-8.5)				
							2152: USA	2152: High fidelity simulation lab with trans patient and didactic lecture.		2152: n=48 The median score on the overall GAP scale increased from 114 before to 125 after the simulation.	2152: NA	2152: Knowledge scores increased from pre to post intervention.		2152: Maruca et al., 2018
							2209: USA	2209: Doctor of Pharmacy course focused on transgender health. Three hours of in-class time was divided into a two-hour active learning session and a one-hour panel discussion. 2878:		2209: n=54 Before the learning session, the median confidence level was 4/10 (IQR 3–6). After the class session, the median confidence increased to 7/10 (IQR 6–8).	2209: NA	2209: Confidence levels increased from pre to post intervention.		2209: Newsome et al., 2019

ia BPG

Quality assessment							Study details			No. of participants/events		Summary of Findings		Certainty	Reference
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention		Integrated content into professional education	No integrate content	Reported effects/outcomes		Certainty	Reference
							2878: USA	Educational session on transgender Health. Delivered to 1st and 2nd year medical students at Integrated Grand Rounds, a pedagogical method in which basic science and clinical faculty members co-present didactic content interspersed between live patient interviews and student-led small group discussions.		2878: Students' knowledge of transgender medicine standards of care also increased, though students' understanding of gender expression did not change. [multiple domains improved, no overall score reported]	2878: NA	2878: student knowledge increased from pre to post intervention.			2878: Click et al., 2020
							4789: USA	4789: 2-hour Interprofessional Course on Trans/non-binary Affirming Care for Nursing, Medicine, Pharmacy, Health Professions and Public Health students.		4789: n=56 Student knowledge (mean scores): Pre-intervention: 5.20 Post-intervention: 9.29 Student interpersonal comfort (mean scores- subscales of TABS): Pre-intervention: 58.43 Post intervention: 61.75 Student Sex/gender beliefs (mean scores): Pre-intervention: 32.80 Post-intervention: 38.78 4818: n-44	4789: NA	4789: Students knowledge and comfort increased from pre intervention to post-intervention.			4789: Allison et al., 2019

Quality assessment							Study details			No. of participants/events		Summary of Findings		
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention		Integrated content into professional education	No integrate content	Reported effects/outcomes	Certainty	Reference
							4818: USA	4818: 1-h mandatory lecture for 1st year students, teaching faculty at each site introducing key concepts related to transgender people and their health disparities. The lecture included an explanation of the spectrum of identities associated with gender expression and sexual orientation, a broad overview of LGBT + health disparities, and the description of a patient scenario to demonstrate how subtle aggressions by medical staff may lead to less health care utilization and poorer treatment outcomes.		Student knowledge improved across five questions from pre to post intervention [however summary scores were not reported].	4818: NA	4818: Knowledge improved from pre to post.		4818: Najor et al., 2020
							4922: USA	4922: 1-hour didactic lecture on transgender health. These didactic sessions included educational information about transgender health and appropriate medical treatment, as well presentations from a male-to-female and a female-to-male transgender person regarding their transition and the medical care they received during that time in their life.		4922: Knowledge Scores from survey: (n=163 completed pre survey; 115 post survey and 18 90-day survey) Survey scores (mean): Pre-intervention: 2.36 Post-intervention: 2.74 90 days post-intervention: 2.81	4922: NA	4922: Knowledge scores increased from pre to post intervention and were maintained after 90 days.		4922: Cherabie et al., 2018
							256: USA	256: module on gender minority health as part of the advanced		256: n=11 Mean test scores Medical knowledge pre 4.73 (1.3) post 7.55 (1.4)	256: NA	256: Knowledge test scores across three domains increased from pre to post intervention.		256: Klotzbaugh et al., 2020

ia BPG

Quality assessment							Study details		No. of participants/events		Summary of Findings		
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention	Integrated content into professional education	No integrate content	Reported effects/outcomes	Certainty	Reference
							291: Canada	pharmacology course for advanced practice nursing students. The module was approximately 90 minutes long and included gender minority–specific content related to medical knowledge and health disparities, as well as local and national policies. 291: The positive space training course used a human rights framework to guide content with an examination of terminology; understanding myths and realities; and communicating with sensitivity.	Disparities pre 0.55 (.69) post 1.82 (.41) Policy pre 0.82 (.98) post 2.73 (.47) 291: n=160 Students had improvements across the three course competency items following the course: knowledge of LGBTTQ+ communities (pretest, M = 2.7, SD = 1.0; posttest, M = 4.2, SD = 0.66); ability to correctly address someone from LGBTTQ+ communities (pretest, M = 2.9, SD = 2.6; posttest, M = 4.5, SD = 2.4); and comfort level communicating in an inclusive language with members of the LGBTTQ+ communities (pretest, M = 3.3, SD = 1.1; posttest, M = 4.3, SD = 0.73.)	291: NA	291: Students knowledge increased across the three course competencies.		291: Haghiri-Vijeh et al, 2019

Evidence Profile Recommendation 5.0: Promoting 2SLGBTQI+ Health Equity

Quality assessment							Study details		No. of participants/events		Summary of Findings		Certainty	Reference
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention	Integrated content into professional education	No integrate content	Reported effects/outcomes			
							1187: USA	1187: Nursing students were given one week to complete three online modules designed by the author that contained didactic content on delivering culturally competent care to the LGBT population. These modules included key concepts from the literature for providing culturally competent-LGBT-focused care: 1) basic terminology related to gender and orientation; 2) relevant determinants of health and health disparities; 3) specific clinical foci for members of the LGBT community; 4) theories and strategies for harm prevention/reduction in the LGBT community; and 5) the supportive role of the public health nurse in caring for LGBT individuals.	1187: n= 124 There was an improvement in overall LGB SOCCS scores before the project implementation (M= 4.58, SD = 0.76) and after project implementation (M= 5.27, SD = 0.790).	1187: NA	1187: Knowledge according to SOCCS scores increased from pre to post intervention.			1187: McEwing, 2020
							1190: USA	1190: Gender-affirming healthcare curriculum After completion of the preassessment, M2 students were provided access to online videos and lecture slides. The online videos totalled 1 hour and 35 min in length and included didactic material	1190: n=127 Overall, student Gender Identity Competency improved from preassessment (M=93.06, SD=10.12) to postassessment (M=103.74, SD=11.94)	1190: NA	1190: Total score, knowledge and skills improved from pre to post intervention.			1190: Thompson et al., 2019

Quality assessment							Study details			No. of participants/events		Summary of Findings		Certainty	Reference
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publicatio n bias	Country	Intervention		Integrated content into professional education	No integrate content	Reported effects/outcomes			
							1199: USA 1201: Mexico	(box 1). Students were given approximately 1 week to review this material in preparation for a required case-based workshop followed by a 10-question quiz. 1199: Elective course on LGBT health. Didactic topics for the course were chosen in a systematic manner using the course learning outcomes developed from guidelines regarding LGBT health issues. 1201: A 12 hour-long training module on multicultural competencies with SGM populations, divided into eight 90-minute-long sessions, was integrated into an undergraduate-level course. The training covered six core themes: (1) concepts related to sexual health, and sexual and gender diversity; (2) biological influences on sex development, sex assigned at birth, and intersex conditions; (3) gender theories and gender diversity; (3) sexual orientation and diversity; (5) SGM discrimination and mental health outcomes; and (6)		1199: There was an improvement in scores on the course learning outcomes from the pre-course to post-course for each question. [no overall score reported] 1201: N=17 Knowledge Mdn pre 2 post 4 M pre 2.47 post 4.41 SD pre 0.72 post 0.62	1199: NA 1201: NA	1199: Knowledge improved on all learning outcomes from pre-course to post-course. 1201: Knowledge increased from pre to post intervention.			1199: Jann et al, 2019 1201: de los Reyes & Collict, 2020

№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention	Integrated content into professional education	No integrate content	Reported effects/outcomes	Certainty	Reference
								Quality assessment → **Study details** → **No. of participants/events** → **Summary of Findings**					

№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention	Integrated content into professional education	No integrate content	Reported effects/outcomes	Certainty	Reference
							1293: Switzerland	inclusive clinical practices and SGM advocacy. 1293: A compulsory one-hour lecture on sexual orientation and gender identity development during adolescence was offered to all fourth-year medical students. The lecture focused on facts about health issues of LGBT adolescents and was given by a pediatrician experienced in adolescent health.	1293: N=64 who returned surveys Factor Pre-class° mean (SD) Post-class° mean (SD) Attitudes 84.8 (13.6) 86.8 (15.4) Knowledge 73.7 (18.1) 87.9 (15.7) Judgement 69.8 (16.5) 74.4 (18.8) Experience 77.0 (16.5) 82.6 (16.8)	1293: NA	1293: Students improved in all knowledge and competency domains from pre to post.		1293: Wahlen et al, 2020
							1303: USA	1303: Teaching Module on Intersectionality of Sexual Orientation, Gender Identity, and Race/Ethnicity	1303: Of the 89 total students in the class, 82 filled out the presurvey, and 83 filled out the postsurvey. Knowledge scores increased from pre to post in all domains. [no overall score reported]	1303: NA	1303: Knowledge increased from pre to post intervention for all domains.		1303: Bi et al, 2020

Student Experience *(assessed with: evaluation surveys created by the researchers (3 studies), simulation effectiveness tool–modified (SET-M), Training Utility and Satisfaction Survey*
Follow-up: *immediately post-intervention*

№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention	Integrated content into professional education	No integrate content	Reported effects/outcomes	Certainty	Reference
5	Single arm quasi-experimental	Very Serious[d]	Not Serious	Not Serious	Serious[e]	None	14173: USA	14173: LGBT health session delivered to first year medical students. Session was led by upper year students.	14173: N= 73 Student ratings of each components mean (SD)	NA	14173: Student rated session components positively.	⊕○○○ Very Low	14173: Grosz et al., 2017

Quality assessment							Study details			No. of participants/events		Summary of Findings			
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention		Integrated content into professional education	No integrate content	Reported effects/outcomes		Certainty	Reference
	(Pre/post design)									Student-delivered presentation: 3.767 (0.921) Patient panel discussion: 4.877(0.371) Small-group discussion: 3.767 (0.950) Small group case: 2.750 (1.258)					
							213: USA	213: The eight-hour symposium on LGBTQ health. Learning objectives were designed to fill known gaps in the School of Medicine and Health Science curricula. Control: students who did not attend the symposium.		213: Overall, there was a high level of satisfaction with the symposium. Participants rated all educational activities at the event somewhat to very useful for future clinical practice, with the lowest rating for the presentation on resources to enhance SGM health curricula (mean 4.0 SD 1.1) and highest rating for the LGBTQI patient panel Q&A session (mean 4.7 SD 0.5).		213: The symposium was rated highly though there was no comparison group.			213: Pratt-Chapman and Phillips, 2020
							291: Canada	291: The positive space training course used a human rights framework to guide content with an examination of		291: n=160 Training Utility and Satisfaction Survey		291: Students highly rated the positive space training.			291: Haghiri-

Evidence Profile Recommendation 5.0: Promoting 2SLGBTQI+ Health Equity

Quality assessment							Study details			No. of participants/events		Summary of Findings		Certainty	Reference
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Country	Intervention		Integrated content into professional education	No integrate content	Reported effects/outcomes			
								terminology; understanding myths and realities; and communicating with sensitivity.		The median score was 30 out of 35 indicating that most students felt the training was useful.					Vijeh et al, 2019
							426: USA	426: Transgender Standardized Patient Simulation (TSPS) focusing on the management of an oncological emergency using a cultural competence and confidence model and following the international simulation guidelines for the scenario design, evaluation, and implementation.		426: n=32 Results obtained from the adapted SET-M tool on the learning subscale revealed that all students (n = 32) strongly agreed that both prerequisite components and participation in prebriefing of TSPS strategy were beneficial to their learning and increased their confidence.		426: Students highly rated the simulation education course.			426: San et al, 2019
							1199: USA	1199: Elective course on LGBT health. Didactic topics for the course were chosen in a systematic manner using the course learning outcomes developed from guidelines regarding LGBT health issues.		1199: N=19 The mean score on all 11 evaluation questions was 4.5 or greater, indicating most students agreed or strongly agree with all items.		1199: Students highly rated the course across 11 evaluation questions.			1199: Jann et al, 2019

NA: Not Applicable

[a]Two systematic reviews included 8 and 13 individual studies each. An additional 35 primary studies were identified.

[b] One systematic review was rated as low risk of bias and the other was rated as unclear risk of bias based on ROBIS. The study was rated as unclear due to limited details and reported of the quality appraisal in the systematic review. Two systematic reviews rated included studies as low risk, moderate risk and high risk of bias. About a third of the studies in each category (low/moderate/high). We downgraded by 1.

[c] Variety of tools and surveys used to assess knowledge and skill of students. While all studies reported an improvement in knowledge, studies reporting on change in practice including attitudes were inconsistent. We downgraded by 1.0.

[d] Studies were assessed using the ROBINS-I tool. All 5 studies were rated as critical risk of bias due to confounding, outcome measurement and missing data. We downgraded by 2.

[e] Total number of participants across 5 studies was 313. We downgraded by 1.

RNAO Registered Nurses' Association of Ontario
L'Association des infirmières et infirmiers autorisés de l'Ontario
Speaking out for nursing. Speaking out for health.

ia BPG

CERQual Evidence Profile

Recommendation Question: **Should integrating 2SLGBTQI+ health content into professional education (including policies) be recommended?**

Recommendation 5.0: The expert panel recommends academic institutions integrate 2SLGBTQI+ affirming health content into curricula for all students entering health professions.

Aim: To explore the perceived benefits of integrating 2SLGBTQI+ health content into professional education for nurses and the interprofessional team on knowledge and skills of students and student experience.

Bibliography: 12105, 12152, 13580, 13929, 1535, 1201, 1258, 1303, 1922

Studies contributing to the Finding	Included study designs	CERQual Assessment				Overall CERQual Assessment of Confidence	Explanation of Judgement
Finding (knowledge and/or skills of students): Students expressed gaining knowledge through self-reflection and awareness of personal biases; leading to confidence in acting as an LGBT advocate.							
		Assessment of Methodological Limitations	Assessment of Relevance	Assessment of Coherence	Assessment of Adequacy of Data		
12105: Vinjamuri, 2017	12105: Focus groups with grounded theory analysis	Moderate concerns (The study was rated as some concerns due to researcher reflexivity and data analysis)	No concerns (The studies represented the phenomena of interest)	No concerns (The patterns in the data were relatively clear)	Moderate concerns (Only one study included offering moderately rich data)	**Low confidence**	The finding was graded as low confidence due to moderate concerns over methodological limitations of the individual studies and moderate concerns over adequacy of data.
Finding (student experience): Students expressed experiencing more openness and comfort about 2SLGBTQI+ health content through self-awareness about personal biases, power and privilege. Students expressed a desire to create open and aware practice settings and be an ally to 2SLGBTQI+ persons.							
12105: Vinjamuri, 2017 12152: Rivers & Swank, 2017 13580: Sequeira, Chakraborti & Panunti, 2012 13929: Sekoni et al., 2017	12105: Focus groups with grounded theory analysis 12152: semi-structured interviews with phenomology 13580: Online survey with thematic analysis	Moderate concerns (Three studies were rated as some concerns and five studies were rated as high risk of bias)	No concerns (The studies represented the phenomena of interest)	Minor concerns (Most but not all included studies contributed to the overall finding)	No concerns (Eight studies and one systematic review offering relatively rich data)	**Low confidence**	The finding was graded as low confidence due to moderate concerns over methodological limitations of the individual studies and minor concerns over coherence.

Registered Nurses' Association of Ontario
L'Association des infirmières et infirmiers autorisés de l'Ontario

Speaking out for nursing. Speaking out for health.

ia BPG

1535: Gavzy et al., 2019 1201: de los Reyes & Collict, 2020 1258: Brondani et al, 2020 1303: Bi et al, 2020 1922: Knockel et al., 2019	13929: systematic review of quantitative studies 1535: open-ended survey 1201: focus group and survey with content analysis 1258: evaluation survey with thematic analysis 1303: evaluation survey with thematic analysis 1922: survey with content analysis					