

# Abstinence and faithfulness programmes for prevention of HIV/AIDS among young people: What are the current debates?

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## Abstract

Questions have been raised on whether abstinence and faithfulness programs work, particularly for young people. Research is needed for evidence-based documentation of the effectiveness or otherwise of abstinence and faithfulness programmes in young people.

This review was conducted in three stages: identification of relevant studies, classification of these studies, review of data and analysis of findings. Different sources of published and unpublished research literature were searched to locate studies relevant to abstinence and faithfulness (AB) interventions.

A few researchers supported the view that AB work and indicated that Uganda provided the clearest example that HIV is preventable if populations are mobilized to avoid risk. This is confirmed by a 70% decline in HIV prevalence, linked to a 60% reduction in casual sex, in Uganda since the early 1990s. However, most of the literature claiming effectiveness of abstinence and faithfulness interventions is based on personal opinions and qualitative assessment of small projects. The question on whether abstinence and fidelity work as HIV/AIDS prevention strategies among young people was never answered with convincing evidence.

Several research studies found that abstinence and faithfulness interventions were not effective in the prevention of HIV/AIDS. They cited several interventions as reasons for the decline in HIV prevalence, such as increased condom use, use of cleaner needles and a combination of abstinence, be faithful and condomise (ABC). They also cite the death of AIDS patients as reasons for the decline in HIV prevalence.

It can be concluded from the research provided in this review that not only are there question marks over exactly what defines abstinence and what makes it sustainable; there is no clear evidence that it works. A systematic review of U.S. programmes to reduce teenage pregnancy identified three studies evaluating the impact of abstinence-only programmes and found that none of these studies had any effect on sexual behaviour.

There is no conclusive proof that abstinence-only programmes have been successful in reducing HIV transmission. Evidence is also growing that abstinence-only programmes have failed to prevent the spread of sexually transmitted infections and teenage pregnancy. A rigorous, five-year evaluation of 11 abstinence-only programmes, conducted in the U.S in 2006 concluded that abstinence-only interventions have failed to change youth behaviour in the USA.

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## Introduction

Questions have been raised on whether abstinence and faithfulness programs work, particularly for young people. Research is needed for evidence-based documentation of the effectiveness or otherwise of abstinence and faithfulness programs in young people. There is a need to conduct a literature review to understand how published and unpublished research on this topic has yielded.

Previous research has suggested linkages between the involvement of faith-based organizations (FBOs) in campaigns to prevent and mitigate HIV/AIDS and the success of countries in reducing or mitigating the HIV/AIDS epidemic in Africa.<sup>1</sup> Much of the research carried out so far, however, suggests

a correlation between involvement of FBOs and success in HIV/AIDS prevention and mitigation, but it does not get into greater depth on how FBOs promote behaviour change for prevention or carry out care and support in a way that mitigates the epidemic's worst impact.<sup>2</sup>

One of the key questions in this review is: Does abstinence and faithfulness work as HIV/AIDS prevention strategies among young people? This review will classify research on whether it supports abstinence and faithfulness or whether it does not support either or both.

## Methods

This review was conducted in three stages: identification of relevant studies,

classification of these studies, review of data and analysis of findings. Different sources of published and unpublished research literature were searched to locate studies relevant to AB interventions.

A comprehensive search of literature on abstinence and faithfulness was conducted and this identified relevant studies on AB interventions. Electronic searches in databases and websites were also conducted and hand searching of research on AB interventions was done at the local library. The Internet search component was undertaken to discern the basic components offered by AB interventions described over the Internet. The initial search terms consistently utilized included "abstinence

programmes”, “faithfulness/fidelity programmes” and “abstinence and be faithful interventions”. The first search was undertaken in June 2006. About five Internet search engines were used in this study and a list of 192 abstinence, faithfulness and reproductive health sites were identified, visited and searched.

The second step was to review identified literature on the topic and then to analyse and synthesise the information obtained from identified studies.

## Findings and discussion

### **Abstinence**

Complete sexual abstinence is described as the most effective means of protection against pregnancy, HIV infection and other sexually transmitted infections (STIs). Oftentimes abstinence is associated with youth, but it can be an option for both youth and adults. Abstinence offers adolescents, in particular, a number of advantages. Young people are vulnerable to unplanned pregnancy, but they often find it difficult to obtain contraceptives. Sexual abstinence requires no supplies or clinic visits.

Various groups interpret the notion of abstinence differently; for example, most faith-based groups generally view abstinence as a commitment to refrain from sexual intimacy until marriage, while others may view abstinence as delaying sex until some future time. The term can also refer to those who have been sexually active at one time but have now decided to abstain. This is referred to as ‘secondary abstinence’ or ‘secondary virginity’.<sup>3</sup>

Some abstinence-only programmes have developed their own definitions of the kinds of sexual activity that should be avoided until marriage. Others do not define the term, believing that identifying the behaviours to abstain from, would violate children’s innocence and provide them with a “how-to” manual of sexual activity.<sup>4</sup>

The word “abstinence” sometimes has negative connotations, in part because many of those who advocate abstinence before marriage also oppose any discussion of contraception, condom use, or alternatives to intercourse, such as masturbation. However, abstinence can be an important, empowering concept when framed in the context of several options for protecting re-

productive health in an intimate relationship.<sup>5</sup>

In practice, however, abstaining from sex tends to be less effective than many contraceptive methods because complete abstinence requires strong motivation, self-control, and commitment. Also, many questions about sexual abstinence remain unanswered. How can it be encouraged? How should it even be defined? Controversy surrounds programmes that promote abstinence as the only means of protection against unplanned pregnancy and STIs, and the effectiveness of such programmes. But studies from a number of countries suggest that without such information, young people may conclude that vaginal intercourse is the only sexual behaviour that is risky. They may then engage in other sexual activities that can put them at some, if not heightened, risk of contracting HIV and other STIs.

Young women interviewed for a study in Mauritius described a practice known as *dans bords* (light sex), which involves rubbing the penis against the vagina and some penetration, but is not considered sexual intercourse because it does not cause bleeding or pain. In focus group discussions and interviews conducted in Brazil and Guatemala, young people reported that some of their peers practice anal sex to protect a girl’s virginity and prevent conception. A number of surveys have found high rates of heterosexual anal sex among young people, from 9 percent to 38 percent among female adolescents in low-income, urban areas in the United States, to 12 percent among female college students in Togo, to 44 percent among sexually active, male college students in Puerto Rico. Studies of heterosexual HIV transmission have identified anal sex as the most predictive risk factor for becoming infected with HIV.<sup>6</sup>

### **Delaying sexual intercourse**

Data on 10 to 19 year-olds in developing countries are not reliable enough to draw firm conclusions about trends in their sexual behaviour before marriage but Demographic and Health Survey results show an increasing gap between age at first sexual intercourse and age at first marriage in 32 of 37 countries surveyed in the developing world, suggesting that premarital sex is rising throughout sub-Saharan Africa and in most countries of other regions.<sup>7</sup>

Beginning sex at earlier ages increases the risk of STIs for young women and men because the longer a person is sexually active before marriage, the more partners he or she is likely to have. Marrying later can open educational and vocational opportunities to young women<sup>8</sup>, but later marriage combined with increasing premarital sex among adolescents puts them at greater risk of unplanned pregnancies, unsafe abortions, and STIs, including HIV.<sup>9</sup>

In the two African countries that experienced declines in HIV prevalence during the 1990s (Uganda and Zambia), there were also increases in abstinence or delay of sexual debut, being faithful or partner reduction and condom use with non-regular partners. While fertility declined in five African countries between the late 1980s and late 1990s, the more modest reductions in Uganda and Zambia suggest that the increases in age of sexual debut and declines in non-regular partnerships that occurred there may have had little impact on fertility.

In Uganda, the median age of sexual debut among young women increased by about one year over the course of the decade. Young women and men in Zambia, especially in urban areas, also postponed sexual debut. The percentage of 15 to 19-year-old urban women reporting ever having sex dropped from 56% to 40% between the early and late 1990s. For urban males, an even sharper decline from 67% to 34% took place between the middle and end of the decade. By contrast, the trend data for young men and women in Zimbabwe and women in Cameroon or Kenya show little evidence of postponed sexual debut.

Kenya may also have had a small decline in multiple partnerships among singles, but multiple partnerships remained high (52%) among Kenyan men in the late nineties. At the end of the decade, levels of multiple partnerships among singles were highest in Cameroon. This was true for both single men (68%, compared with roughly 30% for single men in Uganda, Zambia, and Zimbabwe) and single women.<sup>10</sup>

### **Support for abstinence and faithfulness programmes**

A few research publications indicate support for abstinence and faithfulness programmes. Data from the 1995 and 2000 Demographic and Health Surveys

and from Ugandan Ministry of Health behavioural surveys conducted in 1997, 2000, and 2001, and shows that Uganda's dramatic decline in HIV prevalence during the past decade has coincided with marked increases in sexual abstinence and greater fidelity in relationships.<sup>11</sup>

In 1996, Uganda became the first African country to report a substantial decline in national HIV rates.<sup>12</sup> During the 1990s, the proportion of women testing positive for HIV in antenatal clinics dropped from 21 percent to 6 percent. A higher proportion of respondents reported being faithful to their partners, having fewer sex partners, abstaining from sex, or delaying sexual debut than reported using or beginning to use condoms. Only 5 to 9 percent reported having "non-regular" partners a measure of faithfulness to a regular partner or partners. Twenty-five to 35 percent said they abstained from sex.

This high rate of sexual abstinence was mainly a result of the increasing number of young Ugandans postponing their first sexual activity. Nationally, the proportion of 15 to 19-year-olds reporting that they had "never had sex" rose from 31 percent to 56 percent among young men and from 26 percent to 46 percent among young women from 1989 to 1995.<sup>13</sup> A study in the major urban districts of Kampala and Jinja, Uganda, found a two-year delay in sexual debut among 15 to 24 year-olds between 1989 and 1995.<sup>14</sup> The increasingly high rate of sexual abstinence was even more striking among younger adolescents surveyed in Soroti District, Uganda. The proportion of 13 and 14-year-old students there reporting that they had "never had sex" rose from 39 percent to 95 percent among boys and from 66 percent to 98 percent among girls from 1994 to 2001.<sup>15</sup>

**Table 1:** Sexual abstinence in Uganda

	Nationally 1985-1995		Soroti District		Kampala & Jinja
"Never had sex" 15-19 years <sup>16</sup>	Men 31-56%	Women 26-46%			
"Never had sex" 13-14 years <sup>17</sup>	98.5%		Boys 39-95%	Girls 66-98%	
Delay in sexual debut 15-25 years <sup>18</sup>					2 year delay between 1989-1995

Some people in the West have expressed scepticism about the ability of African women to abstain or be faithful, since women often have little power to negotiate sex. However, by 1995, a great majority of Ugandan women, 98.5%, were reporting either abstinence or no sex partner outside their regular partners. In Demographic and Health surveys, which ask women if they believe they have the power to refuse unwanted sex, or insist upon condom use, Uganda ranked first among all African nations.<sup>19</sup>

AIDS prevention is largely a behavioural problem that requires a behavioural solution. AIDS prevention programmes in Africa and the developing world generally have become too focused on medical technology and drugs, and not enough on behaviour. Evidence from other countries, show that when faced with a life-threatening danger, people can and will modify their behaviour, once they are given the right information, in the right way. Other countries that have implemented ABC approaches, and have also achieved measures of success include Senegal, Zambia, Jamaica and the Dominican Republic.<sup>20</sup>

A study on transitions to adulthood in South Africa, and found that adolescents were 3.9 times more likely to practice secondary abstinence in 2001 than in 1999. Girls were 9.3 times more likely to abstain while boys were 2.2 times

more likely to abstain. The researchers concluded that life-skills education had no impact on sexual behaviours such as multiple partners, delayed sexual debut or secondary abstinence and that life-skills education should support secondary abstinence, which is already increasing due to other factors.<sup>21</sup>

A study on teaching abstinence in schools in South Africa, Thailand and Mexico, asking whether abstinence messages were appropriate and effective found in South Africa, that abstinence levels were 87% in intervention females and 75% in intervention males. Reasons for abstaining from sex were: not ready, to protect health and friends tease. Teaching abstinence in Thailand included providing information and skills in refusal, negotiation and planning. Here abstinence levels were 15% in intervention females and 22% in intervention males. The conclusions in South Africa were that youth agreed that abstinence is a good choice because it protected against STIs and pregnancy. Youth in SA thought it was ok for teenagers to be abstinent. In Thailand, students who had no partner or who lived in dormitories or with monks were likely to abstain.<sup>22</sup>

Evidence from other sources also suggests that abstinence is a viable strategy for some groups but not for others. Some faith based organisations with a stronger history of involving themselves in the social, sexual and marital relationships between men and women will be more credible in ensuring that their followers take seriously the strategy of abstinence. Although all FBOs communicated the message abstinence as the best strategy, FBOs got very different results in terms of actually changing behaviour.

FBOs often deliver the message of faithfulness as a twin message along side that of abstinence. The message of faithfulness, while somewhat less frequent, is targeted at married couples to encourage them to avoid the risks of infidelity and the chance that infidelity

**Table 2:** Likelihood of adolescents practicing abstinence in South Africa

	2001 vs. 1999	Girls vs. Boys
More likely to practice secondary abstinence	3.9 times	
More likely to practice abstinence		9.3 vs. 2.2 times

**Table 3:** Abstinence levels in recall period 3 of educational interventions in South Africa and Thailand

	Intervention		Controls	
	Males	Females	Males	Females
Abstinence levels in South Africa	75%	87%	62%	80%
Abstinence levels in Thailand	22%	15%	24%	15%

can lead to infection. The assessment of FBO leaders and workers of the successfulness of the message of faithfulness, like that of abstinence, remains mixed. In many cases assessment of the success of the message was uncertain because of the difficulty of monitoring whether those who hear the message are following it (unlike in the case of abstinence where teenage pregnancy can at least give some indication).<sup>23</sup>

Throwing condoms at the problem of HIV/AIDS has simply not worked in Africa. The promotion of abstinence and fidelity, where it has been tried, most notably in Uganda, seems to give people a fighting chance against the virus. The donor-favoured condom approach to prevention was not ending the scourge of AIDS but was perpetuating a host of other, associated problems on the continent. People deserve to know they have alternatives in life to risky sex and that teaching a man to respect himself and the women around him, might just be the way to putting a dent into a pandemic. Feminists are being normally averse to the word abstinence and should hold their noses and give it some consideration.

One of the major goals of mobilizing youth for life, a programme that was implemented by World Relief in Kenya, was to challenge and equip more than 1.8 million youth aged 10 to 24 to choose abstinence before marriage and faithfulness in marriage as the best prevention for the spread of HIV and other sexually transmitted diseases. Lucy Njoroge, Kenya Program Manager for World Relief, offered positive results of mobilizing youth for life's first few months of operation. She said that they gave out 50 pledge forms to nine clubs, all were signed and the clubs were asking for more. She was anticipating that they were likely to have more than 50% of the members committing to abstinence. She further said that in one club alone, ten youth went for HIV counselling and testing out of the approximately 25 members and seven signed the abstinence pledge. Although this sounds like a qualitative assessment of the abstinence programme, it would be helpful to conduct a quantitative evaluation of the project and to determine if the positive trend reported was sustainable.<sup>24</sup>

Uganda provided the clearest example that HIV is preventable if populations are mobilized to avoid risk. Despite limited resources, Uganda has shown a

70% decline in HIV prevalence since the early 1990s, linked to a 60% reduction in casual sex. The response in Uganda appears to be distinctively associated with communication about acquired immunodeficiency syndrome (AIDS) through social networks. Despite substantial condom use and promotion of biomedical approaches, other African countries have shown neither similar behavioural responses nor HIV prevalence declines of the same scale. The Ugandan success is equivalent to a vaccine of 80% effectiveness. Its replication will require changes in global HIV/AIDS intervention policies and their evaluation. It can be assumed that the 60% reduction in casual sex was associated with the abstinence and faithfulness messages propagated in the programme.<sup>25</sup>

Uganda is often cited as a role model in the fight against HIV/AIDS because of its success in reducing both prevalence and incidence of HIV infection since the late 1980s. Although an increase in sexual abstinence has been highlighted as a primary cause of the declines, large increases have also been recorded in monogamy and condom use. The extent to which each of these factors actually influenced the overall decline in Uganda's HIV rates has become a highly charged political issue in the United States, leading to restrictions on how US development funding for combating HIV is allocated. The Presidential Emergency Plan for Funding AIDS Response (PEPFAR) preferably allocates funding to projects that advocate abstinence and faithfulness probably because of the observed declines in HIV prevalence in countries such as Uganda.<sup>26</sup>

Faith based organisations (FBOs) in Uganda carried out other activities that they saw as having a significant impact on HIV/AIDS. The first was, in some FBOs, to tightly control relations between men and women, including arranging all marriages, requiring testing before marriage, only allowing people to marry within the faith, and to prohibit any relations outside of marriage. This method, used by the Ugandan-based Christian sect (of Luuka and Iganga), was seen as effective in preventing the spread of AIDS among the congregation.<sup>27</sup> This claim is not substantiated by statistics to convince that the approach was effective.

Promotion of abstinence from sex to prevent HIV infection contributed to an approximately one-year delay of sexu-

al initiation among youth in Uganda and Zambia where HIV prevalence declined throughout the 1990s. In both countries, delayed sexual initiation among youth, abstinence, and condom use with non-regular partners all contributed to declines in HIV prevalence. However, the study concluded, HIV declines were probably due primarily to both adolescents and adults having fewer sexual partners. In Thailand, a third country where HIV prevalence declined, reductions in commercial sex and other non-marital sexual relationships and increases in condom use during commercial sex likely contributed to the decline. This type of multifaceted behaviour change did not occur to the same extent in the other three countries in the study, Cameroon, Kenya and Zimbabwe, where HIV prevalence did not decline. The authors conclude that messages to delay sexual initiation or to begin practicing abstinence even after having been sexually active need to be an integral part of programs to prevent HIV.<sup>28</sup>

Two major reviews that looked at the behavioural impact of comprehensive sexual health and HIV education found that comprehensive sex education did not lead to increased sexual activity among adolescents. In fact, some studies found that it had raised the age of sexual initiation, reduced the frequency of sex, and convinced young people to have fewer sexual partners.<sup>29</sup>

### Criticisms of abstinence and faithfulness programmes

Abstinence promotion has become the main approach of the United States government to preventing adolescent pregnancy and HIV infection, where the government provides \$100 million a year for abstinence-only education. Schools, youth programs, and media campaigns that receive this funding are required to teach that sexual activity outside of marriage is likely to have harmful psychological and physical effects. They are also prohibited from providing information about contraception, except method failure rates.<sup>30</sup>

A conclusive answer to whether the abstinence-only approach is effective was provided by a more rigorous, five-year evaluation of 11 abstinence-only programmes, conducted for the U.S. Department of Health and Human Services in 2006. This national evaluation of Title V, Section 510 abstinence education programmes in the USA found that



none of the individual programmes had statistically significant impacts on the rate of sexual abstinence. Programme and control group youth also did not differ in the number of partners with whom they had sex and their expectations to abstain. Programme group youth were no more likely than control group youth to have unprotected sex. In short, abstinence-only interventions have failed to change youth behaviour in the USA.<sup>31</sup>

In a review of U.S. programmes to reduce teen pregnancy, none of the abstinence-only studies found any effect on sexual behaviour.<sup>32</sup> Researchers from Columbia University found no evidence that abstinence and faithfulness caused the overall decline of HIV in Uganda between 1994 and 2002. The study reported that increased use of condoms and the death of AIDS patients resulted in fewer HIV cases.

A study in Rakai found that Uganda's HIV incidence dropped due to condoms, not abstinence or faithfulness. Abstinence and faithfulness have actually been declining, but the expected rise in HIV infections stemming from such behaviour has not occurred.<sup>33</sup>

The connection between educational messages focused on prevention and actual behaviour change based on these messages also varied widely. Some groups highlighted success in promoting abstinence, faithfulness, or condom use. In KwaZulu-Natal, for example, many leaders espousing a strategy of abstinence among youth argued that the high rates of teenage pregnancy and continuing high rates of infection meant that the success of their abstinence message was low. Leaders expressed uncertainty about whether such messages translated into behaviour change.

The most delivered messages by faith based organisations (FBOs) were abstinence and faithfulness. Although abstinence was one of the most-delivered messages, there was a wide variation in response to this message, according to FBO leaders and workers. Many pointed out a high pregnancy rate and continuing high rates of infection as evidence that abstinence was a difficult message to convince people to accept.<sup>34</sup>

Evidence is growing that abstinence-only programs fail to prevent the spread of sexually transmitted infections. Youth who took pledges of virginity until marriage had no lower rates of STIs than those who did not. When those who

took virginity pledges did have sex, they were more likely to do so without protection and to engage in oral and anal sex, and were less likely to be tested for STIs.<sup>35</sup>

Abstinence for younger adolescents, faithfulness in marriage and condom promotion have a place in international HIV/AIDS programs. This issue of abstinence-only programming needs to be addressed head on. Not only are there question marks over exactly what defines abstinence and what makes it sustainable; there is no clear evidence that it works.<sup>36</sup>

To support this view, the Johns Hopkins University Centre for Communication Programs (JHU/CCP) study of 100 youth aged 15 to 25 years in greater Windhoek in Namibia, showed that most youth did not understand the terms abstinence or faithfulness for HIV prevention. The study revealed that common HIV/AIDS prevention terms are frequently misunderstood. Most young people believe that "abstinence" means "to be absent" and "faithfulness" means faith in a religious sense, not being faithful to one sexual partner. The word "monogamy" is understood by only one-quarter, with 75 percent saying they had never heard the word. This lack of understanding of key terms means firstly that the messages are not received properly and secondly that the messages about abstinence and faithfulness cannot be internalised and used to change behaviour.<sup>37</sup>

Declining HIV rates in Uganda where due to cleaner needles, not abstinence or condoms. Although, public health and political authorities have ascribed the apparent decline in Ugandan HIV or AIDS rates to increased rates of sexual abstinence or condom use, what appears to be special about Uganda is that in the middle to late 1980s there was a growing public awareness of health care risks. Given the lack of evidence for transmission of HIV to healthy persons by penile-vaginal intercourse, the improvement in injection safety is the best candidate for declining HIV and AIDS rates.<sup>38</sup>

To date, however, there is no conclusive proof that abstinence-only programs have been successful in any country in the world in reducing HIV transmission. In a review of abstinence programs in the United States, pregnancy rates among the partners of the young male participants were no lower

than those among the partners of non-participants.<sup>39</sup>

Similarly, the effectiveness of abstinence as a long-term strategy, particularly for young people, was refuted by a study that reported that not only was the "virginity pledge" broken by more than 60% of the pledgers, but 55% who reported keeping their virginity admitted to engaging in risky forms of non-vaginal sex.<sup>40</sup>

Changes that occurred in abstinence, monogamy and condom use in Uganda in the 1990s, showed a reduction of infection risk by lowering numbers or types of partners among people with more than one relationship was not covered.<sup>41</sup>

Many women in Africa remain extremely vulnerable to HIV infection because of the violence practised against them, and because of legal systems that do not take the issue of violence seriously or that discriminate against women. Where there is violence against women, it is difficult for them to insist on abstinence as an option. Again, women who are married to violent men may find it difficult to insist on their husbands being faithful.<sup>42</sup>

## Conclusion

There are so many opinions and suggestions on whether abstinence and fidelity work as AIDS prevention strategies among young people. A few researchers have attributed the success of the Ugandan AIDS prevention programme on the effectiveness of abstinence and faithfulness interventions. However, most of the literature claiming effectiveness of abstinence and faithfulness interventions is based on personal opinions and qualitative assessment of small projects. The question on whether abstinence and fidelity work as HIV/AIDS prevention strategies among young people was never answered with convincing evidence. Personal opinions that are not substantiated by research cannot be used as evidence to prove the effectiveness of an intervention.

However, several researchers found no evidence that abstinence and faithfulness interventions caused the overall decline of HIV in Uganda. They cite that increased use of condoms and the death of AIDS patients resulted in fewer HIV cases.

Systematic reviews and evidence-based research in this area provide evi-

dence or otherwise of the effectiveness of abstinence and faithfulness in reducing HIV prevalence. A review of U.S. programmes to reduce teenage pregnancy, identified three studies evaluating the impact of abstinence-only programmes found that none of these studies had any effect on sexual behaviour. It can be concluded from the research provided that not only are there question marks over exactly what defines abstinence and what makes it sustainable; there is no clear evidence that it works.

There is no conclusive proof that abstinence-only programmes have been successful in reducing HIV transmission. Evidence is also growing that abstinence-only programmes have failed to prevent the spread of sexually transmitted infections and teenage pregnancy.

In order to give a conclusive answer to whether the abstinence-only approach is effective, a rigorous, five-year evaluation of 11 abstinence-only programmes, conducted in the U.S in 2006 concluded that abstinence-only interventions have failed to change youth behaviour in the USA.

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