ARTICLE IN PRESS

Journal of Adolescent Health xxx (2025) 1-9



JOURNAL OF ADOLESCENT HEALTH

www.jahonline.org

Review article

A Scoping Review of Sexual and Reproductive Health Interventions With Youth in U.S. Juvenile Facilities

April D. McNeill-Johnson, M.D.^{a,b}, Jason Glenn, Ph.D.^c, Nekia Ivory Daniel, M.P.H.^d, Mira Menon^d, Basil H. Aboul-Enein, Ed.D., M.Sc., M.P.H., M.A.^{e,f,*}, Patricia J. Kelly, Ph.D., M.P.H., A.P.R.N.^g, and Megha Ramaswamy, Ph.D., M.P.H.^d

^a Children's Mercy Hospital-Kansas City, Pediatric Emergency Medicine, Kansas City, Missouri

^b University of Missouri-Kansas City, School of Medicine, Kansas City, Missouri

e Health & Society Program, College of Arts & Sciences, University of Massachusetts Dartmouth, North Dartmouth, Massachusetts

^fLondon School of Hygiene & Tropical Medicine, Faculty of Public Health and Policy, London, United Kingdom

^g College of Nursing, Thomas Jefferson University, Philadelphia, Pennsylvania

Article history: Received October 4, 2024; Accepted December 10, 2024 *Keywords:* Juvenile detention; Sexual reproductive health; Interventions; At-risk youth

ABSTRACT

Youth placed in U.S. juvenile detention facilities face multilevel barriers that contribute to disparate sexual and reproductive health (SRH) outcomes when compared to their peers in the general adolescent population. Minimal information is available about evidence-based interventions that have been effective in changing these outcomes. The aim of this scoping review was to focus on the current state of SRH and identify recommendations for SRH care. Using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses for scoping reviews guidelines, we searched electronic databases for publications published through March 2024. The search terms were designed to find intervention studies focusing on SRH in U.S. juvenile detention facilities. Eighteen articles were identified, all of which found some combination of positive results. While some intervention content focused on SRH knowledge and attitudes, the majority of studies had sexual risk behaviors in combination with sexually transmitted infections, substance use, or partner violence as their focus. The minimal number of research interventions focused on the structurally vulnerable population of youth in detention facilities across the United States underscores a significant gap in the existing literature, with negative health outcomes for juveniles in detention facilities.

© 2024 Society for Adolescent Health and Medicine. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

IMPLICATIONS AND CONTRIBUTION

This review examines the literature on sexual and reproductive health (SRH) care for youth in juvenile detention and identifies recommendations and challenges for future work. Findings can be used to inform policy development, intervention strategies, and work toward improved SRH health outcomes and their right to adequate SRH care access.

Conflicts of interest: The authors declare that there is no conflict of interest. Ethical Approval: Given the nature of this review, no ethical oversight was found to be necessary and, therefore, no institutional review board was acquired.

Youth placed in U.S. juvenile detention facilities (JDFs) face multilevel barriers that contribute to disparate sexual and reproductive health (SRH) outcomes when compared to their peers in the general adolescent population [1,2]. Adolescents in JDFs experience disproportionally higher sexually transmitted infections (STIs) rates of gonorrhea and chlamydia 5–7 times higher rates than their nonincarcerated counterparts [3]. Additionally, 15% of adolescent males in detention are parents, a stark

1054-139X/© 2024 Society for Adolescent Health and Medicine. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (http:// creativecommons.org/licenses/by-nc-nd/4.0/).

https://doi.org/10.1016/j.jadohealth.2024.12.012

^c Department of History and Philosophy of Medicine, University of Kansas Medical Center, Kansas City, Kansas

^d Department of Health Systems and Population Health, School of Public Health, University of Washington, Seattle, Washington

^{*} Address correspondence to: Basil H. Aboul-Enein, Ed.D., M.Sc., M.P.H., M.A., University of Massachusetts Dartmouth, College of Arts & Sciences, Health & Society Program, 285 Old Westport Road, North Dartmouth, MA 02747; London School of Hygiene & Tropical Medicine, Faculty of Public Health and Policy, 15-17 Tavistock Place, London WC1H 95H, United Kingdom.

E-mail addresses: baboulenein@umassd.edu; Basil.Aboul-Enein@lshtm.ac.uk (B.H. Aboul-Enein).

ARTICLE IN PRESS

contrast to the 2% of adolescent males in the general population. Among females in detention, 1 in 3 have been pregnant [4,5]. In a recent study among U.S. juvenile residential systems, 38% of pregnancies that were diagnosed while in custody resulted in abortion and 50% ended in miscarriage [6]. Detained adolescents also report higher rates of sexual activity, more lifetime partners, and lower use of condoms [3].

At a minimum, youth should undergo a health screening exam upon intake at detention centers. However, health standards for detention centers significantly vary by state, and evidence-based SRH care in this setting can be limited. While the National Commission on Correctional Health Care provides minimum standards for health care in JDFs, compliance is voluntary, and knowledge about facilities that adhere to these standards is not widely published [1]. Interestingly, an older study (2007) conveyed that less than 1% of JDFs complied with national care guidelines, including recommended SRH screenings, with services predominantly offered on an ad hoc basis [7]. A more recent study (2020) reaffirmed that JDFs provided STI testing, treatment, and gynecological services sporadically for only limited portions of the detained population [5]. Despite the issuance of policy statements by national medical associations, such as the American College of Obstetricians and Gynecologists, the American Academy of Pediatrics, and the Society for Adolescent Health and Medicine regarding health services in carceral facilities [8-10], there remains a notable absence of specific clinical guidelines tailored to address the SRH care needs of youth in detention. With only a limited number of JDFs implementing universal screening and treatment protocols for SRH care, detained youth are exposed to preventable morbidity linked to STIs, contraception, and pregnancy care. This underscores the urgent need to comprehensively understand the state of SRH within JDFs to implement targeted interventions and policy reforms aimed at ensuring equitable access to SRH care.

There is an increasing recognition of the healthcare challenges faced by youth in detention and a growing interest in addressing their unique needs. However, societal stigma surrounding juvenile justice involvement and systemic challenges in providing healthcare within detention settings have resulted in limited attention to this population. Consequently, a significant gap exists in our understanding of the prevalence, risk factors, and interventions related to SRH in JDFs. Therefore, this scoping review examined the existing literature on SRH interventions for youth in juvenile detention, aiming to identify recommendations and challenges in the provision of effective interventions. The findings can be used to inform further research, policy development, and intervention strategies, ultimately working toward improved SRH health outcomes for youth in detention and ensuring their right to comprehensive and equitable healthcare access.

Methods

The Population, Intervention, Comparison, Outcomes, and Study formatting was utilized to develop inclusion and exclusion criteria for this review (see Table 1). The search was conducted in early 2024, and databases were searched for any relevant publications up to and including March 2024. For this scoping review, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses for scoping reviews guidelines were utilized [11]. Twenty databases were used for this search (see Table 2).

Table 1

Inclusion and exclusion criteria

	Inclusion	Exclusion
Date range	Up to and including March 31st, 2024	-
Research design	Intervention studies, RCTs, quasiexperimental	Noninterventional studies, commentaries, narratives, protocols, editorial communications, opinion pieces, conference papers, white papers, theses, dissertations, government reports, and guidance documents.
Sources	Peer reviewed empirical evidence	Grey literature
Languages	English	Other languages
Population	Incarcerated male/female juvenile/adolescent population 18 years or younger within the United States	Incarcerated male/female juvenile/adolescent population 19 years or older. Outside the United States
Focus of study	Interventions focusing on SRH care within juvenile detention facilities	SRH interventions outside the juvenile detention facility settings.

RCT = randomized clinical trial; SRH = sexual and reproductive health.

The search strategy was adapted in accordance with the indexing systems of each respective database. The search terms involved used a combination of strategies, Medical Subject Headings keywords, phrases, and Boolean operators (see Table 2). B.H.A-E screened titles and abstracts for relevance. B.A.E. worked with Rayyan Qatar Computing Research Institute software to assist in the screening process [12]. Consultation with an independent reviewer resolved any potential disagreements to reach consensus. P.J.K., J.G., M.R., N.I.D., M.M., and A.D.M-J made the

Table 2

Electronic databases used with relevant search pe	eriod and	terms
---	-----------	-------

Databases	Search period	MeSH keywords, terms, phrases, and boolean operators
PubMed; MEDLINE; Embase; BioMed Central; ScienceDirect; ArticleFirst; Biomed Central; BioOne; BIOSIS; CINAHL; EBSCOHost; JSTOR; ProQuest; PubMed; SAGE Reference Online; ScienceDirect; Scopus; SpringerLink; Taylor & Francis; and Wiley Online	Up to and including March 31st 2024	Sexual Health [MeSH] OR Reproductive health [MeSH] OR Reproductive Health Services [MeSH] OR SRH AND prison [MeSH] or justice system OR jail [MeSH] OR Correctional Facility [MeSH] OR Detention center or Criminal system [MeSH] AND Youth OR "adolescent [MeSH] OR young [MeSH] OR teen [MeSH] OR juvenile [MeSH] AND Intervention [MeSH] OR education [MeSH] OR program [MeSH]

MeSH = Medical Subject Headings; SRH = sexual and reproductive health.

final decisions about inclusion and documented reasons for exclusion. Figure 1 provides the Preferred Reporting Items for Systematic Reviews and Meta-Analyses flowchart leading to selected studies for this review. The review explored the characteristics, such as interventions, target audiences, and program outcomes, and tabulated the included studies (see Table 3). Given that methodological quality assessment is not a prerequisite for scoping reviews, appraisal of the included studies was not included [13].

Results

Eighteen articles were identified that met the selection criteria. One was published before 2000 [14], 2 between 2004 and 2009 [15,16], 6 between 2010 and 2011 [17–22], and 7 between 2014 and 2018 [23–29]; only 2 were published between 2023 and 2024 [30,31].

Eleven of the studies used methods of randomized control trials or quasiexperimental designs [15,17–23,26,27,30]. Other designs included a one-group evaluation study [24,31], a quality improvement project [28], a one-group pilot study [16], a teaching program [14], and a prospective cohort study [29]. One study [25] involved identification of challenges in program implementation. While the majority of studies had samples that were predominately males, 5 articles had all-male samples [14,17–20] and 5 all-female samples [15,16,25,26,28].

Almost all of the articles used theoretical frameworks or intervention modalities. Social cognitive theory was used in 3 articles [15,16,24] and combined social cognitive theory with the theory of gender and power. The 3 articles describing the *Returning Educated African-American and Latino Men to Enriched* *Neighborhoods* (REAL MEN) intervention used a harm reduction model combined with social ecological theory [17–19]. Two research teams used a problem-solving approach [14,20]. Other theories were self-regulation [31], the information-motivation-behavioral skills model [21], the theory of reproductive health literacy [29], and the theory of planned behavior together with motivational enhancement therapy [23]. Two research teams [25,26] used the *Assess, Decision, Administration, Production, Topic experts, Integration, Training, and Testing* model to specify the *Informed, Motivated, Aware, and Responsible about AIDS* (Imara) intervention for girls in JDFs. While not a theory, per se, motivational interviewing was the basis of one quality improvement project [28].

In addition to SRH, content of the interventions included substance use [21,23,30], partner violence [15,16], substance use and relationships [27], substance use and school/work outcomes [17–19], and decision-making strategies around sexual behaviors [22,31]. Several author teams focused on gender-specific education with males [14,17–19] and females [15,16]. Ethnic pride was included in the work of 4 articles [17–19,25], while correctional staff were the focus of one article [28].

Of the 18 articles reviewed, 7 [14,15,18,19,23,26,27] included follow-up assessments of youth after they left detention. The follow-up methods varied as follows: most conducted interviews either by phone [18,19], in-person [18,19], or via video [26], while some did not specify the method [14,27]. Two studies included in-person questionnaires [15,23], one conducted a skills assessment on condom use [26], and 3 conducted STI testing at follow-up [15,23,26].

Outcomes reported were improvements in knowledge and attitudes about contraception [24], contraception and partner

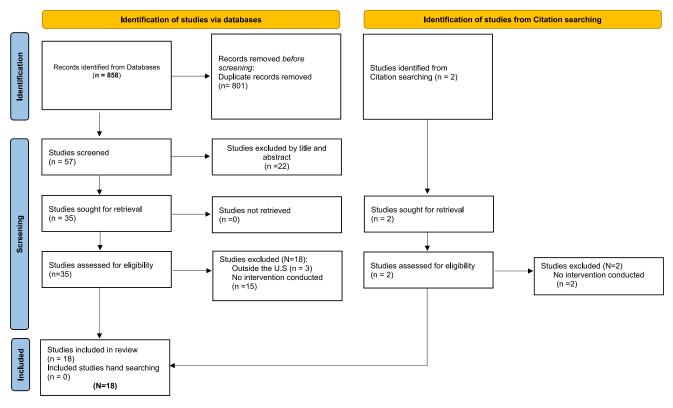


Figure 1. Flow diagram.

Table	3

Summary of findings (N = 18)

Author (year) Country	Population/Sample size/Age	Study type/Design	Details of intervention	Theory/Model	Measured parameters	Main results	Main recommendations
Bryan et al. (2018)	460 adolescents (73.4% male), aged 14–18 living at a detention facility	4-year cluster RCT with 3 conditions: sexual risk-reduction plus alcohol and cannabis content, STI with alcohol content only, and STI only	Sexual risk reduction intervention of 145 intervention groups with 6 participants each, 2 weeks before participants' release from detention	Theory of planned behavior, motivational enhancement therapy	STI incidence, sexual history/ risk behaviors, substance use, psychosocial factors	Participants in the comprehensive content program had lower STI incidence at 12 months	Behavioral interventions to reduce STIs among justice-involved adolescents should include alcohol and cannabis content as substance use plays a key role in sexual risk reduction for this population
Combs et al. (2019)	803 youth (90.6% male), aged 11–19 involved in JJS	Evaluation study, one- group prepost	Making Proud Choices! and Be Proud! Be Responsible! = 8 one-hour sessions on knowledge, attitudes, skills related to sexual health and HIV/STI prevention with youth in foster care or JJS.	Evidence based/social cognitive theory	Sexual education knowledge, attitudes toward condom use/ birth control	Females and sexually active youth had more improved attitudes toward birth control compared to males and those not sexually active	Implement curriculum from Making Proud Choices and Be Proud.
Davis et al. (2016)	333 African American females, aged 13–17 in JJS centers in Georgia	Identify lessons learned from implementing CDC curriculum	Imara, an adapted version of HORON = 4 1-hour sessions of HIV/STI prevention program on gender/ethnic pride, HIV/STI knowledge, healthy relationships, condom skills, behavior change strategies, STI treatment	Theory of gender and power and Social cognitive theory	Intervention delivery	Lessons learned included changing to one- on-one format, adding phone calls between sessions, hiring a nurses for STI treatment, developing individual risk assessments	Intervention structure should be flexible, with content tailored to address individual risk factors
DiClemente, et al. (2014)	188 African- American females, aged 13–17 in JJS	11-month two-arm RCT	Imara intervention = 3 individual counseling intervention sessions, 4 phone counseling sessions occurred post-release.	ADAPT-ITT model	Incident STIs, condom use, number of sexual partners	Intervention group had higher condom use self- efficacy, condom use skills compared to control group; no differences in STIs, condom use, or number of sex partners	Recommend intensifying intervention content, using more comprehensive models to address the complex determinants of HIV/STI risk
Donenberg et al. (2018)	310 youth (66% male), aged 13–17 involved in the JJS	2-arm group RCT	PHAT Life (Preventing HIV/AIDS Among Teens) = 8 session sex ed program focusing on knowledge, attitudes and beliefs about HIV/AIDS and substance use, emotion regulation, peer influence, and partner relationships		Condom use, number of sexual partners, composite sexual risk score, high risk behaviors	Intervention group had lower sexual risk behaviors- (increased condom use, fewer partners)	Increase the availability of use of PHAT Life, with focus on specific high- risk groups; create strategies to improve retention rates in intervention programs.

A.D. McNeill-Johnson et al. / Journal of Adolescent Health xxx (2025) 1–9

Table 3 Continued

Author (year) Country	Population/Sample size/Age	Study type/Design	Details of intervention	Theory/Model	Measured parameters	Main results	Main recommendations
Fix et al. (2024)	218 adolescents (67.9% male) aged 12–18 on probation	RCT	JPO-administered substance use intervention, used contingency management (CM) incentives and rewards to reinforce goal behaviors, targeting substance use problems and risky sexual behaviors		Risky sexual behavior, substance use delinquency internalizing problems	CM group had significantly lower rates of risky sexual behavior at 6- and 9-month follow-up	Future work should refine intervention strategies, focus on relationship between substance use and risky sexual behaviors; develop tailored intervention for youth involved with incarceration
Freudenberget. al (2010) Ramaswamy et al. (2010) Daniels, et al. (2011)	552 adolescent males, aged 16–18 incarcerated in New York City jails	RCT	REAL MEN (Returning Educated African-American and Latino Men to Enriched Neighborhoods) = 30 hours with 5 group sessions and community-based services after release; participants were randomly assigned to either receive the 30-hour REAL MEN intervention that began in jail and continued after release, or just a jail- based discharge planning session	Harm reduction, ecological approach to health promotion	Drug use, risky sexual behavior, criminal justice involvement, and school/work involvement post release	Participants more likely to have less drug use, sexual risk behaviors, fewer days in jail, more likely to find employment, attend school	Jails/community providers should partner to deliver multicomponent interventions that span incarceration and re- entry periods; networks of support should be considered when designing interventions for young males in JJS; initiatives should tackle more significant structural and policy impediments like joblessness and unstable housing, as they affect prosperity of these young men; future interventions should align with goals identified by young men rather than adults, and increased acknowledgment of gender and race as sources of pride and strength
Grubb et al. (2018)	120 and 186 charts of detained females, aged 11–17, before and after intervention	6-month quality improvement project	Educated all staff to offer contraception counseling and contraception to all detained young women	Motivational interviewing	Number counseled on contraception, starting contraception, contraceptive utilization	Proportion counseled about contraception increased from 10% to 84%, contraceptive use from 14% to 69%	It is feasible for health care providers to include contraception services for all intake assessment at all JJS facilities; recommend incorporation of standardized contraceptive counseling and access into medical services at JJS centers, and reduction in logistical and financial barriers to offering reproductive care (continued on next page)

A.D. McNeill-Johnson et al. / Journal of Adolescent Health xxx (2025) 1–9

Table 3 Continued

Author (year) Country	Population/Sample size/Age	Study type/Design	Details of intervention	Theory/Model	Measured parameters	Main results	Main recommendations
Kelly et al. (2004)	53 adolescent women in the JJS	Pilot study	Girl Talk-2 = 8-hour peer-led program addressing sexual risk behaviors and violence prevention with interactive journaling, role-playing, small group discussions	Social cognitive theory	Knowledge and attitudes about HIV/STI risks, self-efficacy, attitudes about condoms use, partner violence	Increased self- efficacy, positive trends in attitudes about condom use, nonacceptance of partner violence	Implement gender specific health education programs, incorporate peer education, and training for detention center staff, incorporate social cognitive theory, and comprehensive
Kelly et al. (2007)	539 adolescent women in the JJS	Cyclical cohort intervention study	Girl Talk-2 = 6-hour peer- facilitated interactive program with journaling, role-playing, demonstrations on sexual health, dating violence, and communication skills	Social cognitive theory	Knowledge about HIV/STDs, attitudes about sex, condom use, partner violence	Improved attitudes about couple violence, increased condom use, enhanced communication skills	sexual health education.
Lauby et al. (2010)	289 adolescent males awaiting final placement in JJS	Nonrandomized concurrent comparison group design	1-year theater-based AIDS education program using small group sessions, 1-hour sessions, 2× week over a 2- week period, education on sexual behavior and general knowledge on HIV	Problem solving therapy	Alcohol use, drug use, sexual behaviors, condom use, accessibility	Participants had greater increases in HIV/condom use, knowledge, attitudes than comparison group	Recommend tailored intervention focusing on substance abuse. need for culturally sensitive and tailored approaches in AIDS education programs
Magura et al. (1994)	157 incarcerated males, aged 16–19 who use drugs	Pre-post convenience sample with comparison group	AIDS education program = 4 1- hour sessions, held twice a week for 2 weeks, with a focus on HIV/AIDS and other health education subjects pertinent to male teenage drug users	Problem-Solving Therapy to address risk reduction and HIV/AIDS education	Alcohol, cannabis cocaine use, sexual practices, number of sex partners	After release, participants more likely to use condoms, have fewer high- risk sex partners	Initiatives in correctional facilities should account for population's unique requirements and risk factors; condom promotion and education imperative, as in not just making condoms widely available but encouraging positive views on their use
Plant et al. (2023)	175 youth (60.5% male), aged 14–19 involved in JJS	Quantitative and qualitative data collection	Learning intervention, e- Practice Self-Regulation = 8- week online learning and in person meetings with goal of using strategies for sexual decision making	Practice of self- regulation	Completion of meetings, ACE scores, program satisfaction	E-practice self- regulation was highly acceptable	Suggest shorter length sessions, incorporating more engaging and interactive data into the e-learning
Robertson et al. (2011)	246 girls, aged 12–17, incarcerated in a state reformatory	RCT	18 session health education program or STD risk reduction program; both included reproductive health, STI/HIV, and substance use education. STI risk reduction also included condom skills and partner involvement	Information- motivation- behavioral skills model	Condom use skills, sexual risk behaviors, STIs incidence	Intervention group had improved condom skills, sexual health knowledge; both groups had less substance use during sex	More intensive and comprehensive interventions are needed addressing interrelated risk factors, of mental health, substance use, and trauma histories; ongoing support sessions after release may be beneficial

A.D. McNeill-Johnson et al. / Journal of Adolescent Health xxx (2025) 1–9

Table 3 Continued

Continued							
Author (year) Country	Population/Sample size/Age	Study type/Design	Details of intervention	Theory/Model	Measured parameters	Main results	Main recommendations
Son et al. (2016)	134 incarcerated youth Prospective cohort (88% males) study	Prospective cohort study	3-day comprehensive reproductive health course, education on reproductive health, condom use and self- efficacy	Reproductive health literacy theory	Reproductive health knowledge, condom use with new partners, self-efficacy in sexual autonomy/ contraception	Incarcerated youth demonstrated increased STI knowledge, confidence in condom use	Use of educational curriculum with incarcerated youth will increase reproductive awareness and improve self-efficacy related to condoms and contraception use
Tolou-Shams et al. (2011)	57 juvenile drug court offenders (90% male), aged 12–18	RC	PATH (Parents And Teens for Health) program = 10 hours affect management HIV prevention program to teach skills for regulating emotions in risky situations, providing information and motivation for safer sex practices		use Sexual risk behaviors, substance use, HIV testing	Both groups had decreased substance use during sexual activity, increased HIV testing	Future interventions should be integrated into other court-mandated programs and services, should include ongoing support sessions
ACE = adverse childhoo juvenile probation offi transmitted infections.	ACE = adverse childhood experiences; ADAPT-ITT = Assess. Decisio juvenile probation officers; RCT = randomized clinical trial; REAL transmitted infections.	-ITT = Assess, Decision, Ac	ACE = adverse childhood experiences; ADAPT-ITT = Assess, Decision, Administration, Production, Topic experts, Integration, Training, and Testing; CM = contingency management; JJS = juvenile justice system; JPO = juvenile probation officers; RCT = randomized clinical trial; REAL MEN = Returning Educated African American and Latino Men to Enriched Neighborhoods; STDs = sexually transmitted diseases; STI = sexually transmitted infections.	rts, Integration, Training, ar rican and Latino Men to E	nd Testing; CM = conting inriched Neighborhoods.	gency management; JJS = ; STDs = sexually transi	= juvenile justice system; JPO = mitted diseases; STI = sexually

violence [15,16], contraception and substance use [20], and general sexual/reproductive health [21,29]. Improvement in reported sexual behaviors, either in the form of condom use or fewer partners, were reported by 3 authors [14,15,27]. Improvements in sexual risk behaviors and substance use, as well as school attendance/employment and days of incarceration were reported [18,19], as well as improvements in STI incidence [23,26]. Three studies collected physical specimens tested for STIs [21,23,26] and treated positive results; one study did pregnancy testing on all participants and offered contraception to those with negative results [28].

The articles with follow-up assessments showed varied success rates. Follow-up outcomes were increased condom use and positive attitudes [14], higher condom use and communication strategies to defuse violence [15], and lower sexual risk behaviors [27]. Two articles [18,19] reported decreased drug dependence with the REAL MEN intervention alone, but reduced risky sexual behavior was observed only when combined with community-based organization services. In contrast, 2 other research groups [23,26] did not find significant improvements in STI incidence or sexual behaviors, though one [26] noted enhancements in condom use skills and psychosocial outcomes.

Discussion

The reality that over the past thirty years only 18 articles were identified that provided education to decrease the documented high rate of SRH behaviors among adolescents in the JDFs in the United States underscores the persistent lack of interest among researchers in prioritizing this critical area of study. However, the fact that all of the 18 studies reported some positive results suggests that these samples of young people represent a study population that would benefit from SRH care.

Lessons learned from these 18 studies suggest that the researchers designing and implementing these SRH interventions in JDFs understood that sexual risk behaviors do not occur alone, but rather are in a broader context of substance abuse, interpersonal violence, school dropout, poor communication skills, and limited knowledge and self-efficacy about condom use and contraceptive access. In this vein, the juvenile probation officers-administered intervention that focused on substance use problems and risky sexual behaviors together [30] saw significant reductions in rates of risky behavior, as did a girls-only education intervention [21]. Similarly, the Preventing HIV/AIDS Among Teens Life intervention [27], which comprehensively incorporated increasing knowledge, improving attitudes, the impact of substance use, emotion regulation, managing peer influences, and skills for developing healthy partner relationships demonstrated how to achieve fewer sexually risky behaviors and increased condom use. Two articles that focused on the role of interpersonal violence and sexual risk behaviors also had positive results [15,16]. Studies that made use of interprofessional students [29] and peers [15] as interventionists demonstrated positive outcomes.

Since comprehensive sex education addresses gender and power, SRH interventions, which tailor content by gender, can improve outcomes among target populations [32]. In this vein, a number of studies that targeted males or females support the efficacy of this approach. The REAL MEN intervention [17–19] focused on males who had results that went beyond sexual risk behaviors and produced lower drug use, lower recidivism, and a

A.D. McNeill-Johnson et al. / Journal of Adolescent Health xxx (2025) 1-9

7

greater likelihood to find employment and/or attend school post incarceration. The theater-based education program [20] tailored specifically for males showed similar efficacy, increasing condom use, knowledge, and improving attitudes regarding SRH, as did the girls' SRH education program [21].

Similarly, both the Girl Talk intervention [16] and the Centers for Disease Control's Imara curriculum [25,26], implemented with African American females, demonstrated higher condom use selfefficacy and better condom use skills compared to the control group, but also showed that interventions need to be flexible with content tailored to address individual risk behaviors. The Girl Talk-2 study [15] also showed how gender-specific peer facilitation can improve attitudes, self-efficacy, condom use, and partner communication skills. The Imara study [26] suggests that while individual counseling sessions using the Centers for Disease Control's curriculum may help increase knowledge, future iterations of this intervention need to be coupled with behavioral therapies to actually help improve implementation of newly acquired knowledge. This conclusion was also reported by results of the 3-day comprehensive reproductive health initiative, which increased the knowledge of STIs and confidence in condom use [29].

Of note is that adolescents in 8 of these studies [15,16,21,24–26,28,29] lived in states in which abstinence-only teaching passed for sex education [33], which provided them with very limited baseline knowledge about safer sexual behaviors, accessing contraception, or protecting themselves in relationships. Adolescents with behavioral challenges that result in involvement in the incarceration system should not have to rely on this system to provide them with SRH education and care.

A variety of challenges exist for researchers who wish to implement SRH interventions in JDFs. In addition to cost, researchers must gain access with both correctional facility administration and health staff. All research staff must generally be vetted with criminal background checks. Scheduling intervention time can be difficult because detained adolescents have multiple constraints on their time, including school, meetings with family and with lawyers, and recreation availability. While multisession interventions may be preferable to trying to get all information into one available time slot, frequent detainee turnover can result in a smaller sample size available for exposure to a complete program and prepost assessments. Many JDFs will not have the ability to do actual STI testing, so specimens must be transported to outside laboratories. A final challenge is the assessment of long-term changes resulting from intervention exposure with a sample that is no longer in a JDF. Tracking these adolescents for follow-up data collection can be difficult, necessitating a research staff with considerable youth and street experience as well as willingness to work outside of traditional 8-5 office hours to seek out study participants [34].

A shortcoming of the majority of the intervention studies was their focus on the individual level, taking advantage of the opportunity to intervene with a group of high-risk adolescents during their time inside JDFs. Educating carceral staff to deliver interventions, as was done by both the REAL MEN intervention and the contraceptive quality improvement project [28], can yield substantive improvements in future healthy behaviors. However, as 2 studies [25,26] remind us, multi-modality interventions are important—one size does not fit all. Since these adolescents return to their families and communities, work that bridged this transition and included these levels of behavioral influence would maximize intervention efficacy. Other limitations of the present study are that relevant studies may have been missed since the literature search did not include gray literature or work not published in English. A gap in the literature is that the studies are limited to one or a few facilities, with no comprehensive policy-related assessment available, such as the impact of state or national rules or regulations. However, the major gap on SRH research in JDFs is that there is so little of it available for new researchers to replicate or to build upon.

Conclusion

Despite the alarming prevalence of STIs and unplanned pregnancies within this population, this scoping review revealed a limited number of studies and an inconsistent application of evidence-based interventions that address this disparity, highlighting an urgent need for improved SRH and tailored educational programs. The limited research-based literature available about SRH in the JDF, both on an individual facility and on a policy level, provides an important topic area for future researchers. Addressing the paucity of targeted educational interventions highlights the need to develop comprehensive SRH interventions tailored to the unique needs of detained youth.

Acknowledgments

None.

Authors' Contributions: P.J.K. conceptualized the study and P.J.K., J.G., M.R., N.I.D., M.M., A.D.M-J, and B.H.A-E contributed to the study design. P.J.K. and B.H.A-E carried out data preparation and P.J.K., J.G., M.R., N.I.D., M.M., A.D.M-J, and B.H.A-E did the data analysis. P.J.K., J.G., M.R., N.I.D., M.M., A.D.M-J, and B.H.A-E wrote the first draft and all authors contributed to interpretation of findings and review and editing of the manuscript. B.A.E. had final responsibility for the decision to submit the manuscript.

Funding Sources

This work is supported by the Frontiers CTSI Career Development Award (KL2 equivalent supported by Children's Mercy Hospital via in-kind support through [UL1TR002366] – Frontiers University of Kansas Clinical and Translational Science Institute) (AMJ).

References

- National Commission on Correctional Health Care. STI testing for adolescents and adults upon admission to correctional facilities. 2020. Available at: https://www.ncchc.org/position-statements/sti-testing-foradolescents-and-adults-upon-admission-to-correctional-facilities-2020/. Accessed August 3, 2024.
- [2] U.S Department of Health & Human Services Office of Disease Prevention and Health Promotion. Sexually Transmitted Infections. Available at: https://health.gov/healthypeople/objectives-and-data/browse-objectives/ sexually-transmitted-infections. Accessed August 3, 2024.
- [3] Office of Juvenile Justice and Delinquency Prevention. Youth's characteristics and backgrounds: Findings from the survey of youth in residential placement. Available at: https://ojjdp.ojp.gov/library/publications/youths-characteristicsand-backgrounds-findings-survey-youth-residential. Accessed August 3, 2024.
- [4] Saleeby E, O'Donnell B, Jackson AM, et al. Tough choices: Exploring decision-making for pregnancy intentions and prevention among girls in the justice system. J Correct Health Care 2019;25:351–61.
- [5] Suresh SC, Questell L, Sufrin C. Access to reproductive health care in juvenile justice facilities. J Pediatr Adolesc Gynecol 2020;33:296–301.

ARTICLE IN PRESS

A.D. McNeill-Johnson et al. / Journal of Adolescent Health xxx (2025) 1-9

- [6] Kim M, Sufrin C, Nowotny K, et al. Pregnancy prevalence and outcomes in 3 United States juvenile residential systems. J Pediatr Adolesc Gynecol 2021; 34:546–51.
- [7] Gallagher CA, Dobrin A, Douds AS. A national overview of reproductive health care services for girls in juvenile justice residential facilities. Wom Health Issues 2007;17:217–26.
- [8] Owen MC, Wallace SB. Advocacy and collaborative health care for justiceinvolved youth. Pediatrics 2020;146:e20201755.
- [9] Joseph-DiCaprio J, Farrow J, Feinstein RA, et al. Health care for incarcerated youth. Position paper of the Society for Adolescent Medicine. J Adolesc Health 2000;27:73–5.
- [10] American College of Obstetricians and Gynecologists' Committee on Health Care for Underserved Women. Reproductive health care for incarcerated pregnant, postpartum, and nonpregnant individuals: ACOG committee opinion, number 830. Obstet Gynecol 2021;138:e24–34.
- [11] Tricco AC, Lillie E, Zarin W, et al. PRISMA extension for scoping reviews (PRISMA-ScR): Checklist and explanation. Ann Intern Med 2018;169:467– 73.
- [12] Ouzzani M, Hammady H, Fedorowicz Z, et al. Rayyan—a web and mobile app for systematic reviews. Syst Rev 2016;5:210.
- [13] Peters MDJ, Marnie C, Tricco AC, et al. Updated methodological guidance for the conduct of scoping reviews. JBI Evid Synth 2020;18:2119–26.
- [14] Magura S, Kang SY, Shapiro JL. Outcomes of intensive AIDS education for male adolescent drug users in jail. J Adolesc Health 1994;15:457–63.
- [15] Kelly PJ, Owen SV, Peralez-Dieckmann E, et al. Health interventions with girls in the juvenile justice system. Wom Health Issues 2007;17: 227–36.
- [16] Kelly PJ, Martinez E, Medrano M. Gender–specific health education in the juvenile justice system. | Correct Health Care 2004;11:45–58.
- [17] Daniels J, Crum M, Ramaswamy M, et al. Creating REAL MEN: Description of an intervention to reduce drug use, HIV risk, and rearrest among young men returning to urban communities from jail. Health Promot Pract 2011; 12:44–54.
- [18] Freudenberg N, Ramaswamy M, Daniels J, et al. Reducing drug use, human immunodeficiency virus risk, and recidivism among young men leaving jail: Evaluation of the REAL MEN re-entry program. J Adolesc Health 2010; 47:448–55.
- [19] Ramaswamy M, Freudenberg N. Sex partnerships, health, and social risks of young men leaving jail: Analyzing data from a randomized controlled trial. BMC Publ Health 2010;10:689.
- [20] Lauby JL, LaPollo AB, Herbst JH, et al. Preventing AIDS through live movement and sound: Efficacy of a theater-based HIV prevention intervention delivered to high-risk male adolescents in juvenile justice settings. AIDS Educ Prev 2010;22:402–16.

- [21] Robertson AA, St Lawrence J, Morse DT, et al. The healthy teen girls project: Comparison of health education and STD risk reduction intervention for incarcerated adolescent females. Health Educ Behav 2011;38:241–50.
- [22] Tolou-Shams M, Houck C, Conrad SM, et al. HIV prevention for juvenile drug court offenders: A randomized controlled trial focusing on affect management. J Correct Health Care 2011;17:226–32.
- [23] Bryan AD, Magnan RE, Gillman AS, et al. Effect of including alcohol and cannabis content in a sexual risk-reduction intervention on the incidence of sexually transmitted infections in adolescents: A cluster randomized clinical trial. JAMA Pediatr 2018;172:e175621.
- [24] Combs KM, Aparicio EM, Prince DM, et al. Evidence-based sexual health programs for youth involved with juvenile justice and child welfare systems: Outcomes across settings. Child Youth Serv Rev 2019;100:64–9.
- [25] Davis TL, Boyce LS, Rose E, et al. Lessons learned from delivering Imara, an HIV/STI risk reduction intervention for African American girls in juvenile detention. Health Promot Pract 2016;17:31–9.
- [26] DiClemente RJ, Davis TL, Swartzendruber A, et al. Efficacy of an HIV/STI sexual risk-reduction intervention for African American adolescent girls in juvenile detention centers: A randomized controlled trial. Women Health 2014;54:726–49.
- [27] Donenberg G, Emerson E, Kendall AD. HIV-risk reduction intervention for juvenile offenders on probation: The PHAT Life group randomized controlled trial. Health Psychol 2018;37:364–74.
- [28] Grubb LK, Beyda RM, Eissa MA, et al. A contraception quality improvement initiative with detained young women: Counseling, initiation, and utilization. J Pediatr Adolesc Gynecol 2018;31:405–10.
- [29] Son J, Miller WM, Tossone K, et al. The effect of interprofessional studentled reproductive health education on youths in juvenile detention. J Pediatr Adolesc Gynecol 2017;30:370–5.
- [30] Fix RL, Walsh CS, Sheidow AJ, et al. Juvenile probation officers delivering an intervention for substance use significantly reduces adolescents' risky sexual behaviours. Sex Health 2024;21.
- [31] Plant A, Schladale J, Neffa-Creech D, et al. Development, acceptability, and perceived effectiveness of a trauma-informed adolescent self-regulation intervention. Eval Program Plann 2023;97:102232.
- [32] Sell K, Oliver K, Meiksin R. Comprehensive sex education addressing gender and power: A systematic review to investigate implementation and mechanisms of impact. Sex Res Soc Pol 2023;20:58–74.
- [33] The Guttmacher Institute. Federally funded abstinence-only programs: Harmful and ineffective. Available at: https://www.guttmacher.org/factsheet/abstinence-only-programs. Accessed August 3, 2024.
- [34] Kelly PJ, Ahmed A, Martinez E, et al. Cost analysis of obtaining postintervention results in a cohort of high-risk adolescent girls. Nurs Res 2007;56:269–74.