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1. Mojtaba. Vazie : PhD Candidate in Curriculum Planning, Department of Curriculum Planning, Tabriz Branch, Islamic Azad University, Tabriz, Iran
2. Jahangir. Yari : Assistant Professor, Department of Curriculum Planning, Tabriz Branch, Islamic Azad University, Tabriz, Iran (Email: 5198641881@iau.ir)
3. Yousef. Adib : Professor, Department of Curriculum Planning, Faculty of Psychology and Educational Sciences, University of Tabriz, Tabriz, Iran

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Research Synthesis of the Components of a Sexuality Education Curriculum

ABSTRACT

The objective of this study was to synthesize existing research to identify and systematize the core components of a comprehensive sexuality education curriculum within an integrated curriculum framework. This study employed a qualitative research synthesis methodology with an applied, cross-sectional design. The research corpus consisted of peer-reviewed journal articles, master's theses, doctoral dissertations, and scholarly books published between 2015 and 2025 in both domestic and international contexts that addressed sexuality education, sexuality education curricula, or related instructional programs. A total of 60 sources meeting predefined inclusion criteria were selected through systematic database searches. Data were analyzed using qualitative content analysis based on thematic coding. Following open, axial, and selective coding procedures, extracted concepts were organized and synthesized using Akker's ten-element curriculum framework, encompassing rationale, objectives, content, learning activities, teacher role, resources, grouping, place, time, and evaluation. The synthesis identified 100 distinct curriculum components, which were systematically classified into ten interrelated curriculum elements. The results indicate that effective sexuality education curricula are multidimensional systems rather than content-focused interventions. Key inferential patterns suggest that curriculum coherence depends on the alignment of culturally grounded rationales, prevention- and development-oriented objectives, competency-based content, participatory learning activities, well-prepared teachers, diversified resources, flexible grouping strategies, multiple learning environments, developmentally sequenced timing, and multidimensional evaluation mechanisms. Fragmentation or omission of these elements was inferred to weaken curriculum implementation and sustainability. The findings demonstrate that sexuality education should be conceptualized and managed as an integrated curriculum system. The synthesized framework provides evidence-based guidance for curriculum developers, policymakers, and educators seeking to design, implement, and evaluate coherent and contextually responsive sexuality education programs.

Keywords: Synthesis, Curriculum, Sexuality Education.

Introduction

Sexuality education has progressively moved from being treated as a private, family-bound matter to being recognized as a public, educational, and policy-relevant concern that intersects with health, well-being, child protection, social development, and human rights. In contemporary education systems, curriculum planners increasingly face the dual challenge of responding to rapid socio-cultural change—especially in relation to media exposure, online environments, and evolving youth experiences—while also maintaining cultural legitimacy and institutional feasibility. As a result, sexuality education is not

merely a set of health messages; it is a curriculum domain that requires coherent rationale, explicit aims, developmentally appropriate content, implementable pedagogy, trained teachers, adequate resources, and defensible evaluation mechanisms. Scholarship has repeatedly shown that where sexuality education is absent, fragmented, or politically constrained, what emerges is not neutrality but “un-education”: curricular silence, avoidance, and inconsistent messaging that leaves learners vulnerable to misinformation and harm (1). These realities have generated renewed attention to how sexuality education curricula are conceptualized and implemented across different contexts, including settings where the issue remains socially sensitive, institutionally contested, or unevenly institutionalized.

At the international level, research underscores that sexuality education curriculum reform is frequently propelled by evidence of unmet developmental needs and by concerns over sexual violence, harassment, early risk exposure, and poor access to reliable knowledge. Studies emphasizing the “need of the hour” framing highlight persistent gaps between young people’s lived realities and what schools formally address, particularly in contexts where cultural taboos limit open discussion (2). Similar arguments link the necessity of curriculum and activity implementation to broader educational quality and social welfare, positioning sexuality and gender education as a foundational component of contemporary schooling rather than an optional add-on (3). The issue is equally visible in regions where sexuality education is described as neglected or under-prioritized, despite the persistence of related social and health challenges (4). Complementing such needs-based arguments, curriculum reform discussions have also focused on systemic design and coherence, noting that sexuality education requires integration with broader curriculum architecture to be sustainable and pedagogically meaningful (5, 6).

A central management and governance issue in curriculum design is that the effectiveness of sexuality education depends not only on “what” is prescribed but also on “how” it is implemented in real classrooms. Implementation studies in low- and middle-income contexts demonstrate that national curricula can be undermined by classroom-level constraints such as limited teacher preparation, inconsistent materials, and contextual barriers that shape what teachers actually deliver (7). Parent and community perceptions likewise influence the acceptability and uptake of sexuality education, with evidence showing that parental attitudes can range from supportive to skeptical, thereby affecting the social license schools require to implement sexuality education consistently and openly (8, 9). These dynamics reinforce the proposition that sexuality education is a managerial challenge that spans policy articulation, stakeholder alignment, implementation capacity, and monitoring and evaluation.

Teacher readiness is repeatedly identified as a decisive lever in closing the gap between curriculum intentions and instructional practice. The literature on teacher education emphasizes that pre-service training organizations and teacher preparation pathways often provide uneven, insufficient, or overly theoretical preparation for delivering comprehensive sexuality education, leaving educators uncertain about content, pedagogy, classroom management, and value-sensitive communication (10, 11). More recent evidence from student-teacher populations highlights that perceived knowledge and attitudes can be variable, and that teacher education must explicitly address both cognitive competencies (knowledge, pedagogical repertoire) and affective competencies (comfort, professional confidence, ethical sensitivity) to enable effective delivery (12). In contexts where teacher training is evaluated as a system, studies have found that program structures and preservice preparedness differ considerably, suggesting the need for more explicit curricular standards within teacher education itself (13-15). Even where sexuality education is formally valued, differences in perceived importance and performance among various teacher groups can create implementation gaps and inconsistent student experiences (16). From a curriculum management viewpoint, this body of evidence signals that teacher training is not peripheral; it is integral to curriculum viability and fidelity.

Another development shaping sexuality education curricula is the diversification of delivery modes and learning environments. Studies documenting the conversion of sexual health curricula into virtual teaching tools show how community partnerships and digital modalities can expand access, adapt pedagogy, and sustain learning continuity—while also requiring careful design to ensure age-appropriateness and safeguarding (17). At the same time, qualitative evidence from secondary schools indicates that curriculum implications extend beyond the formal syllabus to include institutional culture, teacher discretion, and the broader learning ecosystem (18). Empirical evaluations of school-based curricula also demonstrate measurable effects on sexual and reproductive health knowledge and outcomes among students, reinforcing the importance of curriculum quality and implementation fidelity (19). Furthermore, mixed-method studies incorporating survivor perspectives emphasize that sexuality education can serve protective functions, and that curriculum content and pedagogy should be informed by lived experience, trauma sensitivity, and practical prevention-oriented competencies (20, 21). Collectively, these streams suggest that modern sexuality education curricula must be designed as comprehensive systems that account for multiple stakeholders, contexts, and delivery conditions.

In parallel with international scholarship, Iranian studies have increasingly examined sexuality education from policy, curriculum, cultural-religious, and school-practice perspectives. Policy-oriented analyses indicate that sexuality education is often addressed implicitly, indirectly, or in fragmented ways within national educational documents, which complicates systematic implementation and evaluation (22). Early curriculum analyses in Iran focused primarily on objectives and content, underscoring the need for broader attention to additional curriculum elements such as pedagogy, resources, teacher roles, and evaluation mechanisms (23). Other work has emphasized the necessity of preparing teachers and clarifying the role of education systems in sexuality education for younger learners, particularly in primary education where prevention and foundational skills are critical (24). In addition, scholarship has highlighted that sexuality education has often been treated as a “neglected curriculum,” indicating that institutional silence, social sensitivity, and insufficient curricular articulation limit systematic integration in schools (25, 26).

Iranian contributions have also engaged with conceptual and normative foundations, including comparisons of Islam- and West-oriented principles and objectives, and the elaboration of culturally grounded rationales for sexuality education (27). Framework-based curriculum development research has proposed models grounded in Islamic education foundations, aiming to establish coherent curriculum architecture that aligns with cultural values and educational objectives (28). Complementary works rooted in Qur’anic and Hadith perspectives have sought to articulate principles and methods that can inform curriculum design, teacher roles, and ethical boundaries for instruction (29). Such studies demonstrate that in culturally sensitive contexts, curriculum legitimacy is strongly linked to the clarity of rationale and value framework, as well as to the congruence between curricular intentions and societal norms.

Beyond normative discourse, several Iranian studies have examined the curriculum at the level of structure and design. Recent analyses of objectives and curriculum structure in secondary education, including horizontal and vertical organization of content, reflect a movement toward systematic curriculum engineering and coherence, rather than isolated content insertion (30). Design-oriented studies have produced curriculum models for lower secondary education through integrative approaches and grounded theory, offering empirically informed frameworks for organizing sexuality education as a curricular domain (31, 32). Additional research has focused on identifying the position of sexuality education curricula in the educational system, thereby addressing governance questions regarding where the curriculum should “sit,” how it should be institutionalized, and how responsibilities should be distributed across actors (33). Home–school relations have also been emphasized, with work conceptualizing the sexuality education curriculum around the complementary roles of family and school and mapping the components and actors involved in curriculum delivery across these spheres (34, 35). These perspectives are particularly

relevant for curriculum management, because sexuality education frequently requires coordinated responsibility-sharing and consistent messaging across stakeholders.

Implementation and practice-related Iranian studies further illustrate the complexity of translating curriculum ideas into educational realities. Research examining the necessity and position of sexuality education from the perspectives of teachers and specialists signals the importance of practitioner buy-in, feasibility, and local implementation capacity (36). Work on barriers to sexuality education curricula in secondary education highlights constraints such as social sensitivities, institutional reluctance, and operational ambiguity that can disrupt both teaching practice and curriculum continuity (37). Studies examining hidden curriculum components demonstrate that much sexuality-related learning occurs implicitly through school culture, interactions, and informal messages, which may either reinforce or undermine formal curriculum aims (38). Other contributions include practical resources and guides addressing sexuality education for children, offering structured content and developmental guidance for parents and educators—resources that can shape curriculum materials and inform instructional sequencing (39–41). At the level of higher education, analyses have reported sexuality education gaps in university curricula, indicating that the curriculum challenge extends beyond K–12 contexts and includes teacher training and professional preparation environments (42). Even practice-oriented educational pieces and institutional journal materials point to continuing discourse on counseling and school-based supports that intersect with sexuality education needs (43).

In addition to curriculum architecture and implementation concerns, a critical justification for sexuality education is child and adolescent protection. Evidence on program effectiveness for preventing sexual abuse and improving knowledge, attitudes, and assertiveness among vulnerable adolescent populations underscores the potential protective value of structured sexuality education interventions when they are appropriately designed and delivered (44). Systematic reviews of sexuality education programs for children and adolescents further indicate that the program landscape is broad, but often uneven in conceptualization and coverage—suggesting a need for integrative synthesis that identifies core curriculum elements and clarifies what comprehensive curriculum design should include (45). International discussions of sexuality education within school curricula and teacher formation similarly emphasize that curriculum design and teacher training must be aligned, and that sexuality education should be treated as a legitimate curricular field with clearly articulated competencies and implementation support (46).

Within this evolving evidence base, an important methodological and managerial challenge is fragmentation: studies frequently address sexuality education through partial lenses—such as content, objectives, teacher beliefs, barriers, or policy references—rather than articulating an integrated curriculum system. This fragmentation can lead to mismatches between stated goals and operational plans, limited transferability across contexts, and weak evaluability. Curriculum management, therefore, benefits from synthesis approaches that integrate diverse empirical and conceptual contributions into a coherent picture of curriculum components and their interrelationships. International work offering plans and guidance for teachers and students supports the managerial emphasis on clarity, systematic design, and actionable guidance, but also suggests that such plans need grounding in a comprehensive curriculum framework to ensure consistency across contexts (47). Similarly, theoretical modeling efforts—such as Bayesian approaches explaining teacher knowledge of comprehensive sexuality education programs—reflect the increasing sophistication with which curriculum knowledge and implementation readiness can be conceptualized and assessed (48). In early childhood contexts, evidence on teachers' beliefs and practices indicates that sexuality education is shaped by professional norms, developmental assumptions, and institutional constraints, strengthening the case for explicit curriculum components and teacher preparation that address sensitive topics with developmental appropriateness (49). In primary education specifically, arguments for strengthening comprehensive sexuality education in early-grade curricula emphasize the importance of early, preventive, and skill-building sequences that are feasible for schools

and aligned with child development (50). Action research highlighting spiral curriculum organization further offers a curriculum design logic that supports revisiting themes at increasing levels of complexity, aligning with developmental progression and learning needs (51). Alongside these contributions, critiques of curriculum politics and reform processes remind scholars and decision-makers that sexuality education curricula are embedded in power relations, moral debates, and policy dynamics that shape what becomes possible in practice (1).

Accordingly, the present study is positioned at the intersection of curriculum management, educational policy, and evidence synthesis. By drawing on domestic and international scholarship spanning 2015–2025, it addresses the need for a comprehensive map of sexuality education curriculum elements that can inform curriculum design, teacher training, resource development, and evaluation planning. Rather than limiting attention to a narrow subset of curriculum issues, the study adopts a systems-oriented curriculum perspective to identify the key elements and themes that recur across research and practice in multiple contexts, including culturally grounded approaches and school-based implementation realities (7, 27, 34). Such synthesis is particularly valuable for decision-makers and curriculum developers who must translate competing expectations—health promotion, protection, cultural legitimacy, pedagogical feasibility, and stakeholder acceptance—into a coherent curriculum structure. The aim of this study was to synthesize the research-based components of the sexuality education curriculum and to classify the extracted themes within a comprehensive curriculum elements framework to support coherent curriculum design and implementation.

Methods and Materials

The present study is qualitative in terms of research methodology, applied in terms of research purpose, and cross-sectional in terms of time horizon. In terms of strategy, it employs a research synthesis approach. Research synthesis is a specific form of research review that is neither merely descriptive nor purely evaluative; rather, it is integrative and refers to the construction of a coherent whole that goes beyond the implications of individual components. The aim of research synthesis is to generate new knowledge by clarifying relationships among studies that have not previously been recognized. In the present study, in order to ensure inclusiveness, all credible written sources relevant to the research topic were examined. Accordingly, the research population consisted of all peer-reviewed scientific articles, master's theses, doctoral dissertations, and published books produced domestically between 2015 and 2025 and internationally between 2015 and 2025 that addressed sexuality education curricula. The selection of this time period was based on the observation that, over the past decade, most studies have primarily focused on identifying the status of sexuality education content in specific courses, while other curriculum elements have received limited attention. Moreover, many existing studies have predominantly emphasized curriculum objectives, content, teaching methods, and assessment and evaluation. Therefore, the present study seeks to explicate all ten elements of the sexuality education curriculum and, based on predefined criteria, examined 60 studies as the research sample. For analyzing the curriculum elements, qualitative content analysis using thematic analysis was employed.

Findings and Results

For the research synthesis method, various stages and processes have been proposed. However, in the present study, the approach introduced by Roberts was adopted, and the following six steps were implemented:

1. **Identification of need, implementation, and preliminary search:** Given that diverse studies have yielded multiple outcomes from different perspectives, it is necessary first to explicate the elements of the sexuality education curriculum based on existing studies and accumulated experiences in this field. Therefore, designing a framework to clarify all elements of the sexuality education curriculum is essential.

2. **Conducting the research for information retrieval:** As the foundation of the study is the design of a sexuality education curriculum and its constituent elements, existing research on curricula and their components was reviewed and analyzed. Accordingly, all credible scientific studies—including books, master’s theses, doctoral dissertations, and peer-reviewed journal articles—were initially identified through keyword searches related to sexuality education curriculum using reputable domestic and international databases.
3. **Selection, screening, and organization of studies:** This stage was devoted to evaluating studies relevant to the identified knowledge needs. The main inclusion criteria for the study were as follows:
 - Articles, theses, dissertations, and published books in the field of sexuality education produced between 2015 and 2025.
 - Based on the searches conducted, a total of 60 domestic and international sources meeting the inclusion criteria were identified.
 - For the final analysis, the studies listed in Tables 1 and 2 were utilized.

Table 1. Selected Domestic Information Sources

Code	Researcher(s)	Year	Title
1	Zahra Heydari et al.	2024	Analysis of the objectives and structure of the sexuality education curriculum in Iranian secondary education with emphasis on horizontal and vertical content organization
2	Najibeh Khatoon Karami	2024	Foundations, principles, and objectives of sexuality education in Islam and the West
3	Zohreh Qalavand	2022	Designing a sexuality education curriculum model for lower secondary education: A model derived from grounded theory
4	Zahra Hejazi et al.	2022	Conceptualizing the sexuality education curriculum with emphasis on the family–school role
5	Hamid Khanipour et al.	2021	Sexuality education for children and adolescents: A systematic review
6	Ali Mohammad Tamehri	2021	Examining the necessity and status of sexuality education in the secondary school curriculum from teachers’ and experts’ perspectives in Yazd
7	Zahra Hejazi et al.	2021	Research synthesis of components and actors of the home–school sexuality education curriculum
8	Zohreh Qalavand	2020	Designing and validating an integrated sexuality education curriculum model for lower secondary education
9	Afshari et al.	2020	Sexuality education in the Fundamental Transformation Document of Education and the National Curriculum of the Islamic Republic of Iran
10	Mojtaba Vazie	2020	<i>Sexuality Education Curriculum for Primary School Students</i>
11	Parvin Samadi & Zohreh Qalavand	2020	Research synthesis of sexuality education curriculum elements in general education
12	Zohreh Qalavand et al.	2020	Identifying the position of the sexuality education curriculum in the educational system
13	Zeynab Aramesh	2020	Effectiveness of a sexuality education program in preventing sexual abuse (sexual knowledge and attitudes) and assertiveness among adolescent girls in welfare centers
14	Faran Hassami	2019	<i>Sexuality Education for Children: From Birth to Nine Years—A Guide for Parents and Educators</i>
15	Sohrab Mohammadi Pouya et al.	2019	A phenomenological study of barriers to the sexuality education curriculum at the secondary level
16	Ali Naghi Faghihi	2019	<i>Sexuality Education (Foundations, Principles, Methods)</i>
17	Soheila Gholami & Kobra Ahmadvand	2018	Examining the necessity of attention to sexuality education in the secondary school curriculum
18	Zahra Goudarzi	2018	Examining the role of hidden curriculum components in sexuality education for lower secondary female students in Borujerd
19	Abbas Gholtash et al.	2018	Designing a sexuality education curriculum framework based on Islamic educational foundations
20	Reza Mohammadbeigi et al.	2018	Examining the primary school sexuality education curriculum based on teachers’ views and proposing optimal solutions from experts’ perspectives
21	Parvin Samadi & Mahdieh Khosravi	2018	Sexuality education from principals’, parents’, and teachers’ perspectives: A neglected curriculum
22	Reza Mohammadbeigi et al.	2018	Examining the primary school sexuality education curriculum based on teachers’ views and proposing optimal solutions from experts’ perspectives
23	Reza Mohammadbeigi et al.	2017	Designing an optimal sexuality education curriculum model for primary education
24	Mobina Gharba	2017	<i>Sexuality Education</i>
25	Regina Finke	2017	<i>Sexuality Education for Children (Understanding Stages of Sexual Development)</i>
26	Crystal DeFreitas	2017	<i>Keys to Teaching and Caring for Sexual Health</i>

27	Hassan Eslamiian et al.	2015	A review of the sexuality education curriculum in the educational system with emphasis on objectives and content
28	Hossein Kadhoda et al.	2015	Examining the role of education and the necessity of teacher preparation in sexuality education for primary school children
29	Zahra Rasouli	2015	Examining and identifying gaps in sexuality education within university curricula from students' perspectives

Table 2. Selected International Information Sources

Code	Researcher(s)	Year	Title
30	Margot Quinn	2025	Absence of sexuality education: (Neo)conservative lobbying and curriculum reform in Aotearoa
31	Aisling Burke	2025	Preparing to teach relationships and sexuality education: Student-teachers' perceived knowledge and attitudes
32	Hussein Nazia	2024	The necessity of implementing sexuality education curricula and activities in the current educational system
33	Heidi A. Breen et al.	2024	Teacher education organizations and preservice teacher preparation for comprehensive sexuality education in schools: A systematic review
34	Lang Liu	2024	Current status of sexuality education curriculum implementation for students with disabilities in China
35	Alessandro Salas & Julieta Solarzano	2024	A theoretical model explaining sexuality education curriculum knowledge in special teacher education
36	Richard Durwald	2024	Sexuality education: A plan for keeping students and teachers informed
37	Unai Aktunes et al.	2024	A neglected issue in Northern Cyprus: Sexuality education
38	Sudeshika et al.	2024	Sexuality education in India: A contemporary necessity
39	Mohammad Imran Ali	2023	The necessity of implementing sexuality education curricula in primary schools to protect children from sexual abuse in Pakistan
40	Ozge Ozel et al.	2023	Examining primary teachers' beliefs and practices regarding sexual education
41	Shinyeo Kang	2023	Educational curriculum reform: The need for sexuality education
42	Yuji Guo et al.	2023	The effect of a school-based sexuality education curriculum on sexual health among first-year students at Shandong University, China
43	Evan Alsop et al.	2023	Leveraging community partnerships: Transforming sexual health curricula into virtual learning tools for middle school students
44	Judith Atohirwe et al.	2023	Sexuality education in Ugandan secondary schools and its outcomes: A qualitative curriculum evaluation
45	Marius Bitautas & Sigita Daukylas	2023	Training teachers for sexuality education in Lithuania: Evaluation of academic programs and education students' preparedness
46	Paulina Ezer et al.	2022	Changes in teacher sexuality education since the release of the Australian curriculum
47	Shiu Ling Li	2022	Attending to and understanding children's learning needs: Action research with a spiral curriculum for sexuality education in four primary schools
48	Dominic Denning et al.	2022	Experiences of sexuality education and curriculum recommendations from survivors of sexual violence: A mixed-methods study
49	Safa Rashid Mahmoud et al.	2021	Parents' attitudes toward the importance of sexuality education for their children
50	Gu Ling Feng & Liu Wenli	2021	Analysis of curriculum standards and teaching materials for compulsory and comprehensive sexuality education in China
51	Tongavel Venkatasamy & Jenny Kynner	2020	Strengthening comprehensive sexuality education in primary-level curricula
52	Sarah C. et al.	2020	Implementing national sexuality education curricula in classrooms across four low- and middle-income countries
53	Haja I. Kamara	2020	Developing a comprehensive sexuality education curriculum for an independent private day school for pre-kindergarten to grade eight
54	Alexandra Marshall	2020	Perceptions of school-based sexuality education curricula: Focus group findings with parents and adolescents in a southern state
55	Debbie Ollis & Lyn Harrison	2020	The importance of sexuality education: Preparing new teachers to teach sexual education
56	Gilda Junior et al.	2019	Sexuality education in school curricula and teacher education
57	Paulina Ezer et al.	2018	The second national survey of Australian teachers regarding sexuality education
58	Mohammad Amini et al.	2017	Gaps in sexuality education within university curricula
59	Christophora Megawati Tirtawinata	2016	The importance of early-age sexuality education for preventing sexual abuse
60	J. S. Eon Yi & Hye Sun Jang	2015	Perceived importance and performance of sexuality education among health teachers and general teachers in middle schools: An importance-performance analysis (IPA)

4. **Determining the conceptual framework and aligning it with the analyzed data:** The conceptual framework developed in this study centers on the core concept of sexuality education curriculum elements. These elements were extracted within Akker's ten-element curriculum framework.
5. **Processing, integration, and interpretation:** Based on findings relevant to the study's objective, all concepts were first extracted through open coding. Subsequently, using axial and selective coding, all components were categorized according to shared concepts.

Based on the findings obtained from coding studies related to the research objective, initial open codes were extracted through analysis of the selected studies. Subsequently, as illustrated in Table 3, all derived codes were categorized according to shared concepts.

Table 3. Categorization of Extracted Codes Based on Shared Concepts

Article No(s).	Extracted Codes (Shared Concepts)
2, 9, 21, 40, 15, 38, 41, 50, 51	Hayat Tayyebah (good/pure life); training competent teachers; acceptance of sexuality education as part of life; Islamic-Iranian sexuality education; establishment of a unified sexuality education domain; organizational capacity building and enhancement of teachers' expertise; comprehensive sexuality education (a curriculum-based teaching-learning process focusing on emotional, cognitive, physical, and social dimensions of sexuality to equip learners with knowledge, attitudes, skills, and values for informed sexual decision-making).
2, 4, 35, 39, 44, 42, 1, 5, 6, 30, 31, 18, 22, 27, 47, 48, 57	Prevention of sexual arousal and abuse; recognition of sexual identity; development of healthy social relationships; management of unexpected situations; guidance of sexual instincts toward personal, social, and cultural growth; media management and avoidance of obscene content; provision of up-to-date educational resources; promotion of a healthy society; strengthening faith and moral values (modesty, chastity); sexuality education as a hidden curriculum; teaching sexual and social life skills in primary schools; resistance to uncritical importation of Western sexuality concepts; responsible enjoyment of sexuality; reduction of sexual violence against children; elimination of gender discrimination; teacher familiarity with contemporary sexuality movements (LGBTQ).
1, 45, 8, 7, 13, 15, 53, 47, 51, 49, 31, 32, 39, 38	Life skills; decision-making skills; age-appropriate health and hygiene education; Iranian-Islamic sexuality education packages; assertiveness and self-efficacy skills; scientific resources and content packages addressing children's sexual issues; cyberspace content management and online safety; human and mammalian anatomy; forms of child abuse; stages of human development from birth to age 12; media literacy; refusal skills; body rights, privacy, and safe versus unsafe situations; personal hygiene practices; responding to children's early sexual questions.
1, 3, 7, 4, 8, 17, 19, 40, 36, 34, 45, 59, 53, 57, 47	Online and digital instruction; well-being skills education; rapport-building sessions; active inquiry-based learning; sexuality education skills training for parents; purposeful storytelling; raising awareness of sexual health issues; composition and reflective writing; familiarization with private body parts; use of art and drawing; comprehensive understanding of the need to revise sexuality education content; stress management, self-confidence, and fear control skills; spiral organization of curriculum content; teaching help-seeking and choice-making skills; strengthening individual and social ethics; active questioning.
3, 8, 15, 28, 31, 37, 45, 34, 48, 57	Teacher expertise in sexuality education and creation of a supportive classroom climate; counseling and guidance; effective communication among parents, students, and teachers; identification of barriers and gaps in sexuality education; use of religious teachers and clerics' capacities; presentation of psychological, physical, and sexual developmental stages; neutral presentation of sexual health content; collaboration with local health services; parental sexuality education classes; empathy toward students; teachers' personal experiences motivating sexuality education delivery.
1, 7, 12, 37, 30, 40, 56, 57	The Qur'an and Hadith; textbooks and policy documents; peer-reviewed scientific sources; educational media; social culture; integration of religious and modern sciences; sexuality education booklets for primary teachers; periodic sexuality education seminars; developmental psychology principles; health and physical education; art and technology.
8, 15, 32, 44, 47, 58	Small-group instruction; use of counselors and health professionals for groups with shared experiences; family and community groups guided by schools; peer groups; specialized group sessions involving physicians, psychologists, clerics, and teachers.
3, 8, 41, 43	Classroom; mosques; libraries; home; internet; virtual environments; SHAD (Shaad) educational network platform.
4, 31, 33, 39, 48	Family-based initiation from birth to age 7; earlier initiation with extended instructional time; school-based education from ages 7 to 12; allocation of specific instructional hours (1–6 hours per week).
1, 8, 15, 19, 34, 36, 38, 44, 46, 49, 57, 60	Prevention of social harms; qualitative performance evaluation; enhancement of social and organizational awareness; legislation and policy formulation; teachers' professional development; reduction of student dropout; evaluation of student learning (experienced curriculum); assessment of reductions in high-risk sexual behaviors; enhancement of staff competencies in sexuality education; public sexuality education; self-assessment and self-expression; support for implementing teachers; assessment of students' sexual health.

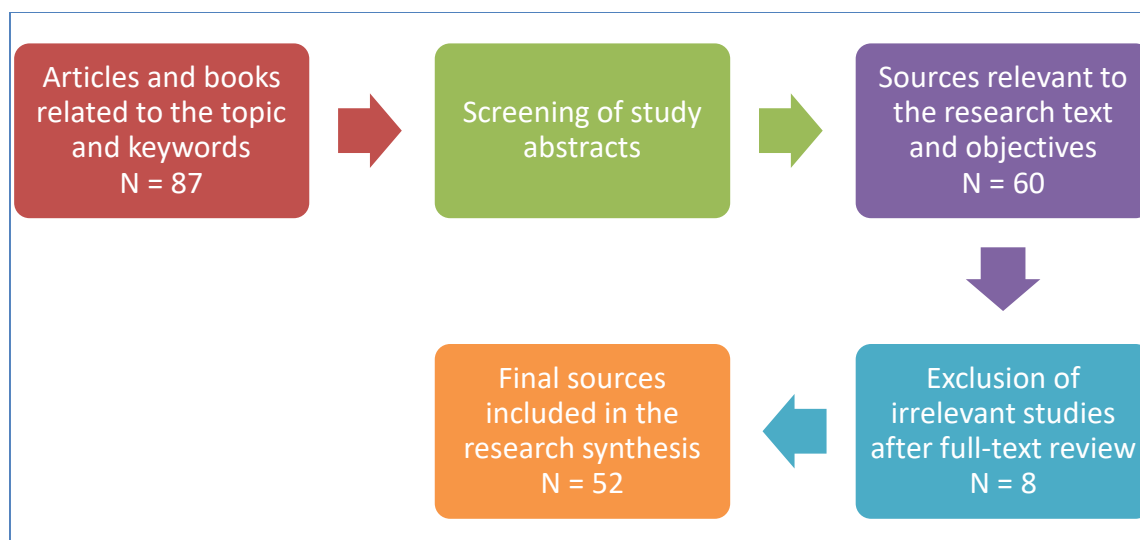


Figure 1. Flowchart of Study Selection

6. **Presentation of synthesis results:** In this section, based on the research synthesis, an overarching view was developed by reviewing the data and coding each sexuality education curriculum component according to John Akker's curriculum framework. The results obtained from selective coding were then consolidated, and the summary characteristics of the ten curriculum components are presented in Table 4.

Table 4. Components of the Sexuality Education Curriculum

No.	Component	Themes Extracted from Coding and Categorization of Shared Concepts
1	Rationale	Hayat Tayyebeh (good/pure life)/competent teachers/sexuality education as part of life/Islamic–Iranian sexuality education/a unified domain of sexuality education/increasing teachers' expertise/comprehensive sexuality education
2	Objectives	Prevention of sexual arousal and sexual abuse/sexual identity/healthy social relationships/management of unexpected events/channeling sexual instinct/media management/provision of up-to-date resources/healthy society/strengthening faith/sexuality education as a hidden curriculum/sexuality education in all schools/confronting Western concepts of sexuality/enjoyment of sexuality/reduction of sexual violence and discrimination/familiarization with contemporary sexuality movements (LGBTQ)
3	Content	Life skills/decision-making and health skills/assertiveness and self-efficacy skills/content packages on sexual issues/cyberspace content and online safety/human and mammalian anatomy/child abuse/stages of child development/media literacy/refusal skills (saying "no")/body rights, privacy, and safe vs. unsafe situations/body care education/children's early sexuality-related questions
4	Learning Activities	Online and digital instruction/teaching well-being skills/rapport-building sessions/active inquiry/teaching specialized sexuality education skills to parents/purposeful storytelling/raising students' awareness of sexual health issues/composition and reflective writing/familiarizing private body parts/using art and drawing/comprehensive understanding of the need to revise sexuality education content/teaching stress management, self-confidence, and fear control/spiral organization of content/teaching help-seeking and choice-making/teaching active inquiry
5	Teacher's Role	Expertise in sexuality education and creating a supportive climate/counseling, guidance, and mentoring/ability to establish effective communication/identifying barriers and gaps in sexuality education/using the capacity of religious teachers and clerics/presenting stages of psychological, physical, and sexual development/providing sexual health content neutrally/leveraging local health services/holding sexuality education classes for parents/empathizing with students/teachers' personal experiences
6	Resources	The Qur'an and Hadith/school textbooks/upper-level policy documents/peer-reviewed scientific articles and credible sources/educational media/social culture/integration of religious sciences with modern science/teacher-oriented sexuality education booklets for primary teachers/periodic sexuality education seminars/developmental psychology principles/health and physical education/art and technology
7	Grouping	Small multi-person groups/education for student groups with shared sexual experiences/family and social groups/peer groups/specialized group sessions
8	Place	Classroom/mosques/libraries/home/internet/virtual space/SHAD (Shaad) educational network platform
9	Time	Initiation by the family from birth to age 7 (school-entry age)/starting at earlier ages with longer instructional time/school-based education from ages 7 to 12/allocating specific instructional hours
10	Evaluation	Prevention of social harms/qualitative performance evaluation/increasing socio-organizational awareness/legislation and development of clear implementation policies/teachers' professional development/reducing student dropout/student learning evaluation/assessing reductions in high-risk sexual behaviors/enhancing sexuality education competencies/public sexuality education/self-assessment and self-expression/supporting implementing teachers/assessing students' sexual health

Discussion and Conclusion

The findings of the present study provide a comprehensive, system-oriented depiction of sexuality education curriculum components by synthesizing evidence from domestic and international research conducted between 2015 and 2025. The identification and classification of curriculum elements within Akker's ten-component framework indicate that sexuality education is not reducible to content delivery alone; rather, it constitutes an integrated curricular system encompassing rationale, objectives, content, learning activities, teacher roles, resources, grouping, place, time, and evaluation. This holistic configuration is consistent with international arguments that fragmented or partial approaches to sexuality education undermine both effectiveness and sustainability, leading to what has been described as curricular silence or "un-education" rather than meaningful learning (1). The synthesis results therefore reinforce the necessity of treating sexuality education as a formally articulated curriculum domain rather than an implicit or marginal educational topic.

With respect to the rationale component, the findings emphasize sexuality education as an integral part of life, grounded in holistic human development, cultural values, and teacher competence. This result aligns with studies highlighting that curriculum legitimacy is closely tied to culturally coherent rationales and value frameworks, particularly in socially sensitive contexts (27, 29). International research similarly underscores that when sexuality education is framed within broader well-being, citizenship, and life-skills discourses, it gains greater acceptance among stakeholders and stronger institutional footing (3, 5). The emphasis on comprehensive sexuality education within the rationale also resonates with global frameworks advocating attention to emotional, cognitive, physical, and social dimensions of sexuality (47, 50). Thus, the present findings support the view that a clearly articulated rationale functions as a managerial anchor that legitimizes curriculum goals, guides implementation, and aligns stakeholder expectations.

Regarding objectives, the synthesized results reveal a broad spectrum of intended outcomes, including prevention of sexual abuse and violence, development of sexual identity, promotion of healthy social relationships, media literacy, and reduction of discrimination. These objectives correspond closely with empirical studies demonstrating that well-designed school-based sexuality education curricula can positively influence students' sexual and reproductive health knowledge, attitudes, and behaviors (19). The inclusion of objectives related to prevention and protection is strongly supported by evidence showing the effectiveness of structured sexuality education programs in enhancing assertiveness and reducing vulnerability among adolescents, particularly in high-risk or marginalized settings (44, 52). At the same time, objectives addressing faith, values, and cultural identity reflect findings from Iranian and comparative studies that stress the importance of contextual alignment for curriculum acceptance and sustainability (22, 28). Internationally, similar tensions between global discourses and local values have been documented, underscoring the need for curricula that are both rights-informed and culturally responsive (2, 4).

The content component identified in this study encompasses life skills, decision-making, health and hygiene, child development, online safety, media literacy, and body rights. This breadth reflects a shift away from narrow, biologically focused instruction toward competence-based and developmental approaches. Such findings are consistent with systematic reviews indicating that effective sexuality education programs integrate cognitive knowledge with skills such as refusal, self-efficacy, and critical media engagement (45). Action research on spiral curricula further supports organizing content in developmentally sequenced layers, enabling learners to revisit key concepts with increasing depth and complexity (51). Iranian studies focusing on children and early adolescence similarly highlight the importance of age-appropriate content that addresses curiosity, safety, and early questions without inducing fear or misinformation (39, 40). Therefore, the synthesized content elements confirm that comprehensive curricula must balance factual accuracy, developmental appropriateness, and protective intent.

In relation to learning activities, the results point to diverse pedagogical strategies, including digital and online instruction, inquiry-based learning, storytelling, art-based activities, reflective writing, and parent-focused education. These findings align with research demonstrating that participatory and student-centered pedagogies enhance engagement and relevance in sexuality education (17, 18). The incorporation of digital modalities reflects contemporary educational realities and is supported by studies showing that virtual adaptations of sexuality education curricula can expand access when designed with appropriate safeguards (17). Moreover, the emphasis on parental education and involvement corresponds with evidence that home–school collaboration strengthens consistency of messages and improves curriculum effectiveness (8, 34). These results suggest that learning activities function as the operational core of the curriculum, translating abstract objectives into meaningful educational experiences.

The teacher's role emerged as a pivotal component, encompassing subject-matter expertise, counseling skills, empathy, communication capacity, and collaboration with health and religious professionals. This finding strongly corroborates international literature identifying teacher preparedness as a key determinant of curriculum fidelity and effectiveness (10, 11). Studies of pre-service and in-service teachers consistently report variability in perceived knowledge, comfort, and confidence, which can either facilitate or constrain classroom implementation (12, 13). The inclusion of teachers' personal experiences and empathic engagement also resonates with qualitative research emphasizing relational trust and emotional safety as prerequisites for effective sexuality education (20). From a curriculum management perspective, these findings reinforce that investment in teacher development is not ancillary but central to sustainable implementation.

The resources component identified in the synthesis integrates religious texts, policy documents, scientific literature, educational media, and interdisciplinary materials. This reflects a hybrid resource ecology in which formal curricula draw on both normative and empirical sources. Iranian policy analyses demonstrate that ambiguity or fragmentation in official documents can weaken implementation clarity (22), whereas international studies emphasize the importance of coherent, evidence-based materials aligned with curriculum standards (7). The present findings suggest that resource diversity, when systematically curated, can enhance curriculum legitimacy and adaptability rather than dilute coherence.

Findings related to grouping, place, and time underscore the contextual flexibility required for sexuality education. Small-group instruction, peer groups, family-based sessions, and specialized workshops mirror international practices that adapt delivery to developmental stage and sensitivity of topics (9, 49). The inclusion of multiple learning spaces—classrooms, homes, community settings, and virtual platforms—aligns with contemporary views of learning ecosystems rather than bounded classrooms (17). Temporal sequencing from early childhood through adolescence reflects developmental research emphasizing early prevention and continuity (21, 50). These elements collectively highlight that curriculum management must accommodate flexibility while maintaining coherence across settings and stages.

Finally, the evaluation component emphasizes awareness raising, prevention of social harms, professional development, policy support, and assessment of learning and behavioral outcomes. This multifaceted evaluation approach corresponds with international calls for moving beyond narrow outcome measures toward broader indicators of curriculum impact, including organizational learning and teacher capacity (14, 16). Iranian studies on hidden curricula further suggest that evaluation should account for both explicit and implicit learning processes (38). By integrating evaluation into the curriculum framework, the findings support a feedback-oriented management model that informs continuous improvement.

Overall, the discussion indicates that the synthesized curriculum components are strongly supported by existing literature and respond to recurring challenges identified across contexts: fragmentation, implementation gaps, teacher preparedness, and cultural legitimacy. The present study extends prior work by integrating these dimensions into a unified framework that can guide curriculum design, implementation, and evaluation in a coherent manner (48, 53).

Despite its contributions, the present study has several limitations. First, although the synthesis covered a broad temporal and geographical range, it relied on published studies and accessible documents, which may exclude unpublished reports or context-specific practices not captured in the literature. Second, the qualitative synthesis approach emphasizes conceptual integration rather than empirical effect size estimation, limiting the ability to draw causal inferences about curriculum effectiveness. Third, the interpretation of extracted components may be influenced by the researchers' analytical framework, despite efforts to ensure systematic coding and transparency.

Future research could complement the present synthesis with quantitative meta-analyses examining the relative effectiveness of specific curriculum components across contexts. Longitudinal studies investigating how integrated curriculum frameworks influence student outcomes, teacher practices, and institutional culture over time would also be valuable. In addition, comparative cross-cultural research could explore how synthesized curriculum elements are adapted in different sociocultural and policy environments, thereby refining context-sensitive implementation models.

For practitioners and policymakers, the findings suggest the importance of adopting a comprehensive curriculum perspective that addresses all core elements rather than focusing narrowly on content. Curriculum developers should prioritize coherence among rationale, objectives, pedagogy, and evaluation, while investing in sustained teacher professional development. Schools and education systems are encouraged to foster collaboration among families, health services, and community institutions to support consistent and contextually appropriate sexuality education delivery.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

All ethical principles were adhered in conducting and writing this article.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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