UNIVERSITY of York

This is a repository copy of *Abstinence-only-until-marriage:An Updated review of U.S. policies and programs and their impact*.

White Rose Research Online URL for this paper:
https://eprints.whiterose.ac.uk/120673/

Version: Accepted Version

Article:
Santelli, John S, Kantor, Leslie, Grilo, Stephanie et al. (10 more authors) (2017) Abstinence-only-until-marriage:An Updated review of U.S. policies and programs and their impact. Journal of Adolescent Health. pp. 273-280. ISSN 1879-1972

https://doi.org/10.1016/j.jadohealth.2017.05.031

Reuse
This article is distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND) licence. This licence only allows you to download this work and share it with others as long as you credit the authors, but you can't change the article in any way or use it commercially. More information and the full terms of the licence here: https://creativecommons.org/licenses/

Takedown
If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.

White Rose university consortium
Universities of Leeds, Sheffield & York

eprints@whiterose.ac.uk
https://eprints.whiterose.ac.uk/

Journal of Adolescent Health (in press) 2017

Abstinence-only-until-marriage: An Updated review of U.S. policies and programs and their impact

John S Santelli, MD, MPH; Leslie M Kantor, PhD, MPH; Stephanie A Grilo, MA; Ilene S Speizer, PhD; Laura D Lindberg, PhD; Jennifer Heitel, MPH; Amy Schalet, PhD; Maureen Lyon, PhD; Amanda J Mason-Jones, PhD, MPH; Terry McGovern, JD; Craig J Heck, MPH; Jennifer Rogers, MPH; Mary A Ott, MD

Abstract: Adolescence is marked by the emergence of human sexuality, sexual identity and the initiation of intimate relations; within this context, abstinence from sexual intercourse can be a healthy choice. However, programs that promote abstinence-only-until-marriage (AOUM) or sexual risk avoidance (SRA), are scientifically and ethically problematic and—as such—have been widely rejected by medical and public health professionals. Although abstinence is theoretically effective, in actual practice, intentions to abstain from sexual activity often fail. Given a rising age at first marriage around the world, a rapidly declining percentage of young people remain abstinent until marriage. Promotion of AOUM policies by the United States (U.S.) government has undermined sexuality education in the U.S. and in U.S. foreign aid programs; funding for AOUM continues in the U.S. The weight of scientific evidence finds that AOUM programs are not effective in delaying initiation of sexual intercourse or changing other sexual risk behaviors. AOUM programs, as defined by U.S. federal funding requirements, inherently withhold information about human sexuality and may provide medically inaccurate and stigmatizing information. Thus, AOUM programs threaten fundamental human rights to health, information, and life. Young people need access to accurate and comprehensive sexual health information to protect their health and lives.

Keywords: Abstinence; Sex education; Policy

*Address correspondence to: Dr. John Santelli, Heilbrunn Department of Population and Family Health, Mailman School of Public Health, Columbia University, 60 Haven Avenue, B-2, New York, NY 10032. E-mail address: js2637@columbia.edu

Implications and contribution summary statement

U.S. abstinence-only-until-marriage policies and programs: a) are not effective at delaying adolescent sexual initiation, reducing sexual risk

behaviors, or improving health outcomes; b) violate adolescent rights to health information; c) stigmatize or exclude many youth including sexually active and sexual minority youth; and d) reinforce gender stereotypes that are harmful to adolescents' sexual health. Sexuality education should be medically accurate, non-stigmatizing, inclusive, and culturally competent and should prepare and empower young people to make healthy sexual choices throughout their lives. The U.S. federal government, U.S. state and local governments, and all nations should eliminate AOUM promotion and funding. Adolescent sexual and reproductive health promotion should be based on scientific evidence and understanding, public health principles, and human rights.

Introduction

This review article updates our 2006 review of abstinence-only-until-marriage (AOUM) policies and programs promoted by the United States (U.S.) government. We use the term AOUM to describe programs and policies that adhere to U.S. federal government funding requirements created in 1996. This update addresses the major changes in AOUM funding and programs, the accumulation of evaluation and observational research, and a better understanding of the impact of AOUM programs on other public health programs and specific groups of adolescents.

Methodology

Research on AOUM was identified in multiple ways. We collected reports from researchers, educators and policymakers involved in sexuality education and adolescent health, and we included policy-relevant information and viewpoints about AOUM programs from sources such as government reports or reports from advocacy organizations. A literature review focusing on the period since 2006 was also undertaken using Google Scholar, although this identified few additional resources. Information on human rights was taken from international declarations and from reports provided by human rights organizations. Publications from advocacy organizations were included when they were influential in policy debates.

Definitions of abstinence and abstinence-only-until-marriage

Abstinence, as the term is used by program planners and policymakers, is often not clearly defined. A variety of terms have been used to describe programs that focus exclusively on promoting abstinence, including "abstinence-only," "AOUM," and "sexual risk avoidance," the later term which is increasingly used by proponents. Health professionals generally view abstinence as a behavioral or health issue, using terms such as "postponing sex," "never had vaginal sex," or refraining from further sexual intercourse if sexually experienced. In contrast, AOUM proponents generally define abstinence in moral terms, using language such as "chaste" or "virgin" and framing abstinence as a "commitment to chastity." This terminology reflects the religious origins of AOUM programs. U.S. federal funding policy adopted such a moralistic definition of "abstinence education" in 1996, for example requiring it "teaches that a mutually faithful monogamous relationship in the context of marriage is the expected standard of human sexual activity" [1]. See Table 1 for the federal definition of "abstinence education."

Thus, it is important to recognize that many advocates of AOUM programs are primarily concerned with issues such as character and morality, while

health professionals are generally concerned with health behaviors and health outcomes. This helps to explain the disconnect between the two groups.

Table 1
Federal definition of "abstinence education" [1]

Under Title V, Section 510 of the 1996 Social Security Act, P.L. 104–193, the term "abstinence education" is defined as an educational or motivational program which [1]:

(A) has as its exclusive purpose, teaching the social, psychological, and health gains to be realized by abstaining from sexual activity
(B) teaches abstinence from sexual activity outside marriage as the expected standard for all school-age children
(C) teaches that abstinence from sexual activity is the only certain way to avoid out-of-wedlock pregnancy, sexually transmitted diseases, and other associated health problems
(D) teaches that a mutually faithful monogamous relationship in the context of marriage is the expected standard of human sexual activity
(E) teaches that sexual activity outside of the context of marriage is likely to have harmful psychological and physical effects
(F) teaches that bearing children out-of-wedlock is likely to have harmful consequences for the child, the child's parents, and society
(G) teaches young people how to reject sexual advances and how alcohol and drug use increases vulnerability to sexual advances
(H) teaches the importance of attaining self-sufficiency before engaging in sexual activity

The history of AOUM funding programs in the United States

The federal government began supporting abstinence promotion programs in 1981 via the Adolescent Family Life Act (AFLA), which provided funding to community-based and faith-based organizations and was established to promote "chastity" and "self-discipline." Beginning in 1996 there was a major expansion in federal support to states for AOUM programming through the Title V abstinence-only-until-marriage program (as part of "welfare reform") and a shift to funding programs that promoted only abstinence and restricted other information [2-5]. The Community-Based Abstinence Education (CBAE) program was created in 2000, which made grants directly to community-based organizations, including faith-based organizations. Federal funding for these programs grew rapidly from 1996 until 2006. The funding leveled out between 2006 and 2009 and then was reduced in 2010 and then increased in 2015. Between 1982 and federal Fiscal Year (FY) 2017, Congress has spent over $2billion on domestic AOUM programs. Funding for AOUM continues today at both the federal and state levels.

With passage of welfare reform in 1996 came the creation of the Title V AOUM program and eight-point A–H federal statutory definition of "abstinence education," which specifies, in part, that programs must have as their "exclusive purpose" the promotion of abstinence outside of marriage (See Table 1 for the complete definition). Programs funded through this funding stream to the states did not have to address all eight points of the A–H definition; however, they could "not be inconsistent with any aspect of the abstinence

education definition [6]" and, therefore, could not in any way advocate contraceptive use or discuss contraceptive methods except to emphasize their failure rates [3, 4]. Congressional intent for the CBAE program was to create "pure" AOUM programs, in response to concerns that states were using Title V AOUM funds for "soft" activities, such as media campaigns, instead of direct classroom instruction and were targeting younger adolescents [3]. CBAE-funded programs were required to teach all eight points of the federal definition of "abstinence education," had to target 12–18-year-olds, and—except in limited circumstances—could not provide young people with information about contraception or safer-sex practices, even with their own non-federal funds [3]. The guidelines also broadened the definition of abstinence from avoiding sexual intercourse to abstaining from all "sexual activity," which "refers to any type of genital contact or sexual stimulation between two persons, including, but not limited to sexual intercourse [7-9]."

In 2004, the House Committee on Government Reform released a report that 11 of the 13 AOUM programs most widely used by CBAE grantees contained false, misleading, or distorted information about reproductive health, misrepresentations about the effectiveness of condoms in preventing STIs and pregnancy, as well as gender and sexual minority stereotypes, moral judgments, religious concepts, and factual errors [10]. A report released in November 2006 by the non-partisan Government Accountability Office (GAO) found the Administration for Children and Families, which oversaw the majority of federal AOUM funding, was providing very little oversight of funded AOUM programs and noted that the federal agency did not review its grantees' materials for scientific accuracy or even require grantees to review their own materials for scientific accuracy [11].

Given concerns about program efficacy and an increasingly restrictive federal program requirements, an increasing number of states refused Title V AOUM funding beginning in 2004. (California was the only state that never accepted AOUM funding.) By 2009, nearly half of the states had chosen not to take federal support [12, 13]. In March 2010, Title V AOUM funding was resurrected as part of negotiations for passage of the *Patient Protection and Affordable Care Act*, and $50 million a year was allocated for five years ($250 million in total over 2010–2014). In April 2015, funding for the Title V AOUM program was extended through FY 2017 and increased to $75 million per year in exchange for federal funding for more comprehensive approaches to sex education, the Personal Responsibility Education Program (PREP), which is also funded through FY 2017 at a level of $75 million per year. Under current guidance, the program is more flexible; however, programs must still teach abstinence to the exclusion of other topics. Programs must ensure abstinence from sexual activity is an expected outcome and no funds can be used in ways that contradict the A–H federal AOUM definition. Funded programs may provide mentoring, counseling, and adult supervision and must be medically accurate and age-appropriate. States cannot use the funds to educate adolescents about contraceptive use or discuss contraceptive methods, except to emphasize failure rates. In FY 2015, 36 states and six territories applied for Title V AOUM funding [14].

In December 2010, Congress passed the *Consolidated Appropriations Act of 2010*, which eliminated all existing discretionary funding for AOUM programs, including the portion of AFLA that had been tied to the eight-point definition

of AOUM programs beginning in FY 1997 [15]. This legislation also included the creation of the Teen Pregnancy Prevention Program (TPPP), which was funded at $101 million in FY 2016. In FY 2016, Congress created the "Sexual Risk Avoidance Education" program, which is Administered by Family and Youth Services Bureau in the Administration for Children and Families. Funded at $10 million in FY 2016, this program is defined as: "Voluntarily refraining from non-marital sexual activity" and teaching the "benefits associated with self-regulation" and "success sequencing for poverty prevention," which is outlined as "completing school, securing a job, and marrying before bearing children [16]." In FY 2016, a total of $85 million was allocated for AOUM programs through the Title V AOUM Program and the "Sexual Risk Avoidance Education" program and a total of $176 million was allocated to more comprehensive sexuality education through the TPPP and PREP.

Trends in initiation of sexual intercourse and marriage

The goal of AOUM programs is to delay initiation of sexual intercourse until marriage; however, this goal runs counter to demographic trends in the U.S. and around the globe. The clearest trend is a rising age at first marriage; trends in age at first sex show less change and no universal pattern [17]. Thus, the rising age at marriage has led to a substantial increase in premarital sex [18].

In the US, median age at first sex among women fell from the 1960s (at age 19 years) until the early 1990s (at age 17 years); age at first sex then rose to 17.8 years in 2005 and has since plateaued [19]. However, given secular trends towards rising age at marriage over the past 60 years, the interval of time between first intercourse and first marriage has increased over time for both women and men in the U.S. While the median age at first intercourse for women is currently 17.8 years, the median age at first marriage is 26.5 years (a gap of 8.7 years); for men the gap between the median age at first sex (18.1) and first marriage (29.8) is 11.7 years [19]. Only a small percentage of young people wait until marriage to have their first intercourse. In contrast, among women born in the 1940s (and turning age 15 between 1955 and 1964), the interval between first intercourse and first marriage was between 1 and 1.5 years.

Psychological and physical health related to adolescent sexual initiation

The goal of sex education is to raise sexually healthy adults. Healthy development requires complete information, open and honest conversations, and support for decision-making about sex and relationships [20-22]. This vision of sexuality education is directly contradicted by AOUM thinking (see Table 1) [3, 5].

Advocates for AOUM programs and the language of U.S. government policy suggest that sexual activity outside of the context of marriage is likely to have harmful psychological and physical effects. We find little evidence suggesting that consensual sex between adolescents is psychologically harmful. Rather, psychological harm—when it occurs—appears to be the result of sexual coercion and nonconsensual experiences, including adverse childhood experiences [23] and sexual abuse [24]. Recent large studies of representative adolescent populations suggest early sexual intercourse is not associated with

physical or emotional symptoms, except to the extent cultural norms and social sanctions create disparities for girls compared to boys with respect to early sexual behavior [25]. Rigid cultural norms and social sanctions likely account for this gender disparity; these gender stereotypes undermine adolescents' sexual health.

Initiation of sexual intercourse in adolescence is associated with an increased risk of sexually transmitted infections (STIs), including human immunodeficiency virus (HIV), and mistimed and unwanted pregnancy. Adolescents have the highest age-specific risk for many STIs [26], and the highest age-specific proportion of unintended pregnancy [27]. Long-term sequelae of STIs can include infertility, tubal pregnancy, fetal and infant demise, chronic pelvic pain, and cervical cancer [28] and death from HIV. To reduce the risk of these adverse outcomes, adolescents can engage in a variety of risk reduction and risk avoidance (i.e., abstinence) behaviors.

The risk associated with adolescent sexual activity is greatly influenced by policy context. As is the case with the mental health outcomes of sexual activity, physical outcomes are as much the result of environmental factors as of individual choices. In countries in which adolescents receive routine access to contraceptive education and counseling, and necessary socioeconomic resources, their pregnancy and birth rates tend to be a fraction of those of their peers in the U.S [29, 30]. We explore the efficacy of risk reduction and risk avoidance next.

Evaluations of AOUM and comprehensive sexuality education programs in promoting abstinence

While advocates of AOUM policies and programs have asserted their effectiveness, scientific evidence suggests otherwise. A 2007 systematic review by Douglas Kirby [31] found no scientific evidence that AOUM programs demonstrate efficacy in delaying initiation of sexual intercourse, reducing the number of sexual partners, or facilitating secondary abstinence. Moreover, a rigorous national evaluation was completed in 2007 by Mathematica Policy Research, Inc., with support from the DHHS's Office of the Assistant Secretary for Planning and Evaluation (OASPE) [32]; among four model AOUM programs, no impact was found on initiation of sexual intercourse, numbers of sexual partners, or other behaviors.

A 2007 Cochrane meta-analysis of 13 AOUM programs found that evaluated programs consistently showed no impact on sexual initiation, frequency of vaginal sex, number of partners, condom use, or the incidence of unprotected vaginal sex [33]. More recently, a 2012 meta-analysis by the U.S. Centers for Disease Control and Prevention (CDC) examined 66 comprehensive risk reduction (CRR) sexual health programs and 23 abstinence programs. CRR programs had favorable effects on current sexual activity (i.e., abstinence), number of sex partners, frequency of sexual activity, use of protection (condoms and/or hormonal contraception), frequency of unprotected sexual activity, STIs and pregnancy [34]. In contrast, the meta-analysis of risk avoidance (AOUM) programs found effects on sexual activity, but not other beheaviors. (Equivocal changes were found for a decrease in frequency of sexual activity and an increase in pregnancy.) Importantly, the effect on sexual activity was only significant in the non-randomized control trial sub-group and not significant in the stronger randomized control trial sub-group. Thus, the CDC concluded that while CRR programs were an effective strategy

for reducing adolescent pregnancy and STI/HIV among adolescents, "no conclusions could be drawn on the effectiveness of group-based abstinence education."[34]. More recently, a 2016 review of 37 systematic reviews, summarizing 224 randomized controlled trials of school-based sex education programs concluded that abstinence-only interventions did not promote positive changes in sexual initiation or other sexual behaviors [35].

Efficacy for abstinence in preventing pregnancy and STIs

Abstinence from sexual intercourse has been described as "the only certain way to avoid out-of-wedlock pregnancy, sexually transmitted diseases, and other associated health problems" in the Section 510 Title V federal definition. This is a misleading and potentially harmful message that conflates theoretical effectiveness of intentions to remain abstinent and the actual practice of abstinence. Abstinence is often not effective in preventing pregnancy or STIs as many young people who intend to practice abstinence fail to do so.

The most useful observational data in understanding the efficacy of abstinence intentions comes from examination of the virginity pledge movement in the National Longitudinal Survey of Youth (Add Health) [36, 37]. Add Health data suggest that many adolescents who intend to be abstinent fail to do so, and that when abstainers do initiate intercourse, many fail to use condoms and contraception to protect themselves [36, 37]. Other studies find higher rates of HPV and non-marital pregnancies among adolescent females who took a virginity pledge than those who did not [38].

Consequently, these studies suggest that user failure with abstinence is high. Thus, although theoretically completely effective in preventing pregnancy, in actual practice the efficacy of AOUM interventions may approach zero.

Public and professional support for abstinence and comprehensive sexuality education

While the federal AOUM program assumes that abstinence and AOUM programs are universally valued, public opinion polls in the U.S. suggest strong support for comprehensive approaches to sex education—including abstinence as a behavioral goal—but also including education about condoms, contraception, and access to condoms and contraception for sexually active adolescents. In a 2014 nationally representative survey, 74% of adults support federal money going to programs proven to delay sex, improve contraceptive use and/or prevent teen pregnancy [39].

Likewise, health professionals have overwhelming supported comprehensive sexuality education. The major associations of physicians and public health workers have endorsed comprehensive approaches to sexuality education; many have specifically taken positions against AOUM programs that limit sexual and reproductive health information for young people [20-22, 40-42]. National public health goals, established by the US Department of Health and Human Services [43], call for increasing the share of adolescents receiving formal instruction about birth control methods, prevention of HIV/AIDS and STIs, and abstinence.

Impact of AOUM policies on comprehensive sexuality education

The rise of AOUM policies and funding has been associated with significant

changes in the content of formal sex education in the U.S. Consecutive surveys on health educational practice in the U.S. provide evidence of an erosion of comprehensive sexuality education in schools. The percentage of schools requiring instruction about human sexuality fell from 67% in 2000 to 48% in 2014, while the share requiring instruction about HIV prevention declined from 64% to 41%. By 2014, 50% of middle and junior high schools and 76% of high schools taught abstinence as the best way to avoid pregnancy, HIV, and STDs [44]. Only 23% of junior high schools and 61% of high schools taught about methods of birth control generally, while 10% of junior high and 35% of high school teachers taught specifically about the correct use of condoms [44].

Likewise, nationally-representative data from the National Survey of Family Growth (NSFG) tracks adolescents' reports of receipt of formal sex education from 1995 to 2013. During this period, most adolescents 15-19 years (80-90%) report formal instruction about "how to say no to sex." In 1995, 81% of adolescent males and 87% of adolescent females reported receiving formal instruction about birth control methods; by 2011–2013, this had fallen to 55% of males and 60% of females. The share of adolescents who received instruction on abstinence but no instruction about birth control methods, increased from 8% to 28% of females and from 9% to 35% of males from 1995 to 2011-2013 [45, 46].

The lack of clear federal policy guidelines or resources for adolescent comprehensive sexuality education has resulted in a wide array of sex education policies at the state and school districts level, and marked disparities by state and district in access to comprehensive sex education and sexual health outcomes [46, 47]. For example, in Indiana, in a single school district, AOUM is taught in general health classes while comprehensive sex education is provided to pregnant and parenting teens. State laws vary considerably. When sex education is taught, 37 require abstinence to be taught, 26 require abstinence to be stressed, and 11 that abstinence only be covered [48]. Nineteen states require teaching that sexual activity should only occur in marriage. Eight states either require negative information on sexual orientation or do not allow information to be provided on sexual orientation [48, 49]. Policy making, occurring at the state and local levels, frequently is done without reference to data on effectiveness, the need to support healthy sexual development, or the ethics of withholding potentially life-saving sexual health information. Existing state-level data on the effects of state abstinence policies at best shows no change in teen pregnancy and STIs [47, 50-52], with several studies showing an association between increasingly strict abstinence policies and higher rates of pregnancy, teen births and chlamydia infections [53-55].

The human right to sexual health information

The U.S. federal approach to abstinence promotion raises serious ethical and human rights concerns. Access to complete and accurate STI, HIV/AIDS, and reproductive and sexual health information has been recognized as a basic human right and essential to realizing the human right to the highest attainable standard of health [56]. Governments have an obligation to provide accurate information to their citizens and eschew the provision of misinformation; such obligations extend to government-funded health education and health care services [56].

International treaties provide that all people have the right to "seek, receive and impart information and ideas of all kinds," including information about their health [57-59]. The U.N. Committee on the Rights of the Child—the U.N. body responsible for monitoring implementation of the Convention on the Rights of the Child, and which provides authoritative guidance on its provisions—has emphasized that children's right to access adequate HIV/AIDS and sexual health information is essential to securing their rights to health and information [60, 61]. Article 12 of the International Covenant on Economic, Social and Cultural Rights (ICESCR) specifically obliges governments to take all necessary steps for the "*prevention, treatment and control of epidemic . . . diseases*," such as HIV/AIDS [62]. The Committee on Economic, Social and Cultural Rights, the U.N. body responsible for monitoring implementation of the ICESCR, and which provides authoritative guidance on its provisions, has interpreted Article 12 to require the "*the establishment of prevention and education programmes for behaviour-related health concerns such as sexually transmitted diseases, in particular HIV/AIDS, and those adversely affecting sexual and reproductive health*" [59].

The United Nations Guidelines on HIV/AIDS and Human Rights provide guidance in interpreting international legal norms as they relate to HIV and AIDS. These guidelines similarly call on states to

> "*ensure that children and adolescents have adequate access to confidential sexual and reproductive health services, including HIV/AIDS information, counselling, testing and prevention measures such as condoms*," [63].

Access to accurate health information is a basic human right that has also been described in international statements on reproductive rights such as the Programme of Action of the International Conference on Population and Development— Cairo, 1994 [64]. Overall, these international treaties and statements clearly define the important responsibility of governments to provide accurate and complete information on sexual health to their adolescent citizens [65].

Ethical obligations of health care providers and teachers/health educators

The U.S. AOUM program is also at odds with commonly accepted notions of medical ethics. Just as adolescents have the right to accurate and complete information from teachers and health educators, health care providers have ethical obligations to provide accurate health information in caring for patients [66]. Health care providers may not withhold information from a patient in order to influence health care choices. Informed consent requires provision of all pertinent information to the patient. Similar ethical obligations apply to health educators [67-69].

The withholding of information on contraception or barrier protection to induce the adolescent to become abstinent is inherently coercive. It violates the principle of beneficence (i.e., do good and avoid harm) as it may cause an adolescent to use ineffective (or no) protection against pregnancy and STIs. Similarly, government programs providing abstinence as a sole option are ethically problematic, as they exclude accurate information about contraception and misinform by overemphasizing or misstating the risks of contraception [10, 70].

AOUM programs and gender stereotypes

AOUM programming have often included different lessons for and about girls and boys and reinforce gender stereotypes about female passivity and

male aggressiveness [71]. The 2004 Waxman report found that AOUM programs included gender stereotypes [10]. Rigid masculinity and femininity beliefs and gender inequities are often associated with negative sexual health behaviors including reduced likelihood of condom and contraceptive use [72, 73]. Programs that critique rigid gender norms and gender-based power imbalances are more likely to positively impact sexual and reproductive health knowledge, attitudes, behaviors and health outcomes.

AOUM programs and sexually active youth

AOUM programs geared to adolescents who have not yet engaged in coitus and programs simply promoting abstinence systematically ignore the immediate needs of sexually active adolescents, a group with specific reproductive health needs and who often require more than abstinence education [74]. Sexually active youth are put at immediate risk when this information is withheld or distorted. Data from the 2006–2010 NSFG indicate that many sexually experienced adolescents have not received formal instruction about birth control methods (25% females, 37% males) [46].

AOUM programs often portray abstinence from sexual activity as a conscious choice over which a young person has total control. In reality, some young people do not have the choice to remain abstinent due to intimate partner violence, sexual abuse, rape, and/or molestation [75, 76]. In addition, AOUM programs dismiss sexually active youth by suggesting that they are less worthy than their abstinent peers and should feel ashamed of their sexual behavior. Federal guidelines for AOUM programs associate sexual abstinence with morality and sexual activity; while sexual activity, pregnancy, and parenthood are associated with negative health outcomes, including later sexual dysfunction and or guilt about sex [77].

AOUM programs and sexual minority youth

AOUM programs may have profoundly negative impacts on the well-being of sexual minority youth including lesbian, gay, bisexual, transgender and questioning (LGBTQ) youth. In 2015 national data from U.S. high school students, 88.8% of students identified as heterosexual, 2.0% identified as gay or lesbian, 6.0% identified as bisexual, and 3.2% were not sure of their sexual identity. Same sex partners were reported by 6.3% of students; adolescents with same sex partners do not necessarily identify as lesbian, gay, or bisexual.

AOUM programs are unlikely to meet the health needs of sexual minority youth, as these programs are largely heteronormative and often stigmatize homosexuality as deviant and unnatural behavior [10, 78-80]. Stigma and discrimination can contribute to health problems such as suicide, feelings of isolation and loneliness, HIV infection, substance abuse, and violence among sexual minority youth [81-84]. By excluding sexual minorities, AOUM programs may produce feelings of rejection and being disconnected to school [85].

The U.S. Supreme Court legalized same-sex marriage across the country in 2015. Prior to this change, for many LGBTQ youth the AOUM message implied that they should never engage in sexual activity as marriage was not a legal option for them [79]. However, the heterosexist bias of most AOUM curricula means that many LGBTQ youth will not get the critical health messages they need from these programs.

Global Impact of U.S. AOUM Funding

AOUM policies by the U.S. government have also influenced global HIV prevention efforts [86], primarily through requirements of the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). Launched in 2003, PEPFAR originally focused on 15 countries in sub-Saharan Africa, the Caribbean, and Asia that had been severely affected by AIDS. At that time, PEPFAR required grantees to devote at least 33% of prevention spending (and two-thirds of funds for sexual transmission) to abstinence-until-marriage programs [87-89]. After 2006, HIV prevention programs funded under PEPFAR were required to follow specific guidance on ABC (Abstinence, Be faithful, and Condom use) issued by the Office of the U.S. Global AIDS Coordinator (OGAC) [90]. The guidance necessitated that, "Implementing partners must…not to give a conflicting message with regard to abstinence by confusing abstinence messages with condom marketing campaigns that appear to encourage sexual activity or appear to present abstinence and condom use as equally viable, alternative choices [90]." In response to the ABC guidance, the U.S. GAO noted that separate programming for abstinence within PEPFAR often undermined country-level national efforts to create integrated messages and programmes for HIV prevention [11]. Human rights groups also found that U.S. government policy was a source for misinformation and censorship in PEPFAR countries [91]. The U.S. emphasis on AOUM may also have reduced condom availability and access to accurate information on HIV/ AIDS in some countries [91, 92].

Notably, a large, well-conducted randomized controlled trial in Kenya found that the national HIV/AIDS school curriculum—focusing on AOUM without mention of condoms, contraception, or health service provision—did not reduce pregnancy or STIs and had the unintended consequence of encouraging early marriage [93]. Further, a 2016 analysis of nationally representative survey data from 22 countries in sub-Saharan Africa for the period 1998-2013 found no difference in trends in adolescent sexual behaviors such as age at first sex between PEPFAR and non-PEPFAR nations—suggesting PEPFAR AOUM funding had had no impact on sexual behaviors [94].

The emphasis within PEPFAR prevention shifted to science-based programming after 2008 with the dropping of earmarks for AOUM [86]. A 2016 HIV prevention initiative for adolescent girls and young women funded by PEPFAR and private foundations (DREAMS) specifically excludes abstinence-only programming—given that there is little to no evidence of efficacy.

Summary

Policies or programs offering abstinence as a single option for unmarried adolescents are scientifically and ethically flawed. AOUM programs have little demonstrated efficacy in helping adolescents to delay intercourse, while promting health-endangering gender stereotypes and marginalizing sexual minority youth. Whilst abstinence from sexual intercourse is theoretically fully protective against pregnancy and STIs, in actual practice, AOUM programs often fail to prevent these outcomes. AOUM programs have generated considerable political support from social conservatives, despite their lack of scientific evidence of efficacy and the fact that they withhold critical health information. The vast majority of Americans strongly support comprehensive approaches to sexuality education.

Despite the fact that health care is founded on ethical notions of informed consent and free choice, federal AOUM programs are inherently coercive, withholding information needed to make informed choices and promoting questionable, inaccurate, and stigmatizing opinions. Federal funding language promotes a specific moral viewpoint, not a public health approach. Federally funded AOUM programs censor lifesaving information about prevention of pregnancy, HIV, and other STIs, and provide incomplete or misleading information about contraception and leave sexual minority youth particularly vulnerable. U.S. AOUM policies and programs are inconsistent with commonly accepted notions of human rights.

In many U.S. communities, there have been declines in the provision of formal sex education (i.e., delivered by schools, churches, and other trusted social institutions) in the last decade, leaving young people without the critical health information they need. Increased funding for AOUM or sexual risk avoidance approaches would further restrict young people's access to the education they need to stay safe and healthy. In both domestic and global contexts, AOUM has not resulted in delays in sexual intercourse or the adoption of more protective sexual behaviors. The emphasis on AOUM approaches has harmed other public health efforts, such as family planning programs and HIV prevention efforts, domestically and globally. Governments in the U.S. and elsewhere should support medically-accurate, evidence-based, and scientifically-justified approaches to sexuality education for young people. Abstinence-only-until-marriage as a basis for health policy and programs should be abandoned.

Acknowledgments

We offer special gratitude to those who are no longer with us, but whose research and policy work continues to inform our understanding: Cynthia Daillard and Doug Kirby.

References

[1] Maternal and Child Health Services Block Grant. 5: Social Security Administration, 1996 Available at: https://www.ssa.gov/OP Home/ssact/title05/0510.htm. Accessed February 17, 2017.

[2] Solomon-Fears C. Reducing teen pregnancy: Adolescent family life and abstinence education programs. 2007: Congressional Information Service, Library of Congress; 2007.

[3] Dailard C. Abstinence promotion and teen family planning: the misguided drive for equal funding. The Guttmacher Report on Public Policy 2002;5:1-3.

[4] Haskins R, Bevan CS. Abstinence education under welfare reform. Children and Youth Services Review 1997;19:465-484.

[5] Kantor LM, Santelli JS, Teitler J, et al. Abstinence-only policies and programs: An overview. Sexuality Research & Social Policy 2008;5:6-17.
[6] Personal Responsibility and Work Opportunity Reconciliation Act. HR 3734: United States Congress, 1996 Available at: https://www.congress.gov/bill/104th-congress/house-bill/3734. Accessed February 17, 2017.
[7] Guidance Regarding Curriculum Content (Required for CBAE grantees as of FY 2006). Department of Health and Human Services, 2006.
[8] SIECUS. A History of Federal Funding for Abstinence-Only-Until-Marriage Programs. Available at: http://www.siecus.org/index.cfm?fuseaction=page.viewpage&pageid=1340&nodeid=1. Accessed February 21, 2017.
[9] Dailard C. The Other Shoe Drops: Federal Abstinence Education Program Becomes More Restrictive. Available at: https://www.guttmacher.org/gpr/2006/03/other-shoe-drops-federal-abstinence-education-program-becomes-more-restrictive. Accessed February 21, 2017.
[10] Waxman H. The content of federally funded abstinence-only education programs. Washington, D.C.: US House of Representatives Committee on Government Reform—Minority Staff: Special Investigations Division; 2004 Available at: http://spot.colorado.edu/~tooley/HenryWaxman.pdf. Accessed February 17, 2017.
[11] Abstinence Education: Efforts to Assess the Accuracy and Effectiveness of Federally Funded Programs. Washington, D.C.: Government Accountability Office; 2006 Available at: http://www.gao.gov/new.items/d0787.pdf. Accessed February 17, 2017.
[12] Raymond M, Bogdanovich L, Brahmi D, et al. State refusal of federal funding for abstinence-only programs. Sexuality Research & Social Policy 2008;5:44-55.
[13] A Brief History of Federal Abstinence-Only-Until-Marriage Funding: FY 2009 Edition. Sexuality Information and Education Council of the United States, 2009 Available at: http://www.siecus.org/index.cfm?fuseaction=Page.ViewPage&PageID=1263. Accessed February 17, 2017.
[14] Federal Funding Overview: Fiscal Year 2015 Edition. Washington, D.C.: Sexuality Information and Education Council of the United States; 2015 Available at: http://siecus.org/index.cfm?fuseaction=document.viewDocument&documentid=598&documentFormatId=705&CFID=685806&CFTOKEN=d946f10292cac875-039EF3C6-1C23-C8EB-80A357F7DA40DA46. Accessed February 17, 2017.
[15] Consolidated Appropriations Act 2012. HR 2055. Washington D.C.: United States Congress, 2011 Available at: https://www.congress.gov/bill/112th-congress/house-bill/2055. Accessed February 17, 2017.
[16] Consolidated Appropriations Act 2016. HR 2029. Washington D.C.: United States Congress, 2015 Available at:

https://www.congress.gov/bill/114th-congress/house-bill/2029/text. Accessed February 17, 2017.
[17] Wellings K, Collumbien M, Slaymaker E, et al. Sexual behaviour in context: a global perspective. The Lancet 2006;368:1706-1728.
[18] Lloyd CB. Schooling and adolescent reproductive behavior in developing countries: Millennium Project, 2006.
[19] Finer LB, Philbin JM. Trends in Ages at Key Reproductive Transitions in the United States, 1951–2010. Women's Health Issues 2014;24:e271-e279. doi:http://dx.doi.org/10.1016/j.whi.2014.02.002
[20] Santelli J, Ott MA, Lyon M, et al. Abstinence-only education policies and programs: A position paper of the Society for Adolescent Medicine. Journal of Adolescent Health 2006;38:83-87. doi:10.1016/j.jadohealth.2005.06.002
[21] Abstinence and U.S. Abstinence Only Education Policies: Ethical and Human Rights Concerns. The American Public Health Association, 2006 Available at: https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2014/07/18/14/05/abstinence-and-us-abstinence-only-education-policies-ethical-and-human-rights-concerns. Accessed February 17, 2017.
[22] Comprehensive Sexuality Education. The American Congress of Obstetricians and Gynecologists, 2016 Available at: http://www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Adolescent-Health-Care/Comprehensive-Sexuality-Education. Accessed February 17, 2017.
[23] Anda RF, Brown DW, Felitti VJ, et al. Adverse childhood experiences and prescription drug use in a cohort study of adult HMO patients. BMC public health 2008;8:1.
[24] Koenig MA, Zablotska I, Lutalo T, et al. Coerced first intercourse and reproductive health among adolescent women in Rakai, Uganda. International family planning perspectives 2004:156-163.
[25] Madkour AS, Farhat T, Halpern CT, et al. Early Adolescent Sexual Initiation and Physical/Psychological Symptoms: A Comparative Analysis of Five Nations. Journal of Youth and Adolescence 2010;39:1211-1225.
[26] Sexually Transmitted Disease Surveillance 2015. Atlanta, GA: Centers for Disease Control and Prevention; 2016 Available at: https://www.cdc.gov/std/stats15/std-surveillance-2015-print.pdf. Accessed February 17, 2017.
[27] Brown SS, Eisenberg L. The best intentions: Unintended pregnancy and the well-being of children and families. Washington, D.C.: National Academies Press, 1995.
[28] Workowski K, Bolan G. Sexually Transmitted Diseases Treatment Guidelines, 2015. Atlanta, GA: Centers for Disease Control and Prevention; 2015 Available at: https://www.cdc.gov/mmwr/pdf/rr/rr6403.pdf. Accessed February 21, 2017.
[29] Schalet AT. Not under my roof: University of Chicago Press Chicago, 2011.
[30] Adolescent birth rate (women aged 15-19 years) (births per 1,000 women ages 15-19). Available at:

http://hdr.undp.org/en/content/adolescent-birth-rate-women-aged-15-19-years-births-1000-women-ages-15-19. Accessed February 21, 2017.
[31] Kirby D. Emerging Answers 2007: Research findings on programs to reduce teen pregnancy and sexually transmitted diseases. Washington, D.C.: The National Campaign to Prevent Teen and Unplanned Pregnancy; 2007. Report No.: 1586710370 Available at: https://thenationalcampaign.org/sites/default/files/resource-primary-download/EA2007_full_0.pdf. Accessed February 17, 2017.
[32] Trenholm C, Devaney B, Fortson K, et al. Impacts of Four Title V, Section 510 Abstinence Education Programs: Final Report. Mathematica Policy Research, Inc 2007.
[33] Underhill K, Operario D, Montgomery P. Abstinence-only programs for HIV infection prevention in high-income countries. Cochrane Database Syst Rev 2007:Cd005421. doi:10.1002/14651858.CD005421.pub2
[34] Chin HB, Sipe TA, Elder R, et al. The Effectiveness of Group-Based Comprehensive Risk-Reduction and Abstinence Education Interventions to Prevent or Reduce the Risk of Adolescent Pregnancy, Human Immunodeficiency Virus, and Sexually Transmitted Infections: Two Systematic Reviews for the Guide to Community Preventive Services. American Journal of Preventive Medicine 2012;42:272-294. doi:http://dx.doi.org/10.1016/j.amepre.2011.11.006
[35] Denford S, Abraham C, Campbell R, et al. A comprehensive review of reviews of school-based interventions to improve sexual-health. Health Psychol Rev 2016;11:33-52. doi:10.1080/17437199.2016.1240625
[36] Bearman PS, Brückner H. Promising the Future: Virginity Pledges and First Intercourse. American journal of Sociology 2001;106:859-912.
[37] Brückner H, Bearman P. After the promise: the STD consequences of adolescent virginity pledges. Journal of Adolescent Health 2005;36:271-278.
[38] Paik A, Sanchagrin KJ, Heimer K. Broken Promises: Abstinence Pledging and Sexual and Reproductive Health. Journal of Marriage and Family 2016.
[39] Survey Says: Investing in Results. The National Campaign to Prevent Teen and Unplanned Pregnancy 2014 Available at: https://thenationalcampaign.org/sites/default/files/resource-primary-download/survey-says-investing-results-jan15.pdf. Accessed February 17, 2017.
[40] Sexuality Education as Part of a Comprehensive Health Education Program in K to 12 Schools. The American Public Health Association, 2014 Available at: https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2015/01/23/09/37/sexuality-education-as-part-of-a-comprehensive-health-education-program-in-k-to-12-schools. Accessed February 17, 2017.
[41] Pediatricians Should Provide Sexuality Education. Elk Grove Village, IL: The American Academy of Pediatrics; 2016 Available at: https://www.aap.org/en-us/about-the-aap/aap-press-room/pages/AAP-Clinical-Report-Pediatricians-Should-Provide-Sexuality-Education.aspx. Accessed February 17, 2017.

[42] Breuner CC, Mattson G, Committee On A, et al. Sexuality Education for Children and Adolescents. Pediatrics 2016;138:e20161348. doi:10.1542/peds.2016-1348
[43] 2020 Objectives: National Public Health Goals. Available at: https://www.healthypeople.gov/2020/topics-objectives. Accessed February 17, 2017.
[44] Results from the School Health Policies and Practices Study 2014. Atlanta, GA: Centers for Disease Control and Prevention; 2015 Available at: https://www.cdc.gov/healthyyouth/data/shpps/pdf/shpps-508-final_101315.pdf. Accessed February 17, 2017.
[45] Lindberg LD, Santelli JS, Singh S. Changes in formal sex education: 1995-2002. Perspectives on sexual and reproductive health 2006;38:182-189.
[46] Lindberg LD, Maddow-Zimet I, Boonstra H. Changes in Adolescents' Receipt of Sex Education, 2006-2013. Journal of Adolescent Health 2016;58:621-627.
[47] Kearney MS, Levine PB. Why is the teen birth rate in the United States so high and why does it matter? The Journal of Economic Perspectives 2012;26:141-166.
[48] Sex and HIV Education. Available at: https://www.guttmacher.org/state-policy/explore/sex-and-hiv-education. Accessed February 17, 2017.
[49] "No Promo Homo" Laws. Available at: http://www.glsen.org/learn/policy/issues/nopromohomo. Accessed February 17, 2017.
[50] Carr JB, Packham A. The Effects of State-Mandated Abstinence-Based Sex Education on Teen Health Outcomes. Health economics 2016.
[51] Chevrette M, Abenhaim HA. Do State-Based Policies Have an Impact on Teen Birth Rates and Teen Abortion Rates in the United States? Journal of pediatric and adolescent gynecology 2015;28:354-361.
[52] Beltz MA, Sacks VH, Moore KA, et al. State policy and teen childbearing: a review of research studies. Journal of Adolescent Health 2015;56:130-138.
[53] Stanger-Hall KF, Hall DW. Abstinence-only education and teen pregnancy rates: why we need comprehensive sex education in the US. PLoS One 2011;6:e24658.
[54] Hogben M, Chesson H, Aral S. Sexuality education policies and sexually transmitted disease rates in the United States of America. International journal of STD & AIDS 2010;21:293-297.
[55] Yang Z, Gaydos LM. Reasons for and challenges of recent increases in teen birth rates: a study of family planning service policies and demographic changes at the state level. Journal of Adolescent Health 2010;46:517-524.
[56] Freedman LP. Censorship and Manipulation of Reproductive Health Information: An Issue of Human Rights and Women's Rights. In: Coliver S, ed. The Right to Know: Human rights and access to reproductive health information. Philadelphia, PA: University of Pennsylvania Press, 1995.

[57] International Covenant on Civil and Political Rights. United Nations, 1966 Available at: http://www.ohchr.org/EN/ProfessionalInterest/Pages/CCPR.aspx. Accessed February 17, 2017.
[58] Convention on the Rights of the Child. United Nations, 1989 Available at: http://www.ohchr.org/EN/ProfessionalInterest/Pages/CRC.aspx. Accessed February 17, 2017.
[59] General Comment No. 14: The Right to the Highest Attainable Standard of Health. 14: Committee on Economic, Social and Cultural Rights, 2000:128-148 Available at: http://www.un.org/documents/ecosoc/docs/2001/e2001-22.pdf. Accessed February 17, 2017.
[60] General Comment No. 3: HIV/AIDS and The Rights of the Child. 3: Committee on the Rights of the Child, 2003 Available at: https://www.unicef.org/aids/files/UNHCHR HIV and childrens rights 2003.pdf. Accessed February 17, 2017.
[61] General Comment No. 22: The Right to Sexual and Reproductive Health. Committee on Economic, Social and Cultural Rights, 2016 Available at: http://docstore.ohchr.org/SelfServices/FilesHandler.ashx?enc=4slQ6QSmlBEDzFEovLCuW1a0Szab0oXTdImnsJZZVQfQejF41Tob4CvIjeTiAP6sGFQktiae1vlbbOAekmaOwDOWsUe7N8TLm%2bP3HJPzxjHySkUoHMavD%2fpyfcp3Ylzg. Accessed February 17, 2017.
[62] International Covenant on Economic, Social and Cultural Rights. United Nations, 1966 Available at: http://www.ohchr.org/EN/ProfessionalInterest/Pages/CESCR.aspx. Accessed February 17, 2017.
[63] The International Guidelines on HIV/AIDS and Human Rights: 2006 Consolidated Version. Switzerland: Office of the United Nations High Commissioner for Human Rights and the Joint United Nations Programme on HIV/AIDS, 2006 Available at: http://data.unaids.org/Publications/IRC-pub07/JC1252-InternGuidelines_en.pdf. Accessed February 17, 2017.
[64] Report of the International Conference on Population and Development. International Conference on Population and Development; 1994; Cairo, Egypt: United Nations; 1994 Available at: http://www.unfpa.org/sites/default/files/event-pdf/icpd_eng_2.pdf. Accessed February 17, 2017.
[65] Kirby D, Ecker N. International Technical Guidance on Sexuality Education: An evidence-informed approach for schools,teachers and health educators. Paris, France: United Nations Educational, Scientific and Cultural Organization 2009 Available at: http://unesdoc.unesco.org/images/0018/001832/183281e.pdf. Accessed February 17, 2017.
[66] American Medical Association Code of Medical Ethics. American Medical Association, 2016 Available at: https://www.ama-assn.org/sites/default/files/media-browser/code-of-medical-ethics-chapter-1.pdf. Accessed February 17, 2017.

[67] Code of Ethics for the Health Education Profession. Coalition of National Health Education Organizations, 2011 Available at: http://www.cnheo.org/files/coe_full_2011.pdf. Accessed February 17, 2017.
[68] Appropriate Practices in School-Based Health Education. Reston, VA: Society of Health and Physical Educators; 2015 Available at: http://www.shapeamerica.org/publications/products/upload/Appropriate-Practices-in-School-Based-Health-Education.pdf. Accessed February 17, 2017.
[69] The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research: The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research; 1978 Available at: https://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/. Accessed February 17, 2017.
[70] Lin AJ, Santelli JS. The accuracy of condom information in three selected abstinence-only education curricula. Sexuality Research & Social Policy 2008;5:56. doi:10.1525/srsp.2008.5.3.56
[71] Beechey SN, Moon LC. Gender in the Adoption and Implementation of Sex Education Policy. Open Journal of Social Sciences 2015;3:224.
[72] Schalet AT, Santelli JS, Russell ST, et al. Invited commentary: Broadening the evidence for adolescent sexual and reproductive health and education in the United States. Journal of youth and adolescence 2014;43:1595-1610.
[73] Haberland NA. The case for addressing gender and power in sexuality and HIV education: A comprehensive review of evaluation studies. International Perspectives on Sexual and Reproductive Health 2015;41:31-42.
[74] Brindis CD, Ott MA. Adolescents, health policy, and the American political process. Journal of Adolescent Health 2002;30:9-16.
[75] Basile KC, Black MC, Breiding MJ, et al. National Intimate Partner and Sexual Violence Survey: 2010 Summary Report: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention, 2011.
[76] Child Maltreatment 2010: United States Department of Health and Human Services; 2010 Available at: http://archive.acf.hhs.gov/programs/cb/pubs/cm10/cm10.pdf. Accessed February 17, 2017.
[77] Else-Quest NM, Hyde JS, DeLamater JD. Context counts: Long-term sequelae of premarital intercourse or abstinence. Journal of Sex Research 2005;42:102-112.
[78] Kempner ME. Toward a sexually healthy America. Abstinence-only-until-marriage programs that try to keep our youth" scared chaste". 2001.
[79] Fisher CM. Queer Youth Experiences with Abstinence-Only-Until-Marriage Sexuality Education: “I can't get married so where does that leave me?”. Journal of LGBT Youth 2009;6:61-79. doi:10.1080/19361650802396775

[80] Elia JP, Eliason MJ. Dangerous Omissions: Abstinence-Only-Until-Marriage School-Based Sexuality Education and the Betrayal of LGBTQ Youth. American Journal of Sexuality Education 2010;5:17-35. doi:10.1080/15546121003748848
[81] Zaza S, Kann L, Barrios LC. Lesbian, Gay, and Bisexual Adolescents: Population Estimate and Prevalence of Health Behaviors. JAMA 2016;316:2355-2356.
[82] Marshal MP, Dietz LJ, Friedman MS, et al. Suicidality and Depression Disparities Between Sexual Minority and Heterosexual Youth: A Meta-Analytic Review. Journal of Adolescent Health 2011;49:115-123. doi:10.1016/j.jadohealth.2011.02.005
[83] Russell ST, Ryan C, Toomey RB, et al. Lesbian, gay, bisexual, and transgender adolescent school victimization: Implications for young adult health and adjustment. Journal of School Health 2011;81:223-230.
[84] Marshal MP, Friedman MS, Stall R, et al. Sexual orientation and adolescent substance use: a meta-analysis and methodological review. Addiction (Abingdon, England) 2008;103:546-556. doi:10.1111/j.1360-0443.2008.02149.x
[85] Kosciw JG, Greytak EA, Bartkiewicz MJ, et al. The 2011 National School Climate Survey: The Experiences of Lesbian, Gay, Bisexual and Transgender Youth in Our Nation's Schools, 2012.
[86] Santelli JS, Speizer IS, Edelstein ZR. Abstinence promotion under PEPFAR: The shifting focus of HIV prevention for youth. Global public health 2013;8:1-12.
[87] United States leadership against HIV/AIDS, tuberculosis, and malaria act of 2003. HR 1298. Washington D.C.: Congress of the United States, 2003 Available at: https://www.congress.gov/bill/108th-congress/house-bill/1298. Accessed February 17, 2017.
[88] Tom Lantos and Henry J. Hyde United States Global Leadership Against HIV/AIDS, Tuberculosis, and Malaria Reauthorization Act of 2008. HR 5501. Washington D.C.: Congress of the United States, 2008 Available at: https://www.congress.gov/bill/110th-congress/house-bill/5501. Accessed February 17, 2017.
[89] Spending Requirement Presents Challenges for Allocating Prevention Funding under the President's Emergency Plan for AIDS Relief United States Government Accountability Office, 2006 Available at: http://www.gao.gov/assets/250/249587.pdf. Accessed February 17, 2017.
[90] ABC Guidance #1 For United States Government In-Country Staff and Implementing Partners Applying the ABC Approach To Preventing Sexually-Transmitted HIV Infections Within The President’s Emergency Plan for AIDS Relief. Washington, D.C.: United States Department of State, Office of the United States Global AIDS Coordinator, 2005 Available at: http://pdf.usaid.gov/pdf_docs/Pcaab411.pdf. Accessed February 17, 2017.
[91] Access to condoms and HIV/AIDS Information: A Global Health and Human Right Concern: Human Rights Watch; 2004 Available at: https://www.hrw.org/legacy/backgrounder/hivaids/condoms1204/condoms1204.pdf. Accessed February 21, 2017.

[92] Cohen J, Csete J. The Philippines. Unprotected: sex condoms and the human right to health: Human Rights Watch; 2004 Available at: https://www.hrw.org/reports/2004/philippines0504/philippines0504.pdf. Accessed February 21, 2017.
[93] Duflo E, Dupas P, Kremer M. Education, HIV, and Early Fertility: Experimental Evidence from Kenya. Am Econ Rev 2015;105:2757-2797. doi:10.1257/aer.20121607
[94] Lo NC, Lowe A, Bendavid E. Abstinence Funding Was Not Associated With Reductions In HIV Risk Behavior In Sub-Saharan Africa. Health Affairs 2016;35:856-863.