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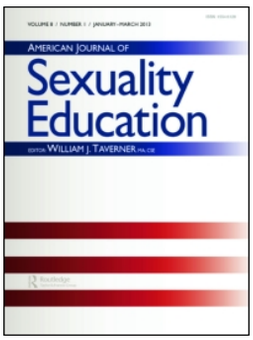

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RESEARCH

Perspectives on Conceptualizing Developmentally Appropriate Sexuality Education

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ABSTRACT

Despite recognition of the importance of a developmentally appropriate approach to sexuality education, there is little direct guidance on how to do this. This study employed in-depth interviews with experienced sexuality educators and developers of sexuality education materials to identify how this concept is understood and applied in the field. Developmentally appropriate sexuality education was conceptualized consistently across interviews to include (a) addressing developmentally relevant topics, (b) adapting content to cognitive development, (c) accommodating developmental diversity, and (d) facilitating the internalization of sexual health messages. However, these views fell short of incorporating the breadth of knowledge offered by adolescent development research.

KEYWORDS

Sexuality education; developmentally appropriate practice; adolescence; sexuality educator; curriculum development

Introduction

In the United States, three quarters of the states mandate some form of sexuality or HIV education in schools (Guttmacher Institute, 2013). Despite the recognized importance and wide reach of sexuality education and its potential for supporting healthy adolescent sexual development and positive sexual health outcomes, the field has been embroiled in a debate about the best approach to sexuality education for over a century (Goldfarb, 2009). Substantial effort has gone into evaluating the impact of sexuality education programs on adolescent sexual health outcomes. Most reviews of these evaluations have found limited evidence of program effectiveness in fostering positive adolescent sexual health and development (DiCenso, Guyatt, Willan, & Griffith, 2002; Johnson, Scott-Sheldon, Huedo-Medina, & Carey, 2011; Kohler, Manhart, & Lafferty, 2008; Oringanje et al., 2010; Scher, Maynard, & Stagner, 2006). This has been attributed to several factors, including methodological shortcomings of individual program evaluations (Constantine, 2013; Scher et al., 2006) and weaknesses in the underlying theoretical frameworks guiding

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programs, especially in regard to insufficient foundations in adolescent development research (Goldfarb & Constantine, 2011; Halpern-Felsher, 2011; Pedlow & Carey, 2004; Suleiman & Brindis, 2014).

Sexuality education

Current sexuality education approaches vary in their depth, scope, and philosophical underpinning (Goldfarb, 2009). In the United States, educational curriculum is determined at the state and school district levels—there are multiple competing requirements for time and no standard for those who provide sexuality education within the school. As such the hours of sexuality education provided to students varies widely across districts. The median hours in elementary school are 3.1 hours, in middle school 6 hours, and in high school 8.1 hours (National Guidelines Task Force, 2004). In some schools designated health, physical education, or science teachers provide the sexuality education curriculum, while in other schools community-based educators are contracted to provide these services. Though terminology usage varies, the two most prominent approaches can be characterized as sex education, which includes abstinence-only and abstinence-plus programs, and genuine comprehensive sexuality education (CSE). These approaches are distinguished by their content and strategies, with sex education generally providing a directive emphasis on the behavioral aspects of sexuality, and CSE employing a broader more positive health promotion and human development approach (Goldfarb & Constantine, 2011; National Guidelines Task Force, 2004). In this paper we focus on abstinence-plus and CSE approaches as the two more prominent approaches delivered in the United States. Abstinence-plus approaches generally include content on sexual anatomy, sexual behavior, abstinence, reproductive functioning, and disease and pregnancy prevention. CSE tends to include a range of topics such as growth and development, gender norms, sexual orientation and identity, love, attraction, pleasure, parenting, rights and responsibilities, and communication, in addition to disease and pregnancy prevention (Goldfarb & Constantine, 2011; National Guidelines Task Force, 2004).

Adolescent sexual development

A vast body of research on adolescent development paints a vivid picture of this stage of the life course, providing important insights into how adolescents think, make decisions, and experience motivation, and the types of supports they need for healthy development (Lerner & Steinberg, 2009; Steinberg, 2005, 2008). This research also highlights the normative aspects of adolescent sexual development that transcend cultures. These include establishing a sexual identity, identifying one's own values and beliefs about sexual behavior and relationships, learning about and practicing intimacy in romantic relationships, expressing sexual feelings, and experiencing sexual behavior (Diamond & Savin-Williams, 2009; Meschke, Peter, & Bartholomae, 2012; Schalet, 2011; Tolman & McClelland, 2011). While sexual

development is a lifelong process, the onset of puberty during adolescence marks the inception of eventual reproductive capabilities and the hormonal changes that increase sex drive, making sexuality a particularly salient aspect of development during this period. Changes in cognitive capabilities allow adolescents to become increasingly introspective and reflective about their sexual identity, sexual decisions, and relationships (Diamond & Savin-Williams, 2009; Steinberg, 2008).

Developmental appropriateness

The underlying premise of developmentally appropriate education is that it is grounded in developmental research with the goal of supporting optimal learning and promoting positive developmental trajectories (Meschke et al., 2012; National Association for the Education of Young Children, 1999). Developmental aspects of adolescence have important implications for sexuality education content and teaching approaches.

Wide support exists among experts for the use of developmentally appropriate perspectives in sexuality education (e.g, Jemmott III & Jemmott, 2000; Kim, Stanton, Li, Dickersin, & Galbraith, 1997; Kirby, Laris, & Rolleri, 2007). However, the only two published reviews to date to address this area have found little evidence of such use. Klein, Goodson, Serrins, Edmundson, and Evans (1994) found that among 10 sexuality education curricula for junior and senior high school students, there was inadequate coverage of several topic areas considered to be developmentally appropriate according to the 2004 SIECUS Guidelines for Comprehensive Sexuality Education (e.g., sexual behavior) (National Guidelines Task Force, 2004). Ten years later, Pedlow and Carey (2004) assessed 24 HIV prevention interventions and found that there were substantial variations in the use of developmental factors in these curricula. Outdated or incorrect interpretations of developmental research persist in programs, reflecting a significant disconnect between this research and sexuality education practice (Goldfarb & Constantine, 2011; Millstein & Halpern–Felsher, 2002; Suleiman & Brindis, 2014). Continued assessment of curricula content is essential in providing a basis for program appraisal and selection, as well as guiding future curricula development.

A notable challenge in bridging current research and practice has been the absence of a specific and widely accepted definition of developmentally appropriate sexuality education and its key features. Furthermore, it is not known how professionals most directly involved in the day-to-day implementations of sexuality education apply developmental concepts to their practice. As such, there is a critical need to understand how sexuality education professionals conceptualize adolescent development, their application of these understandings to their practice, and the challenges and barriers they experience in conducting developmentally appropriate sexuality education. In particular, the developers of sexuality education materials (curricula and guidelines) and the educators using these materials play a critical role in operationalizing this concept. The present study aimed to answer the question: How is adolescent development understood and practiced by sexuality educators

Table 1. Respondent descriptors.

Sexuality educator characteristics		
Organization type	Schooling level (age) served	Number of respondents
School	Middle school (ages 11–13)	2
	High school (ages 14–18)	1
	University undergraduate (ages 19–22)	1
School-based health center	High school (ages 14–18)	2
Community-based organization*	Middle school	1
	High school (ages 14–18)	2
	High school peer educators (ages 14–18)	1
	Youth adult/Postsecondary (ages 19–24)	1
Total		11
Characteristics of developer of materials		
Type of material developed	Schooling level (age) target of material	Number of respondents
National standards	Kindergarten–12th grade (ages 5–18)	2
Abstinence-plus curriculum	Middle school (ages 11–13), High school (ages 14–18)	3
Comprehensive sexuality education curriculum	Middle school (ages 11–13), High school (ages 14–18)	2
Total		7

*Several community-based organization educators taught multiple age groups, which indicated here based on the age group they were recruited to represent.

and developers of sexuality education materials? Practitioner perspectives on developmentally appropriate sexuality education are explored in comparison to concepts from current theories and research on adolescent development.

Methods

Participants

We conducted 18 in-depth interviews with experienced sexuality educators and developers of widely used sexuality education materials (Table 1). All respondents primarily worked within the United States and at the time of the interview were located in such urban areas as eastern, mid-western, and western regions of the United States. Respondents were identified through stratified purposeful sampling (Patton, 2002) in order to elicit a range of perspectives from the field on the definition and application of developmentally appropriate sexuality education.

Eleven sexuality educators were identified based on selection criteria developed to yield experienced informants. Criteria included (a) currently teaching any form of sexuality education to adolescents (ages 11–21), (b) at least five years of teaching experience in sexuality education with adolescents, (c) formal training in sexuality education, and (d) experience working with a standardized sexuality education curriculum. Sampled subcategories of sexuality educators included educators employed by community-based health organizations ($n = 5$) and school districts ($n = 6$). Experience ranged from 6–23 years, with an average of 13 years. All educators had received formal training in sexuality education through specialty training programs, conferences, and curriculum-specific courses, and all but one received

formal university coursework on the topic. Ten sexuality educators reported endorsing a CSE philosophy and one endorsed an abstinence-plus approach. Educator engagement with students ranged from long periods of engagement (e.g., a full school year) to one-time only workshops or short series.

The seven developers included those directly involved in the design of nationally used abstinence-plus ($n = 3$) and CSE ($n = 2$) curricula, together with leaders in the development of national sexuality education standards ($n = 2$) (i.e., Future of Sex Education Initiative, 2011; National Guidelines Task Force, 2004). They worked in a variety of institutions including academic, for profit, and nonprofit. All respondents were experienced developing materials for multiple age groups.

Methodology

Between October 2013 and February 2014, the first author conducted semistructured interviews. Interviews included questions about respondents' definitions of developmentally appropriate sexuality education, their understanding of adolescent development principles, and their application of these principles in practice. The interview protocol included (a) open-ended questions focused on eliciting definitions and examples of developmentally appropriate sexuality education from current practice, (b) respondent critique of a lesson from a popular sexuality education curriculum, and (c) description of a developmentally appropriate sexuality education program. All interviews were recorded and transcribed verbatim, and field notes were written immediately following each interview to capture emerging themes and to inform interview protocol iteration.

The first author conducted a multistep coding process of transcribed interviews in Dedoose to identify themes (version 4.12.4; SocioCultural Research Consultants, 2013). In the first step, general codes were identified based on main areas of interest to the study (e.g., developmentally appropriate definition, application of definition, developmental concepts, and barriers and facilitators). The second step produced subcodes within these main areas of interest derived from the systematic review of the adolescent development literature (e.g. psychosocial development, contexts of development), as well as through memos and observations compiled during the first step of coding (e.g., learning style, risk-focus, decision making). In the third step, code categories and the relationship between them were analyzed to identify themes. Themes were identified through respondent declaration, frequency, omission, similarities, co-occurrence of topics, and congruence with prior hypotheses (LeCompte & Schensul, 1999). Conflicting data within and across interviews were searched for in an effort to test the validity of the themes as well as to identify new themes (Antin, Constantine, & Hunt, 2013). Similarities and differences by respondent category were explored. It was hypothesized that developers and educators would have a different relationship toward the implementation of sexuality education programs and exposure to developmental concepts, thus producing different understandings and applications of developmentally appropriate sexuality education.

Results

Although recognition of the terminology "developmentally appropriate sexuality education" was high, with only one respondent reporting being unfamiliar with the term, overall there was a lack of specificity, and a lack of clarity regarding various aspects of the concept. Nevertheless, four major themes surfaced in the respondents definitions of this approach: (a) addressing developmentally relevant topics, (b) adapting content to cognitive and brain development, (c) accommodating developmental diversity, and (d) facilitating the internalization of sexual health messages. Despite variation in respondent approaches to sexuality education (i.e., abstinence-plus and CSE) and student populations of focus, there was great consistency in how these themes were described by respondents. However, some differences in conceptualization were noted between developers and educators, as described in the sections below.

Addressing developmentally relevant topics

Both sexuality educators and developers of materials described developmentally appropriate sexuality education topics as those that are relevant to students at their current levels of development. In addition, respondents considered it important to present topics in anticipation of upcoming informational needs, as explained by this curriculum developer:

> What makes something developmentally appropriate is one of two things: either children have questions about it and questions deserve answers or the adults are able to anticipate what children will need soon … So just like you wouldn't wait for your child to start kindergarten to tell them about kindergarten, you don't wait for your child or the children who are in your care to start puberty before you tell them about it—Comprehensive sexuality education curriculum developer

Most respondents felt that programs addressing multiple topic areas (e.g., relationships, pregnancy, HIV prevention, etc.) were generally better than single-issue focused ones (e.g. HIV prevention). However, fullness of content was not considered integral to the definition of developmentally appropriate sexuality education. For example:

> I don't think [single issue programs] should take the place of comprehensive sexuality education, but I think one could develop a [single-issue focused] developmentally appropriate curriculum—Abstinence-plus curriculum developer

When asked to describe developmentally appropriate sexuality education, most respondents focused on similar topic areas related to sexual development, namely puberty, romantic relationships, and sexual behavior. For example, in describing topic selection, an educator stated:

> I'm just thinking about the [physical] changes that they have in their body and the [sexual] desires that they are having—School-based sexuality educator, 13.5 years' experience

Both educators and developers reported identifying developmentally relevant topics by gathering information from students directly. Educators revealed maintaining their preselected topic area of focus regardless of student-identified interest, but integrated student-selected topics into the predetermined lessons (e.g., discussing contraceptives as part of a lesson about anatomy). Although sexuality educators did not report making large alterations to predetermined lesson topics based on student interests, no sexuality educator followed one published curriculum with complete fidelity, reporting that these were too rigid to meet student informational wants as identified through student request.

> The information that's presented on sexuality is pretty limited …So we've—well mostly I have been developing my own lessons—School-based sexuality educator, 20 years' experience

Most developers referenced determining topic selection based on research on adolescents and sexual development. One abstinence-plus curriculum developer described the process of refining content included in a sexuality education curriculum based on research conducted during a pilot testing the curriculum:

> We had no sexual [behavior] content in that [6th grade curriculum] and that was intentional … I mean those young people when we were piloting and doing the survey couldn't even say sex, they would say the 'S word' because they were too embarrassed to say sex—CSE curriculum developer

The majority of references to formative research were carried out by the developers as part of curriculum development.

Respondents described limitations to providing developmentally appropriate content. These included political limitations, in particular school-imposed restrictions on certain subject matter (e.g., contraceptive methods), as well as individual differences in student knowledge as a result of inconsistent exposure to sexuality education. These barriers can result in incomplete education on developmentally relevant topics.

Adapting content to cognitive and brain development

Both sexuality educators and developers of materials described a cornerstone of developmentally appropriate sexuality education to be the presentation of information in a way that responds to students' cognitive abilities, including use of language, level of detail, and types of scenarios used. Respondents referred to both cognitive and brain development, sometimes using these synonymously to describe how adolescents think, make decisions, perceive risks, and comprehend information.

The influence of cognitive and brain development on decision-making processes were salient across interviews. Respondents generally dichotomized decision-making processes as either active or passive, or as described by a school-based sexuality educator (13.5 years' experience) as those students who "really thought it through" and those in "the no-no, it isn't going to happen phase." Active approaches,

in which thoughtful evaluation of risk and benefits and advanced planning skills are engaged, were considered to be reflective of a more mature form of decision making that results in fewer "mistakes" or negative consequences, and in some cases were attributed to more advanced brain development. Passive approaches were defined as an absence of decision making that seemed to result in poor outcomes. Passive approaches were considered to be the result of a lack of empowerment as described by an educator talking about high school age youth attending an alternative school:

> They almost never make decisions. Sometimes they just let things happen to them … because they're young people and because their culture doesn't allow them a lot of power and a lot of control over their lives … —Community-based sexuality educator, 18 years' experience

Only one respondent addressed the role of emotions in decisions making:

> There was no thought process …just feeling, feeling, feeling …It's more about feeling, feeling, feeling, less about 'I need to protect myself, I need to go to the doctor.'—School-based sexuality educator, 11 years' experience

Respondents primarily cited brain development to describe adolescent risk perception, with several respondents suggesting that adolescents have low levels of risk perception, consider themselves to be invulnerable to negative outcomes, and are unable to modify their own behavior based on their peers' experiences.

> Teenagers tend to have an invincibility complex and even if they see something happen to their friend, they 'know' that's never going to happen to them … So that is an example of the prefrontal lobe not being as fully developed to be able to make all of those connections—Community-based sexuality educator, 13.5 years' experience

In describing how adolescent development influenced content development and adaptation, respondents primarily focused on cognitive development, with an emphasis on the transition from concrete to abstract thinking. For example, this educator described considerations in preparing a workshop:

> Do I need to approach it using something like a doll as opposed to just talking abstractly? Do they need something concrete to look at?—School-based sexuality educator, 15 years' experience

In addition, respondents reported varying the level of complexity in presenting information based on cognitive developmental characteristics of learners, with younger students being offered less detail and older students being provided more.

A minority of respondents described determinations of content presentation based on their understandings of adolescent decision-making processes. Finding ways to support adolescents, in particular those using passive forms of decision making, was considered a challenge.

> There isn't an easy way (to help students with less mature decision-making abilities) other than just providing them the information, giving them the condoms, providing them emergency contraception just to keep at home so that if something does happen, they're already prepared to take care of things for themselves if they want to—School-based sexuality educator, 13.5 years' experience

Accommodating developmental diversity

According to respondents, one of the primary purposes of the concept of developmental appropriateness in sexuality education is the recognition of developmental diversity during adolescence. All respondents discussed developmental diversity in some capacity.

Discussion of cognitive and physical developmental differences between both different- and same-aged adolescents was salient across most interviews. However, developmental diversity among students of the same age was rarely addressed. Most educators and a few developers described developmental diversity as being attributed to social or cultural differences:

> It is more of a culture based [difference] because my Pakistani and Iranian girls, a lot of them have no knowledge about anything …—School-based sexuality educator, 23 years' experience

Only one respondent, an abstinence-plus curriculum developer, did not see developmental differences between populations of young people, "No I haven't seen any developmental differences. Kids are kids, teens are teens … "—Abstinence-plus curriculum developer.

Respondents expressed differing opinions on how to best acknowledge developmental diversity in practice. In particular they differed in regards to which group of students to target. Several respondents suggested that materials should be designed to meet the needs of the average student, while some advocated teaching to the most advanced, and others to the lowest level student. It is unclear to what extent these perspectives contradict each other because respondents used different domains of development as indicators of differences, as well as different types of accommodations (e.g., content or strategies) to make. Discussions ranged from cognitive abilities more broadly to reading or learning abilities more specifically, to levels of sexual experience.

> So we are trying to hit a little more middle of the road knowing that there are some students … that are not really going to understand … but may spark something that they're curious about—School-based sexuality educator, 13.5 years' experience

> I don't believe that children can be harmed by too early education the way they can be harmed by too late education so if a subject area is developmentally appropriate for some people in a classroom, then it should be introduced … —CSE curriculum developer

> A lot of the students that I worked with were not … strong readers, they weren't quick thinkers … If I wanted young people in the class to be engaged I really needed to teach to the lowest common denominator—Standards developer

In general, early introduction of topics was viewed more favorably than waiting until all students in a classroom were perceived to need information about a particular topic. Most respondents referenced a need for flexibility for on-the-spot adjustments to lesson plans in order to respond to developmental diversity, for example:

> Oftentimes with a new group I tend to just bring a bag of tricks and see what they're interested in, especially if it is just a one-time class or maybe a conference-type space where there's no way I am going to know who is in the room—Community-based sexuality educator, 10 years' experience

Others mentioned classroom-based strategies to respond to developmental diversity including using multiple teaching techniques, repeating information, having an anonymous question box to gather and answer questions from students, incorporating lessons on how to search for information to empower students to seek out answers to their questions, and using individual reflection activities such as journaling. Programmatic level techniques included providing opportunities for individual counseling, either with the educator or through clinical services, building sequential curricula that repeat key messages, and developing curricula based on particular audience characteristics.

Despite describing several strategies for addressing developmental diversity within a classroom, doing so was considered by most respondents to be one of the primary challenges to implementing a developmentally appropriate approach to sexuality education. One-time presentations were considered particularly problematic by community-based sexuality educators as they allowed for very little time to identify particular student needs. In addition, respondents recognized that to make appropriate adjustments based on developmental needs, educators needed further training in adolescent development, as well as sexual development specifically.

Facilitating internalization of sexual health messages

Respondents viewed student internalization of sexual health messages as integral to motivating adolescents to adopt behaviors that promote sexual health. Internalization was viewed as an important function of sexuality education overall and a factor enhanced by being developmentally appropriate. Although only a minority of respondents explicitly linked the internalization of sexual health messages with developmental concepts, the facilitation of this process was at the core of many of the respondents' descriptions of their work. For example, an educator explained:

> I look at my job as an editor … what is the best way for [the students] to receive that information and internalize it in a way that can be useful for them—School-based sexuality educator, 20 years' experience

Internalization was described as resulting from an individual's ability to personally connect to the content. This abstinence-plus curriculum developer explains what must be considered when teaching, "not only how they learn but what they can learn contextually, what experiences they have and can use to hook new learning on … " There were divergent perspectives on the degree to which the educator or curriculum play a role in promoting student connection to the material.

> I think most of it [learning] really has to do with their development … because you can give somebody information a million times but if they don't really start to make that connection

> for themselves … it doesn't make a difference—School-based sexuality educator, 13.5 years' experience

> [W]hat you really want this program to do is to touch them [students] and help them get it [information], swallow it, and use it. And if they're not getting it when you teach it then you blew up an opportunity, so it's really important that the programs are designed to reach the kids—Abstinence plus curriculum developer

Readiness to receive new information was also thought to be critical to internalization. A common perception among respondents was that:

> Nobody wants to hear what they're not asking for. That just goes in one ear and out the other—Community-based sexuality educator, 6 years' experience

Despite this assertion, as mentioned previously, respondents varied in how they determined group readiness for sexuality education content in a classroom setting (e.g., at least one student showing readiness, most students showing readiness, all students showing readiness).

Respondents employed several strategies to facilitate the process of internalization. The most prominent was to identify topics of interest to students that allowed for the introduction or insertion of the intended content in a way that aligns with these interests.

> If I came in to teach anatomy, but everyone has a lot of birth control questions, I am going to switch my focus to talk about birth control but incorporate in as much anatomy as possible while I'm explaining those things—Community-based sexuality educator, 6 years' experience

For the majority of sexuality educators, creating a safe space and building rapport with students was deemed essential for identifying topics of interest and in facilitating openness.

Across respondent categories, limited time and resources dedicated to cultivating relationships between the educator and student were noted as important barriers to identifying how to best support the internalization of sexual health messages.

> I've been in programs where the staff … hadn't had enough time to build rapport with students and … it was really messy. But then once we've developed some rapport … the curriculum becomes more serious—Community based sexuality educator, 10 years' experience

Discussion

This qualitative study was conducted to identify how developmentally appropriate sexuality education is conceptualized by experienced professionals working in the field of sexuality education, contributing to a nascent field of student on the operationalization of "developmental appropriateness" in sexuality education. Interviews revealed four defining aspects of developmentally appropriate sexuality education: (a) addressing developmentally relevant topics, (b) adapting the content to cognitive and brain development, (c) accommodating developmental diversity,

and (d) facilitating the internalization of sexual health messages. Within each of these defining aspects, participants described content and teaching strategies required of a developmental approach. While the content described was specific to sexuality education, the teaching strategies could be relevant across topic areas.

Addressing developmentally relevant topics

In alignment with the health education literature (e.g., Lowenstein, Foord-May, & Romano, 2009), respondents highlighted the importance of selecting topics based on current and soon-to-be relevant developmental experiences for the students they were serving.

Developers of materials and sexuality educators largely differed as to whether including multiple content areas was a criterion of developmentally appropriate sexuality education. Most educators thought a wider ranging approach was better for students and named several topic areas that should be included. Among developers of materials, however, breadth of coverage was not presented as a necessary condition of developmental appropriateness. From developmental perspective, which highlights the overlapping nature of the various domains of development, to best support positive sexual development requires consideration of various domains of development (e.g., identity, emotional, and intimacy) (Steinberg, 2008). For example, belief about and experience with sexual behavior are largely influenced by intimacy development during adolescence. Therefore, neglecting to address intimacy may result in reduced relevancy of the topic to students.

Adapting content to cognitive and brain development

Cognitive and brain development were the most commonly referenced domains of development across interviews and were considered important in determining how to present and adapt content to improve student comprehension. This is not surprising given that a large and growing body of research on these aspects of adolescent development has received substantial coverage by popular media. Similar to the explanations given by respondents, media sources (e.g., Time Magazine, The New York Times, among others) have framed adolescent thinking and behavior as a result of adolescents' immature ability to engage cognitive control mechanisms required for planning and poor connections between the thinking and feeling parts of the brain (Steinberg, 2005). What was not explicitly discussed by respondents was how risk perception fits within the categories of active, passive, and emotionally driven decision making. In general active decision making was considered inherently better, while passive and emotionally driven decision making were considered flawed. There is a common perception, though not supported by research, that adolescents have low levels of risk perception (Steinberg, 2005; Millstein & Halpern-Felsher, 2002). In total, these assertions neglect some important considerations, including the context in which the decision is being made and the previous

experience of the adolescent (Crone & Dahl, 2012; Millstein & Halpern-Felsher, 2002).

Studies have found that by middle adolescence (ages 14–17) most individuals have similar cognitive capacities as adults, including the ability to make cognitively-based decisions such as planning for sex (Steinberg, 2005). However, several factors related to other domains of development (i.e., social and emotional) have been found to differentiate adolescent and adult decision making and consequent behaviors. These differences include adolescents having less experience in certain types of decisions and behaviors (Reyna & Brainerd, 2011), weighing risks and benefits differently, and often placing greater importance on benefits than on risks. The emphasis is on short-term outcomes (Halpern-Felsher, 2011), being more motivated by social-affective factors, including finding novel, exciting, and sensual experiences (Ryan & Deci, 2000). These can be enhanced by the presence of peers (Crone & Dahl, 2012; Gardner & Steinberg, 2005), and holding implicit beliefs or willingness to engage in risky sexual behaviors, resulting in less recognition of need for planning and consideration (Gerrard, Gibbons, Houlihan, Stock, & Pomery, 2008). Yet at the same time, and contrary to the perception that adolescents have low levels of risk perception, adolescents often perceive their risk to be higher than it actually is for several adverse health outcomes, including HIV and sexually transmitted diseases (Millstein & Halpern-Felsher, 2002).

Despite respondents' emphasis on adolescent cognitive and brain development, the strategies employed to address varying developmental levels primarily focused on modifying the complexity of the presented information to meet the needs of those who are perceived to be less ready to learn about aspects of sexuality. The limited strategies to address adolescent cognitive and brain development, and the lack of strategies to address any other domains of development may, in part, be a reflection of the restricted way adolescent development is currently understood.

Accommodating developmental diversity

Respondents focused on developmental diversity, a characteristic of adolescence that is well documented in the adolescent development literature (Steinberg, 2008). There was a clear understanding across all respondents that at different ages, adolescents have important developmental differences that require distinct educational approaches, particularly in response to cognitive and brain development. Yet, even though respondents recognized developmental diversity among same-age peers, they did not discuss how to adapt teaching strategies to address such diversity. Most strategies seemed to reflect didactic approaches regardless of age. Meschke et al. (2012) highlight the inappropriateness of these approaches, in particular for younger adolescent learning. Additionally, contrary to the adolescent development literature, the topic of developmental asynchrony or intraindividual developmental diversity was largely absent from respondent narratives (Steinberg, 2008) For instance, a common disjunction during adolescence is advanced physical development and immature cognitive development. Literature in this area suggests that individuals with

this type of asynchronous development may be at increased risk for sexual coercion (Downing & Bellis, 2009). The omission of this aspect of developmental diversity could reflect a lack of awareness or a lack of strategies to support it.

The most prevalent explanations provided for interindividual developmental diversity related to culture, socioeconomic status, and school performance (i.e., low vs. high performing schools), appeared to be conflated with race and ethnicity. To these variations, respondents attributed student differences in physical development, learning ability, preferred learning style, and the likelihood of previous exposure to sexuality education. Although respondents reported several strategies to meet diverse developmental needs, most found adequately addressing developmental diversity within a group-level sexuality education program particularly challenging.

The challenge of creating developmentally appropriate approaches in the context of developmental diversity is complex. Respondents' assertions that content that is too advanced for some students are, at worst, wasted but not harmful, reflects the literature in sexuality education. Comprehensive programs that discuss sexual decision making, contraception and safer sex do not cause adolescents to have sex sooner or more frequently than their peers, who do not receive such information (Alford, Huberman, & Hauser, 2003; Kirby et al., 2007; Kohler et al., 2008). The challenges identified by respondents in this study, along with the developmental literature and the findings about the lack of harm to young people who may not be ready for messages in their sexuality education classes, suggests that an important developmental approach would include the repetition of messages at different age levels within curricula with "booster sessions" at different intervals that allow adolescents to hear messages over a range of developmental transitions (Pedlow & Carey, 2004).

Similar to the respondent perspectives, the literature points to the influence of different contexts (e.g., family, peers, school) on adolescent development (Eccles & Roeser, 2009; Steinberg, 2008). Culture, socioeconomic status, and school performance are characteristics of developmental contexts. However, as noted by the educators, modifying these within a sexuality education program is challenging, if not impossible. Nevertheless, exploring more specific and modifiable features of those contexts, such as addressing the school context by implementing teacher training in sexuality and development, may prove more useful in helping to define strategies that address interindividual developmental diversity.

Facilitating the internalization of sexual health messages

Developmental appropriateness was perceived to be crucial in supporting students' to internalize sexuality education messages. This, in turn, was considered important to the goal of motivating adolescent engagement in healthy sexual behaviors and positive trajectories in sexual development. Much of the description of internalization was consistent with the Self Determination Theory (SDT) (Ryan & Deci, 2000), which describes different sources of motivation and their impact on behavior. Individuals who experience self-regulated forms of motivation

(referred to as autonomous motivation) are most likely to engage in a desired behavior and sustain it over time. For example, if an adolescent really enjoys the feeling of running, he or she is more likely to be motivated to engage in physical activity regardless of other factors. In contrast, those who are motivated by less self-regulated forms of motivation such as motivation derived from external incentives (referred to as controlled motivation) tend to be less compliant. For example, an adolescent who receives an allowance for each instance of running, will likely cease exercising in the absence of that benefit (Ryan & Deci, 2000). Autonomously motived activities that are completely self-regulated and carried out simply for their inherent enjoyment are referred to as intrinsically motivating. Many behaviors are not inherently interesting, yet they can still become autonomously motivated. For example, while sexual behavior might be intrinsically motivating for many individuals (i.e., because it feels good, is exciting, etc.), condom use per se might not be. An adolescent who uses condoms consistently because they view this behavior as aligning with a personal goal of postponing pregnancy until a later age, may be experiencing integrated or internalized forms of extrinsic motivation. Internalization of sexual health messages, as described by the respondents in this study and suggested by SDT, may be a critical step in helping students become autonomously motivated to practice healthy behaviors (Ryan & Deci, 2000).

In supporting internalization of sexuality education messages, the educators emphasized the importance of establishing strong rapport with students in order to identify student interest areas and to help them personalize the information. While respondents largely viewed these strategies as being valuable to keeping adolescents engaged in the educational process, according to SDT this student-centered orientation is also critical in supporting the development of autonomous motivation (Reeve, 2002; Williams, 2002).

Implications

The findings of this study have implications for defining developmentally appropriate sexuality education, including content, teaching strategies and educator training. These include:

- *Develop content that integrates the multiple domains of development*. As such, sexuality education programs should seek to address the synergy between interconnected domains of development through establishing goals that reflect the many aspects of sexual development, rather than focusing on sexual behavior exclusively, as is characteristic of abstinence-only and much of abstinence-plus sexuality education. A broader approach to sexuality education, as is characteristic of comprehensive sexuality education, is more likely to reflect such a developmental perspective. This approach, however, can pose challenges for schools due to time and staff training. Therefore, at a minimum, single-issue focused programs should consider developmental characteristics relevant to the topics they choose to cover.

- *Time topic introductions based on current salience, and anticipatory guidance*. Content, including information and skills building, should be based on what is currently salient and relevant for the developmental stage of the intended population as well as what is soon-to-be relevant. Studies on trajectories of sexual development can be used as indicators of topic sequences and approaches; however, conducting assessments of student needs would allow for more precise tailoring of program materials.
- *Introduce sexuality education early and continue throughout adolescence*. The vast majority of sexuality education is targeted to middle and late adolescents, especially high school students. However, the developmental changes in early adolescence make it an important stage for learning. Offering sexuality education during pre and early adolescence, beginning in elementary school, would provide important support during this period of intense change, vulnerability, and high variability between individuals (Igras, Macieira, Murphy, & Lundgren, 2014; National Guidelines Task Force, 2004).
- *Target social, emotional, and experiential influences on decision making*. Though missing from respondent discussions, it was noted that there was a desire to better understand how to address decision making as it relates to sexual behavior. Rather than focusing exclusively on rational decision making for health, programs should seek ways to integrate emotionally relevant experiential learning into sexuality education programs that may better support the development of decision-making skills among adolescents, and more accurately reflect the motivational processes driving sexual behaviors.
- *Include repetition, multiple instructional strategies, and individualization*. Developmental diversity can be addressed by designing and implementing sequential sexuality education programs so that content can be built upon and repeated as necessary to meet different needs within a classroom, as well as ensuring flexibility within curricula to make mid-course adjustments and integrating individualized components (e.g., individual counseling) (National Guidelines Task Force, 2004).
- *Promote choice and autonomous motivation*. Research on adolescent motivation indicates that promoting autonomous motivation can enhance intervention outcomes. The developmental literature offers insight into behaviors, topics, and educational approaches that are intrinsically motivating, as well as potential ways to support the internalization of those that are extrinsically motivating. Changing the paradigm of sexuality education from being risk-focused with controlling messages, to one that offers adolescents choices about sexual decisions and sexual behavior is foundational to utilizing this approach. In addition, educators need to be trained and supported in establishing autonomous motivation supportive environments.
- *Train educators in developmentally appropriate practice*. Educators would benefit from training on adolescent development, including a holistic and developmental perspective on sexuality and developmental factors that influence learning, motivations, and decision making. In light of the relatively low rates of curriculum fidelity, this training would better equip educators to adapt

content to the developmental needs of the youth they are teaching (Barr, Moore, Johnson, Forrest, & Jordan, 2014).

While research focused on the topic of developmentally appropriate sexuality education remains limited, there are accessible educational resources and curricula available that incorporate a focus on the multiple domains of development that interact with sexuality. The National Sexuality Education Standards (NSES), for example, establishes learning objectives by grade across multiple domains of development as they pertain to sexuality education, which can be a useful guide for educators and developers of materials as they select programs or develop new materials (Future of Sex Education Initiative, 2011). In addition, The Rights, Respect, Responsibility (3Rs) curriculum published by Advocates for Youth and FLASH, developed by the Seattle, Washington King County Department of Public Health, are two curricula designed for K–12th grades that are aligned with the NSES.

Limitations

This study was based on a sample of highly experienced individuals working in the field of sexuality education. There was no participation by abstinence-only developers of materials or educators. Consequently, comparisons between respondent categories and approaches to sexuality education were not possible. Although generalizability was not the goal of this study, the themes identified still have theoretical generalizability given the purposeful sampling techniques used to capture a range of perspectives from those working in the field, and given the general consistency across respondent narratives (Maxwell, 2013).

Conclusions

This study is among the first to systematically examine the perspectives of experts in the field of sexuality education regarding the concept of developmentally appropriate sexuality education. Understanding these perspectives is important to help guide policy, programs, and teacher training in this area, together with future research endeavors. It appears that experienced developers of materials and sexuality educators often do consider the general concept of developmental appropriateness in their practice. Further research on educators with lower levels of experience and working in distinct sociopolitical environments would enhance understanding of the training and material needs of these educators. Nevertheless, a more comprehensive and widely shared understanding of the adolescent development literature by these professionals would provide greater clarity and consistency on the meaning of developmental appropriateness and enhance educator skills in using developmentally appropriate teaching strategies.

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