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CME Information: Sexuality Education in North American Medical Schools: Current Status and Future Directions

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- Review the current state of the art in sexuality education for North American medical students and to articulate future directions for improvement.

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CME

Sexuality Education in North American Medical Schools: Current Status and Future Directions

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ABSTRACT

Introduction. Both the general public and individual patients expect healthcare providers to be knowledgeable and approachable regarding sexual health. Despite this expectation there are no universal standards or expectations regarding the sexuality education of medical students.

Aims. To review the current state of the art in sexuality education for North American medical students and to articulate future directions for improvement.

Methods. Evaluation of: (i) peer-reviewed literature on sexuality education (focusing on undergraduate medical students); and (ii) recommendations for sexuality education from national and international public health organizations.

Main Outcome Measures. Current status and future innovations for sexual health education in North American medical schools.

Results. Although the importance of sexuality to patients is recognized, there is wide variation in both the quantity and quality of education on this topic in North American medical schools. Many sexual health education programs in medical schools are focused on prevention of unwanted pregnancy and sexually transmitted infection. Educational material on sexual function and dysfunction, female sexuality, abortion, and sexual minority groups is generally scant or absent. A number of novel interventions, many student initiated, have been implemented at various medical schools to improve the student's training in sexual health matters.

Conclusions. There is a tremendous opportunity to mold the next generation of healthcare providers to view healthy sexuality as a relevant patient concern. A comprehensive and uniform curriculum on human sexuality at the medical school level may substantially enhance the capacity of tomorrow's physicians to provide optimal care for their patients irrespective of gender, sexual orientation, and individual sexual mores/beliefs. **Shindel AW and Parish SJ. Sexuality education in North American medical schools: Current status and future directions. J Sex Med 2013;10:3–18.**

Key Words. Medical Education; Sexuality Education; Medical Students; Medical School

Introduction

The Pan American Health Organization (PAHO) defines sexual health as “the experience of the ongoing process of physical, psychological, and socio-cultural wellbeing related to sexuality. It is not merely the absence of dysfunction, disease, and/or infirmity. For sexual health to be attained and maintained, it is necessary that the

sexual rights of all people be recognized and upheld.” [1]

Sexuality is a lifelong human experience [2]. All physicians, regardless of specialty focus and/or patient demographics, should have some familiarity with sexuality and sexual function [3]. The extent to which medical doctors may play a role in the sexual health of their patients is exponentially greater today than at any other time in history [4].

The U.S. National Institute of Health (NIH) issued a statement indicating that healthcare professionals should be provided with: (i) courses in effective sexual history taking; (ii) courses in the diagnosis and management of sexual dysfunction; and (iii) an understanding of the interdisciplinary approach to the evaluation and management of sexual dysfunction [5].

Physicians have a leading role in providing unbiased, accurate information on sexual practice and behavior [6]. Physicians should be expected to have a greater grasp of not just the physiological foundations of sexual functioning but also of the broader sociocultural, moral, and psychological implications of sexual health [7–9]. Sexual health is of great importance to virtually every person but each individual's expression and understanding of sexuality is unique. Consequently, the well-trained physician must be able to relate to patients with a wide spectrum of personal circumstances and concerns [7,9].

A recent study of Americans older than 50 years reported that just 38% and 22% of men and women, respectively, had discussed sex with their healthcare provider [2]. Physicians have contributed to this by failing to “bridge the gap” in addressing the needs of their patients for information on sexuality [3]. McCance et al. reported that as few as 25% of primary care physicians surveyed routinely asked patients about sexual well-being. The majority of physicians who failed to inquire did so because they felt inadequately trained in how to properly take a sexual history or evaluate a sexual problem [10]. In a survey of 1,154 practicing obstetrician/gynecologists, Sobecki et al. reported that just 40% inquire about sexual problems and less than 30% inquire about sexual satisfaction. Over a quarter of respondents reported having expressed “disapproval” of their patient's sexual practices [11].

Sexuality education at the medical undergraduate level is often inadequate to properly prepare future physicians for their future roles as sexual health educators [9,12]. It has been reported that between 42% and 62% of contemporary medical students find the training on sexuality issues that they have received in medical school inadequate [8,13–15]. The Liaison Committee on Medical Education (LCME, <http://www.lcme.org>) sets curriculum requirements for undergraduate medical education; unfortunately, the current curricular requirements related to sexual health are rather

vague. Recommended topics include: behavioral subjects; communication skills, medical consequences of common societal problems, such as abuse; diverse cultures and belief systems, and gender biases [7,9]. The expectation that physicians be knowledgeable about contraception and the prevention of sexually transmitted diseases is well-supported and has led to the incorporation of curricula to address these important issues at most medical schools in North America [16].

In this review we will highlight the state of the art in sexuality education in North American medical schools. Particular focus will be devoted toward recent curricular innovations. We will also speculate on future directions that should be taken to enhance student's educational experience. While the general principles are intended toward individuals training in North America, sexuality is a global and universally human concern and therefore many of our findings/suggestions may be applicable to other nations and regions.

Methods

A PubMed search was conducted for publications pertaining to medical student education on sexuality. References from particularly important sources were consulted for additional citations. We reviewed documents germane to sexual health that have been produced by international bodies (such as the World Health Organization, the United Nations, etc.) In this review, we speculate on the implications and discuss ramifications of the given findings. Suggestions for future curricular innovations are summarized.

Results

Potential Barriers to Discussing Sexuality with Patients that May Be Addressed in Medical School

Many physicians and students have difficulty facilitating conversations with their patients pertaining to sex [3]. Potential reasons include fear of offending the patient, a notion that sexuality is not sufficiently important, a personal discomfort with sexuality, a lack of time related to concern for other pressing medical conditions, preconceptions and value judgments about what constitutes “normal” and “healthy” sexual expression, concerns about the development of inappropriate feelings between patient and provider, differences in age/language/culture, prejudices, prior traumatic experiences with sex, and a lack of knowledge on

human sexuality and how to help patients with sexual problems [3,6,12–14,17–23]. Both physicians and students have greater difficulty broaching the topic of sexuality with patients of a different gender [11,17,24]. Even in clinical encounters where sexuality issues are addressed, providers may make patients uncomfortable by using medical jargon or vulgarity, inappropriate/awkward/insensitive comments, making moral judgments on lifestyle choices, assuming things about the patient's sexuality based on appearance or other factors, or seeming to have an excessive or prurient interest in the patient's sexual life [25]. There is also evidence that a provider's personal experience of sex and sexuality may be associated with difference in how they address the issue with patients; a survey study of medical students in North America suggested that students at risk for sexual dysfunction and those who had not engaged in partnered sexual activity were more likely to report discomfort addressing sexuality in the clinical context [15]. This finding is far from new [26].

Given this extensive list of potential barriers to frank discussion of sex between patient and provider, it is not surprising that both trainees and practicing physicians have trouble initiating conversations about sex with their patients. Many of these barriers may be addressed during the educational process and lessen provider's difficulties speaking with patients about sex. Indeed, perception of the adequacy of training in human sexuality during medical school was the strongest predictor of comfort in addressing sexuality clinically in the aforementioned survey of medical student sexuality [15].

It does not appear that there is much basis for the concern that provider inquiry about sexuality and sexual function (assuming it is done with tact and sensitivity) will often lead to patient embarrassment. A survey of college and graduate students indicated that healthcare-provider-initiated conversations about sex were the most preferred means of acquiring sexual health knowledge. Subjects were generally more satisfied with providers who were knowledgeable and comfortable dealing with sexuality (75% and 68% of respondents, respectively) [8]. In a large study of men over age 30, 70% responded favorably to questions about their sexual health. Five percent were neutral regarding discussing sexual issues, and about 10% each expressed shyness or unwillingness to be questioned further regarding sexuality. Only 1.4%

did not accept the offer to talk about sex; 1.2% responded negatively to a pre-visit questionnaire on sexuality, and just 2.5% reported that it was difficult to talk about sex with their provider [27]. Data on female patient's response to sexual health inquiry are more ambiguous, with at least one report indicating that some women believe providers should only inquire about sexuality if it relates to an associated health problem [28] and other studies suggesting that women may welcome inquiry on sexual health [3,29,30].

It is logical to speculate that considerate and respectful inquiry into sexual life is unlikely to offend most patients of any gender, even in situations where no presenting sexual concern is present. It is important to note that although patients welcome the opportunity to discuss sexuality, they prefer their physician to bring up the topic [31]. Informing the patient that sexual problems are quite prevalent may help "normalize" the experience of having a sexual dysfunction and enable patients to speak more freely and honestly [29]. Medical trainees should be informed and encouraged to initiate conversations on sexuality with their patients [29].

The State of Undergraduate Sexual Health Education

In 1964 only three North American medical schools had formal curricula on sexuality [32]. During the 1960s and 1970s there was a dramatic expansion in the coverage of reproductive topics in medical schools [32,33], although sexuality outside of the reproductive context remained underrepresented with just 60% of medical schools including a sexuality curriculum and 32% offering electives in human sexuality [34]. This heterogeneity persisted through the 1970s, with a 1980 report indicating that there was great variability between schools with respect to the sexuality curriculum and that most of the material presented addressed issues of contraception and pregnancy [35]. During this era less than half of medical schools incorporated discussions of diagnosis and/or management of sexual dysfunction [35].

The most comprehensive recent information about the status of undergraduate sexual health education in the United States and Canada is reported in a recent survey by Solursh et al. [36]. In this survey, the person(s) responsible for the overall undergraduate medical curriculum was contacted at 141 medical schools; 101 valid

responses (72%) were returned. Interestingly, follow-up outreach revealed that some of these nonrespondents failed to participate in the survey secondary to complete absence of sexuality curricula at their institution. The survey inquired about the type of educational experiences, whether they were mandatory or elective, whether they were designed by single or multiple disciplines, and the number of course hours dedicated to human sexuality. The questionnaire also assessed specific content areas, as well as exposure to and training in clinical settings addressing sexual problems. Finally, the survey assessed the availability of continuing medical education programs in sexual medicine and related topics [36].

A total of 84 respondents (83%) reported using a required lecture format for sexuality education. Two thirds of the schools used a multidisciplinary approach to teach sexual health, and three quarters of the schools reported that psychiatry was the most frequently involved discipline. The majority (54%) of the schools provided 3–10 hours of education. The curricula of 96 respondents included causes of sexual dysfunction (94%), treatment of sexual dysfunction (85%), “variant” sexual identification (79%), and issues of sexuality in illness or disability (69%). While lecture-based learning on evaluation and treatment of sexual problems was offered at most schools, only 42% offered clinical training programs that focused on treating patients with sexual problems and dysfunctions and 55% provided the students in clerkships with supervision in addressing patient’s sexuality issues. A variety of other topics and formats were reported by respondents [36].

The Solursh et al. survey instrument was quite brief, and hence there is some ambiguity with respect to the findings of this study and the precise nature and manner in which the specified hours are spent on sexuality education [36]. Regardless, it is apparent from this report that medical students receive a broad range of non-standardized training that varies from school to school. Important elements may not be adequately represented at many schools [16].

Attitudes, Knowledge, and Skills

Sexual health curricula are typically divided into attitude, knowledge, and skill components. We recommend that the knowledge component of a core sexual health curriculum for medical students include genital anatomy and function; the interre-

Table 1 Required elements of medical school curricula in human sexuality (adapted from Parish and Clayton [7] and Parish and Rubio-Aurioles [9])

Attitudes	
1.	Self-awareness and reflection on personal beliefs, values, and attitudes toward sex and how they may influence care of the patient
2.	Awareness of variability of “normal” sexual expression (gender identity, sexual orientation, etc.)
3.	Awareness of ethical issues in sex, contraception, and relationships
Knowledge	
1.	Knowledge of the biology of sexual development at the molecular and organismal level
2.	Anatomy and physiology of human sexual response
3.	Reproductive biology (contraception, pregnancy, infertility)
4.	Sexually transmitted infections
5.	Psychological influences on sexual development
6.	Causes and correlates of sexual dysfunction (biological, psychological, social)
7.	Management options for sexual dysfunction
8.	Impact of medical illnesses and their treatments on sexual function
9.	Sexuality in special populations (adolescent, aged, disabled)
10.	Sociological issues (ethnicity, race, culture, religion, sexual orientation, and economic status)
11.	Lesbian/gay/bisexual/transgender sexuality and sexual health care for these populations
12.	Sexual abuse and violence
Skills	
1.	Sexual history taking
2.	Comfort with sexual language and terminology in a fashion understandable to patients
3.	Physical examination of the genitourinary/gynecological organs
4.	Integrated, multifactorial diagnosis of sexual dysfunction
5.	Management of pharmacologically induced sexual dysfunction
6.	Basics of behavior therapy for sexual dysfunction

relationships between various organs systems that pertain to sexual function; effective means of contraception and safer sex; evaluation and treatment of sexually transmitted infections (STIs); communication skills regarding sexuality between patient and providers as well as between providers; an understanding of different means of sexual expression (with regard to sexual acts as well as sexual orientation and preference); and the evaluation and treatment of sexual dysfunctions such as erectile dysfunction, premature ejaculation, hypoactive sexual desire disorder, sexual arousal disorder, and anorgasmia, and sexual pain [37]. An in-depth description of recommended attitudes, knowledge, and skills for inclusion in medical school curricula is presented in Table 1, modified from Parish and Clayton [7,9].

Specialized issues, such as technical aspects of specialty procedures such as penile prosthesis

placement or abortion, specific techniques of psychosexual therapy, and issues most germane to specific patient populations may be more appropriate for students with a strong interest in sexual health and a desire to make sexuality issues a focus of their clinical practice [7,12]. For these students, dedicated electives beyond the core curriculum may be of benefit. The exact scope of the elective could be tailored to a student's interest and preference but should incorporate clinical interactions with a diverse panel of patients; this may necessitate multidisciplinary training involving psychiatry, urology, obstetrics/gynecology, internal medicine, family practice, and physical therapy. One example is the University of Massachusetts Medical School's multidisciplinary fourth-year elective on women's health, which encompasses several areas germane to women's sexuality [19]. In some circumstances electives may lead to changes in the core curriculum, as was evidenced at the medical schools of both Brown University and Tufts University [38,39].

Special Issues in Sexual Health Education

Lesbian, Gay, Bisexual, Transgender (LGBT) Issues
The American Medical Association (AMA) has released a policy statement acknowledging a disproportionate burden of certain health problems and a greater likelihood of hesitancy in discussing health issues with providers among LGBT individuals [40]. The AMA has also advocated for LGBT awareness among physicians, starting with education at the medical school level [41]. This interest culminated in a recent Institute of Medicine report that highlighted important limitations and areas for future development in LGBT health [42]. These statements were made due to a historical lack of attention to the LGBT population at most medical schools. In 1992 survey of faculty at 126 U.S. medical schools, the average time allocated to LGBT topics was 3.5 hours. Eight of the 82 respondents (10%) reported that there was no teaching on gay and lesbian issues during medical school training [43]. The student organization Medical Students for Choice (MSC) reported that LGBT topics are covered at just less than half of medical schools during preclinical training; schools in the Southern United States were significantly less likely to include these topics [16].

A more contemporary study LGBT curricula in North American medical schools was reported by

Obedin-Maliver et al. in 2011 [44]. Deans of medical curriculum at 176 North American osteopathic and allopathic medical schools completed a 13-item questionnaire on LGBT topics between March 2009 and March 2010. The median hours of instruction in LGBT material in North American medical school was 5 hours (intraquartile range 3 to 8 hours), an apparent but slight improvement over the 1992 data. Approximately 75% of schools responded completely; of these approximately 7% had no preclinical curriculum on LGBT issues and a third had no formal curriculum on LGBT issues during clinical years. Canadian and osteopathic schools were more likely to not include LGBT curricular content, although this was not universal. Of 16 topics deemed central to LGBT curricula, approximately 75% of respondent schools included at least half of these when considering both required and elective coursework. Specific topics related to transgender individuals (sex reassignment surgery, transitioning) and others relating to primary care issues which are prevalent in LGBT communities (domestic violence, substance abuse, chronic diseases such as diabetes) were included by less than half of respondent institutions. HIV and sexual orientation were covered at more than 80% of respondent schools. Just 20% of schools included faculty development options for teaching LGBT content [44].

A lack of training on LGBT health in medical schools may be responsible for the findings of a 2006 report of sexual history taking in clinical medical students, which indicated that less than half screened for same-sex sexual activity "always" or "often" when taking a sexual history and over 50% rarely or never determine a patient's sexual orientation [45]. Students with a greater number of self-reported interactions with patients from LGBT communities were more likely to routinely screen for same-sex sexual behaviors and sexual orientation; however, this may simply represent a greater discovery rate of LGBT orientation by students who already ask questions pertaining to this topic [45].

Recent innovations for LGBT education have included elective offerings for preclinical students on medical risks of LGBT communities, often as part of a more comprehensive sexuality elective opportunity [19,39,46]. A typical format includes a 1-hour panel discussion of patients from LGBT communities with question and answer sessions

followed by small group discussion and review of cases led by a faculty member, often from an LGBT community [46]. Topics include LGBT terms, homophobia, specific healthcare needs, and recognition that there is tremendous variability in the LGBT communities. Such electives have been shown to lead to significant improvements in students' knowledge about healthcare access issues in LGBT patients, enhanced awareness of the relevance of knowing the patient's sexual identity and practices to the provision of optimal health care, and increased willingness to treat LGBT patients in practice [46]. Education on care of persons from LGBT communities can also be integrated into general curricular components (i.e., an LGBT patient who presents for a health concern not related to their sexuality, etc.).

Sexuality in the Young and Aged

Students and practicing physicians have expressed significant discomfort in addressing sexuality in children/adolescents and in older patients [17,47]. Children and adolescents need education on sexual development, puberty, boundaries, and decision making regarding sexual activity and contraception [19]. Older patients are more likely to report sexual dysfunctions and may be less likely to be familiar with and/or use barrier methods for prevention of STI, placing them at greater risk of disease transmission [48,49]. While the sexual concerns of the very young and the very old may tend to differ somewhat from those of the young and middle-aged adult population [48,50,51], sexuality is a topic germane to people of all ages and merits consideration by any provider who interacts with patients [8]. Several case-based teaching initiatives have incorporated standardized patient (SP) at the extremes of age to enhance student comfort addressing the sexual health needs of these populations [49,52]. Didactic lectures on these topics have also been implemented at some institutions as part of the core curriculum [37].

Specific Sexual Behaviors

Physicians must be equipped to relate empathically to individuals who may have sexual identities and mores different from their own. Historically this has meant educating students with conservative beliefs on about addressing sexuality in non-heterosexual patients, patients who engaged in extramarital, high-risk, or variant sexual behavior, and (in some particularly progressive educational

settings) gender-variant patients [46,49,53]. However, the sexual health needs of individuals with conservative and/or traditional notions of sexual propriety may in some cases need to be addressed by a provider with liberal or less-restrictive notions of what is appropriate sexually. Hence, it is important that all providers understand their own beliefs on sexuality and recognize how that may influence their perceptions and care of patients [54].

Students and providers have reported that they often feel particular discomfort discussing sexual behaviors such as masturbation, noncoital (i.e., oral or anal) intercourse, same-gender sexuality/encounters, extramarital affairs, consensual non-monogamy, fetishism, and consensual sadomasochistic activities [11,19,37]. Students may have little or no knowledge of such practices, or may have moral objections to such behaviors [11]. While the personal beliefs of the student should be respected, students should be educated on means to recognize their own beliefs as their own opinions rather than universal truths and avoid letting them influence the care that is provided to patients [23]. Rather, students should focus on fair and unbiased education of their patients on potential health risks of their preferred sexual activities. In extreme cases the student should learn that in cases where disagreement is profound, referral to another provider may be the most appropriate means of caring for the patient.

HIV and STI

The tremendous public health ramifications of HIV infection in particular and STIs in general mandate that this topic be given substantial coverage in the core curriculum of medical trainees. While the pathophysiology of HIV/STI is generally covered well in medical training [16,22], potential areas for improvement in education include training in psychosocial and counseling issues pertaining to testing and counseling [19,39,49]. These are of critical importance due to social behaviors surrounding HIV infection and other venereal diseases. Giving students the opportunity to hone skills in sexual health history taking has been shown to enhance their facility at counseling patients on HIV/STI risk [52,55].

Contraception

A survey conducted through chapters of MSC at 77 medical schools (63% of the 122 invited to

participate) indicated that pregnancy and contraception are covered at virtually every medical school during preclinical training (100% and 96%, respectively) [16]. While attention to contraception in and of itself is a need that is being met, questions remain on whether or not students receive knowledge on the full gamut of modern contraceptive options. Oral contraceptive pills (OCPs) are the most routinely covered topic on pregnancy prevention; other methods tended to receive less or even no consideration, which is concerning given the relatively high failure rate of OCPs and the advisability of nonhormonal or less user-dependent forms of contraception for some individuals [16]. Efforts should be made to ensure that students are aware of the various contraceptive options available, including abstinence. It is also critical that students be familiar with the failure rates and potential complications of each option.

Abortion

Abortion deserves special consideration secondary to its highly controversial nature. Abortion is a very common procedure with significant public health ramifications and physicians should have some knowledge on this topic [8]. Elective abortion is covered during preclinical training at roughly two thirds of medical schools and pregnancy options counseling in 36% according to the MSC survey. The most frequently covered topic in the core curriculum is medical abortion [16], a topic most often conveyed in lecture format [56]. Schools in the southern United States were significantly less likely to include these topics [16]. This may not be an entirely accurate representation of the overall medical school presence of abortion topics since many schools did not respond and schools without MSC chapters may be less likely to have abortion teaching in the curriculum [16].

A survey of clinical clerkship directors for obstetrics/gynecology rotations (78 respondents of 126 invited, 62% response rate) indicated that no formal abortion education is provided to preclinical students, third-year students on clinical rotations, and students of any level at 44%, 23%, and 17% of medical schools, respectively. About one third of third-year rotations offered a lecture on the topic of abortion; and 45% had an optional clinical experience available for third- or fourth-year students, although participation was generally low [56]. Students who do participate in optional

clinical rotations with abortion service providers generally find the experience valuable [57].

Although coverage for the topic of abortion is variable, a survey of 100 third-year students completing their obstetrics/gynecology clerkship indicated that the vast majority (96%) thought abortion was an important topic for coverage in medical school [57]. Medical school electives on abortion topics for preclinical students have been advanced at some schools [39]. Oftentimes, an elective may be coupled with an opportunity to shadow in a clinical setting where abortion services are provided [39]; students with moral objections to abortion are exempted from this activity.

Legal Aspects of Sexuality

A particularly important medicolegal decision surrounds disclosure of a patient's HIV/STI status to the patient's sexual partners [49]. A different set of rules may also apply to these test results in minors. A recent study indicated that these topics are of great interest to medical students and many desire more detailed coverage; at the same time, educators and facilitators often report a lack of knowledge on this important topic [49]. Certain sexual acts that are commonly practiced (such as oral sex) continue to be illegal in many American states. The frequency with which these laws are enforced may vary but providers should be familiar with local statutes for common sexual behaviors such as oral sex, anal sex, extra- or premarital sex, and nonsexual erotic activities such as bondage/domination sadomasochism. Attention could also be directed toward managing issues in adolescent sexuality where one partner is a legal adult (18 or 19) and the other an underage (<18 years) minor [49].

Sexual Violence and Rape

Issues of sexual violence and rape are sensitive topics that evoke strong emotional reactions in most individuals and may be a source of substantial discomfort for healthcare providers [19]. Medical students must gain skills in relating to patients who have been the victims of sexual violence so as to help them remove themselves from the situation (in cases of ongoing abuse) and/or recover from physical and emotional trauma. Small group discussions and role play have been utilized to help students build up skills for helping these patients [38,49]. Formal didactics may also play a role in providing context and general principles for

proper management of this important public health issue [19,37].

General Principles of Sexuality Education

General Principles of Curriculum Development

There are many alternatives for imparting sexuality education to learners. Based on a review of educational programs for practicing physicians, Davis et al. reported that educational interventions that promote interaction between participants (case discussion, role-play, or hands-on practice sessions), have a mixed format of educational styles, and follow an orderly sequence of topics are most effective at changing practice patterns and, potentially, healthcare outcomes. There was less evidence to support a role of pure didactic lectures at changing physician behavior [58]. These findings are in line with general principles of adult education which support learner-centered, active rather than passive interventions with focusing of topics relevant to the learner's needs [58–61].

In addition to particular teaching styles, consideration should be given to cross-disciplinary collaboration as a key requirement for sexual health curriculum development in medical school [62]. Harold Lief, the famed sexuality education pioneer, acknowledged this over 40 years ago [32]. Interdisciplinary collaboration is important because sexuality has ramifications that cross specialty boundaries and even beyond health care. On a more practical level greater university/faculty involvement will increase the incentive for curriculum directors to incorporate sexuality topics into the already heavy medical student educational program. Unfortunately, most contemporary reports indicate that sexuality education at the medical school level is often the province of a single or few educators, often from a single discipline such as psychiatry [37,63]. Diversity in the sexuality education faculty can only serve to enrich the educational experience for students and therefore should be considered an important goal for curriculum development [19].

Sexual health curricula must be subject to robust and rigorous evaluation. Development of tools by which to assess the effectiveness of curricular innovations in the real world has been a long-standing problem in education research [9]. It is important to measure the effectiveness of sexual health curricula in preparing medical students to evaluate and treat sexual problems in patients. How this is to be

accomplished remains a topic for further research, debate, and consideration.

Lecture Format

The large-scale didactic format for sexuality education is the dominant paradigm in medical school [36]. Despite some criticisms and limitations [58], it plays an important role in education due to its efficiency at conveying a standardized body of information to a large group [19,62]. Core topics in anatomy and physiology are probably best suited to this format. Supplementation with small groups and laboratories as appropriate is indubitably beneficial. Additional topics that may be considered for lecture-style teaching include survey courses to introduce the scope of the problem of sexual issues, the basic science physiology underlying these issues, and general principles of effective patient interaction [8,49]. This format does not easily permit student-directed learning; other learning formats are useful as adjuncts to permit personalized goal setting and self-assessment.

Panel Discussions

Panels permit experts of differing backgrounds to express their opinions on topics of interest. This format allows experts from various medical specialties (urology, psychiatry, gynecology, sexology, physical therapy, primary care, etc.) to relate to students how they approach sexual problems in patients. Panels may also consist of professionals from various nonmedical backgrounds such as clergy, lawyers, public health experts, or individuals representing a diversity of sexual lifestyles/preferences (heterosexuals, LGBT people, non-monogamists, etc.) This intervention may help students learn to relate to alternative points of view and has been highly rated when utilized for sexuality education in resident physicians [12]. Ideally this form of teaching incorporates a question and answer format. To ensure that important topics are covered adequately, panelists may articulate some basic principles early in the session.

Discussion Groups

This is an excellent format for students to explore their own feelings about sexual issues and to learn from others with different perspectives [33]. Educational opportunities that involve a greater degree of interactivity are generally well received [39,58]. These groups should ideally involve students from different backgrounds under the

guidance of a trained and experienced facilitator who can elicit participation from all involved and keep the tone respectful and interested. Such interventions have been shown to improve student's ability to examine their own beliefs and gain respect for the perspectives of others, even those with whom they may not agree about controversial topics such as homosexuality and contraception [49,53,64]. Discussion groups may also be an opportunity to learn about the opinions and thoughts of individuals of different gender. Eliciting a sexual history from a patient of a different gender is an acknowledged challenge in medical practice; discussing ways to facilitate these exchanges is essential [17,24].

Small Group Case-Based Seminars

These permit more in-depth exploration of subtle nuances that affect how certain problems should be evaluated and managed in individual patients [62]. This has been used to good effect in many recent student-led curriculum innovations [46,49]. Whereas discussion groups pertain more to self-reflection and awareness, this intervention is targeted toward building knowledge on how to relate to patients. Case-based scenarios do not replicate real-world interpersonal dynamics and thus may not fully prepare students for interactions with live patients.

Role Play

Scripted role play (assigning identities to two individuals who then act out a scenario) can be useful, particularly to practice using open-ended questions and normalizing statements to improve patient comfort. Role play may be utilized by experienced trainers as a means to demonstrate sexual-history-taking skills for a small or large group audience; participants may also participate in role play so as to personally practice interviewing skills [38,49]. Scripted role-play teaching for sexuality issues received approval ratings of around 90% in a study from the Chicago Medical School compared with an average approval rating of 68% for other courses in an introduction to clinical medicine curriculum [49]. Particular scripts for role play in this curriculum included increasingly complex scenarios involving: (i) contraception counseling for a sexually active 16-year-old female patient with a 19-year-old male partner (issues of adolescent sexuality, contraception, and laws pertaining to statutory rape); (ii) evaluation of a 71-year-old widowed female patient unfamiliar

with barrier contraceptives presenting for annual physical (sexuality/safer sex education for the elderly, acknowledgement that sexual activity occurs in the geriatric population, possible sexual dysfunction); (iii) counseling and treatment for a heterosexual 24-year-old heroin user who was raped by another man and subsequently found to be HIV and hepatitis C positive (issues of rape, HIV status and partner disclosure, drug use and sexuality); and (iv) a married 56-year-old man or woman involved in an extramarital affair (without spousal knowledge or consent) who has herpes that he or she has not disclosed to his or her spouse (issues of potential morality discordance between patient and provider, need for disclosure to at-risk person vs. respect for patient confidentiality). Each case presentation was followed by discussion and debriefing by the small group [49].

While useful, role play sessions may be difficult to facilitate as participants often have trouble staying "in character" with friends/colleagues. Provision of feedback from this type of learning is also problematic. Logistical limitations make it impractical for one-on-one role play to be observed by a single trained facilitator; an alternative may be role play within the context of a small group session with feedback provided by the group. This is more time/resource efficient but some individuals may get a sense of "stage fright," which may tend to diminish their efficacy at role-play interactions.

Standardized Patient (SP) Scenarios

Similar to role play, this involves students interacting with a trained SP who acts out a certain role. While utilization of an SP may add substantial logistical and financial expense, it mitigates the limitations of role play in that the trainee does not know the SP and it is hence easier to stay "in character." Individualized feedback on performance may be given immediately by the SP and/or by a faculty observer; this may serve as a more meaningful measure of student skills compared with self-assessment. In certain circumstances it may also be useful to videotape the interaction and obtain specific feedback from an instructor. This sort of intervention may be useful as a formative introduction to prepare students on how to interact with patients of various types or as a summative "final examination" that may be used to assess student achievement [8,65].

SPs are not a new nor novel educational tool [66] but have been featured prominently in many

recent reports. The enhanced curriculum in sexuality at Case Western Medical School is an example. In this curriculum, students rotate through a multi-station examination in which they perform tasks such as interviews, physical exams, and counseling with SPs in realistic settings during which their interaction is recorded by video camera. At each station learner performance is evaluated with specific checklists or global rating scales, completed by faculty proctors and/or SPs [37]. At Tufts University School of Medicine, SP encounters are a part of the third-year clerkship curriculum and include the opportunity to interact with SP portraying a young woman seeking contraception, a homosexual man at risk for HIV, and a man noncompliant with blood pressure medications secondary to medication-induced sexual dysfunction [38]. Another report from the University of Kentucky provided follow-up data on students who enrolled in a 4-hour SP workshop intended to teach sexual health interview skills in four SP clinical scenarios: a 17-year-old female SP presenting for a health physical, a 27-year-old man requesting an HIV test, a 34-year-old woman requesting oral contraceptives, and a 61-year-old woman presenting for a checkup [52]. The SP encounters were followed by a discussion and teaching with a faculty preceptor. Follow-up testing at 3.5 weeks during an encounter with an SP portraying a 28-year-old woman concerned about having an STI indicated that students who had participated in the workshop scored a full standard deviation better on a checklist of required inquiries pertaining to HIV counseling and sexual history taking and had significantly better “interpersonal interviewing skills” relative to peers who had not participated [52]. A follow-up study from the same group confirmed these findings and furthermore indicated that participants had better scores on written exam materials pertaining to sexual health and history taking [55]. These studies are of particular note in that subjects did not specifically select this workshop; rather, they were enrolled in it depending on what time of year they completed their ambulatory internal medicine rotations [52]. While not a truly randomized cohort, this study does suggest that this intervention may have beneficial effects for students irrespective of their baseline comfort and facility in sexual health inquiry.

It is critical that SPs be highly trained and motivated individuals who can accurately portray case

scenarios and provide appropriate feedback to medical student learners. In some situations, particularly in large urban areas, training and contracting of educators can be accomplished by organizations external to the medical school; this may permit recruitment of a more diverse and representative cohort of potential SP. An example of such an organization is Project Prepare in the San Francisco Bay Area. Project Prepare provides highly trained educators to area medical schools including the University of California at San Francisco, Stanford University, and Tuoro University College of Osteopathic Medicine.

Community/Peer Education

In addition to providing a valuable community service, educational outreach to the community (particularly adolescents, the elderly, LGBT people, etc.) may help students to examine their own beliefs about sexuality and to gain valuable perspectives from the individuals with whom they interact. Many medical schools offer such programs on topics that may pertain to human sexuality [24]. While this sort of involvement should not be a specific requirement, it may be useful as a means to fulfill a public service requirement for those schools that require some form of community outreach. Senior students may also consider serving as teaching assistances for junior medical students. A small group session for first-year students facilitated by a faculty member and a fourth-year student was substantially useful in reducing apprehension around dissection of the pelvis during the gross anatomy course [19].

Immersion/Desensitization

This technique involves exposing students to a variety of sexual practices, typically in a video format, with the intention of desensitizing them to sexual acts with which they may not have personal experience or knowledge. This technique was utilized in the 1970s. Examples include video depiction of “male-female genital intercourse, homosexuality, cunnilingus, fellatio, orgies, bestiality, and sadomasochism.” [67] While ostensibly well intentioned, it must be considered that display of sexually explicit imagery may be offensive to some students and without proper context such imagery may even enhance prejudicial feelings or discomfort about certain sexual acts and/or identities. Indeed, a 1976 study indicated that recording and review of practice patient interview

sessions were more useful than desensitization [66]. Desensitization may have a role in sexuality education, but in our opinion it should be a limited one and only used only when context for various sexual acts can be provided by experienced educators [32].

Training in Interviewing Couples

Involving the partner in discussion of sexual problems is acknowledged as a particular challenge among care providers [37]. While training in couples-based techniques might be of great benefit [6], this is an advanced technique that would require the participation of two SPs and ideally a trained facilitator/observer. Given that few providers will provide services to both partners of a couple this technique is probably best reserved for upper-level students/trainees with a particular interest in sexual health; students who are not interested in specializing in sexual health may not find this type of training time effective.

Testing/Course Credit

It is a near universal fact that students at all levels of training are more motivated to learn material on which they will subsequently be tested or for which they will receive some form of curriculum credit [37,39]. Some means of assessment and meaningful feedback from sexuality curricula must be incorporated. This can take the form of written material on standard tests, feedback/grading from SP encounters, and credit for active participation in small group discussions. While direct assessment of clinical skills (using observed clinical encounters and/or SP) has become standard for accreditation by both the LCME and the American College of Graduate Medical Education, these standards have not been universally applied to skills in sexuality education for medical students. Clearly, there is a need for more rigorous standards. Testing may also provide a valuable role in objective validation of existing curricula; many published reports on new curricula have relied on self-reported comfort or competence in addressing sexuality issues, end points that are of questionable objective merit.

Faculty Development

The recruitment, retention, and continued development of a core faculty in sexual health are critical to the success of any sexual health education innovation [37]. Student generally learn more and respond more favorably when lecturers are enthu-

siastic about their topic and well prepared for student interactions [39]. In turn, faculty should be informed about the size and level of their expected audience as well as the educational expectations of the activity so as to best tailor their educational outreach [39,49]. Faculty involvement in the process is essential not just for direction of student learning but also to ensure that university resources and sanction continue to be directed toward sexuality education. Given the limited quantity of time and resources available in medical school, a strong voice of advocacy from trusted and respected faculty is required to ensure that these topics continue to be represented. This requires support from departmental and university bodies to ensure that faculty are given time to develop curricula and keep themselves up to date by review of literature and attendance at educational meetings. Unfortunately, this need may not be receiving adequate attention at the current time. A 2003 survey reported that just 45 of 101 respondent medical schools (44.6%) offer graduate medical education courses in human sexual function and dysfunction [36].

Beyond simple faculty support, consideration may be given to providing healthcare professionals with extensive experience and training in addressing sexual issues with special certification. The European Academy of Sexual Medicine has made progress toward providing formal certification in sexual medicine under the auspices of the Union of European Medical Specialists [65]. The International Society for the Study of Women's Sexual Health has recently established a Fellowship Certification program [68]. The creation of these certification programs requires development of a formal core curriculum and fund of knowledge/skills that any specialist with interest in sexual medicine will be expected to possess. Depending on the given specialists training and interests, optional modules may be useful to more fully develop areas of particular expertise (such as surgical vs. medical vs. psychological approaches to sexual problems) [65]. While the requirements for such certifications go well beyond what is expected of undergraduate medical students, development of these specialty qualifications may serve as a valuable blueprint for future curriculum developments in medical students. Individuals who had completed such a curriculum would be ideal key faculty for medical student educational programs on sexuality.

Development of a Unified Curriculum for Institution at All Medical Schools

While there is variability in the cultural values, learning philosophy, and resources in medical schools throughout the world, sexuality is a universal human concern. Development of a comprehensive curriculum on sexuality may help facilitate education at medical schools worldwide. Ideally this curriculum would be respectful of local customs and beliefs while simultaneously ensuring that all physicians are trained to handle sexual concerns and questions in a manner befitting an occupation dedicated to the well-being and health of all people.

Conclusions

Despite substantial variability in the quantity and quality of sexuality education in medical school, a number of encouraging developments over the past decade have highlighted methods and means by which tomorrow's physicians can be better prepared to address the needs of their future patients. In many cases innovation has been pioneered by medical students themselves, particularly those who have premedical school experience in reproductive health issues [39,49]. It behooves practicing physicians, other healthcare providers, and medical school curriculum directors to provide both financial and logistical support in addition to mentorship for medical students who have a desire to enhance sexuality education. Sexual medicine professionals have a duty to take an active role in the development of new curricula in sexuality education.

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CME Multiple Choice Questions

1. The Liaison Committee on Medical Education *specifically* recommends that medical school curricula include coverage of all but which of the following topics?
 - a) Gender biases
 - b) Communication skills
 - c) Diverse cultures and belief systems
 - d) Contraception
 - e) Medical consequences of societal problems
2. According to the most recent data on this topic, issues in lesbian, gay, bisexual, and transgender (LGBT) health are currently covered during *pre-clinical* years at approximately what percentage of North American medical schools?
 - a) 90%
 - b) 75%
 - c) 50%
 - d) 25%
 - e) 10%
3. Evidence suggests that students/providers may have discomfort or difficulty when taking sexual histories from which of the following groups of patients?
 - a) Patients at the extremes of age
 - b) Patients of a different gender
 - c) Patients with non-normative sexual practices
 - d) Patients with a history of sexual abuse
 - e) All of the above
4. Which of the following educational formats has been shown to be best-suited for examination of personal beliefs and acquisition of respect for alternative beliefs?
 - a) Lectures
 - b) Case Based Scenarios
 - c) Discussion groups
 - d) Immersion
 - e) Standardized patient encounters
5. Which of the following sexuality education topics is *least* relevant for providers who care for children and adolescents?
 - a) Sexuality decision making tools
 - b) Sexual Dysfunction
 - c) Contraception
 - d) Sexual Development and puberty
 - e) Boundaries

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