

A DIFFERENT VIEW

## Adolescent sexual behaviour and public health: the religion versus science dichotomy

Stephen J Genuis (sgenuis@ualberta.ca)

Clinical Associate Professor, University of Alberta, Alberta, Canada

### Keywords

AIDS, AIDS/HIV, Sexuality, Sexually transmitted disease

### Correspondence

Dr Stephen Genuis, 2935-66 Street, Edmonton Alberta, T6K 4C1, Canada.  
Tel: (780) 450 3504 |  
Fax: (780) 490 1803 |  
Email: sgenuis@ualberta.ca

### Received

7 September 2009; accepted 22 September 2009.

DOI:10.1111/j.1651-2227.2009.01557.x

There are no conflicts of interest. No funds have been received for any part of this work.

It is easier to believe than to think.  
Garet Garrett

### INTRODUCTION

The majority of HIV infections are acquired during the adolescent and young adult years (1). Although condoms used consistently and correctly diminish the risk of HIV transmission (2), Pope Benedict XVI recently expressed disapproval of condom dissemination as a strategy to curb the AIDS crisis. Public health officials and academics throughout the world denounced the religious leader's comments, suggesting that 'science and religion' do not gel and that spiritual leaders should stay out of public health matters. Whereas Richard Dawkins – prominent scientist, atheist and former Professor for Public Understanding of Science at Oxford – suggested that 'the Pope is either stupid, ignorant or dim (3),' editors at *The Lancet* opined that 'Pope Benedict XVI certainly needs to receive some good medical advice (4)' and mused whether his 'error was due to ignorance or a deliberate attempt to manipulate science (5).'

A dichotomy has arisen in academia whereby religious teaching is commonly thought to be primitive, incompatible with evidence and subservient to the emerging deity of science. Some critics perceive religion to be a metaphysical arena that fundamentally rests on blind faith in unsubstantiated dogma – an irrational belief system that

*Articles in the series A Different View are edited by Alan Leviton (alan.leviton@childrens.harvard.edu) We encourage you to offer your own different view either in response to A Different View you do not fully agree with, or on an unrelated topic.*

transcends cogent thought or contradicts tangible evidence. Science, on the contrary, is oft perceived as the penultimate in reality and truth as it rests on the foundations of fact and evidence. However, a difficult situation has arisen as contemporary approaches to AIDS and STI prevention are often predicated on issues of ideology and morality, rather than science and public health.

### EVIDENCE FOR HIV/AIDS PREVENTION STRATEGIES

Despite more than two decades of relentless condomania, rates of HIV/AIDS and other sexually transmitted infections (STIs) have skyrocketed (6). In the UK and Canada, for example, rates of some STIs have doubled or tripled over the last 20 years despite ubiquitous safe-sex education. Numerous large studies have demonstrated that concerted efforts to promote condom use have consistently failed to control rates of STIs (6), even in countries with advanced sex education programmes such as Switzerland and Sweden (7) – nations sometimes considered paragons in progressive sexuality instruction.

In most African nations, the relentless rise in AIDS has devoured innumerable lives, despite the dissemination of millions of rubber prophylactics and ubiquitous condom-centric sexual instruction. In theory, condom promotion is an effective strategy for reducing HIV transmission; in the real world, however, the escalating incidence of HIV and other STIs in the face of repeated and incessant condom education suggests that barrier protection initiatives have not achieved their desired epidemiological impact.

On the contrary, comprehensive attempts to curb sexual behaviour have been remarkably successful in some jurisdictions, including Uganda (6,8,9). Rates of HIV have



precipitously dropped and countless lives have been spared in that country following vigorous educational efforts focused on delayed sexual debut and partner reduction (6,9). The situation in Uganda contrasts starkly with that in other African nations. In Zimbabwe and Botswana, for example, extensive initiatives promoting condom use with resultant higher rates of both condom sales and reported use compared with that in Uganda have met with HIV prevalence rates among the highest in the world (6,10,11).

Reports of diminished STI and HIV rates in countries such as Thailand and Cambodia have reinforced attention on condoms. However, careful scrutiny of data suggests that changes in sexual behaviour (fewer partners, less casual sex and less use of sex workers) after mass educational campaigns contributed more than widespread condom use to the reduction in infection rates in these nations (6).

If condoms have been shown to diminish risk theoretically, why have they not been successful practically at lowering STI rates? (2) The main problem with condoms is that average people, particularly aroused youth, do not use them consistently, regardless of knowledge or education (6,12,13). Epidemiological research repeatedly shows that condom familiarity and risk awareness do not result in sustained safer sex choices in real life (6). Even among stable, adult couples who were HIV discordant and received extensive ongoing counselling about HIV risk and condom use, only 48.4% used condoms consistently (14). For more than two decades, the literature demonstrates again and again that consistent and correct condom use among teens and young adults, the age group where most HIV infection occurs (1), is remarkably low regardless of any educational effort. In review, it appears that when looking at outcomes, the teaching of some religious moralists more closely approximates scientific truth than that of safe-sex enthusiasts.

### PARADOXICAL RESPONSE WITHIN ACADEMIA

Open-minded consideration and civil discourse should prevail within academia. One of the consistent reactions to the presentation of evidence-based information about the success of some behavioural strategies for STI prevention, however, is profound hostility towards the messengers. President Museveni of Uganda and his wife, for example, received heaps of international scorn when they announced that the massive decline in HIV prevalence in their country was related to sexual behaviour change, not condom promotion (15).

Rather than sincere exploration of data and unbiased assessment, many ardent safe-sex advocates appear to reflexively reject, ridicule and express disdain for successful behaviour-based strategies (16). Positive data are frequently disparaged by alluding to meagre results with unrelated, poorly designed abstinence programmes. Furthermore, individuals reporting successful outcomes are often stereotyped with terms such as fundamentalist, right-wing and uneducated. Two obvious questions arise: (i) why does such

opposition exist? and (ii) why are messengers of positive outcomes vilified?

Throughout medical history, facts and science have frequently been rejected despite credible and overwhelming evidence. Semmelweis was ostracized for his findings on the aetiology of puerperal fever (17), Lind was disregarded for discovering the link between dietary deficiency and scurvy (18) and Nobel Prize winners Warren and Marshall were ridiculed after confirming a microbial aetiology for ulcer disease (19). The reasons why emerging science is ignored may be multifactorial, but historical evidence suggests that decisions even in the scientific realm are often based on interests rather than facts.

Economic factors, ideological beliefs, professional pride and personal desire sometimes obstruct fact-based progress. As early as the fourth century, a philosopher named Augustine queried why unfolding truth was often rejected and evoked hatred. After much deliberation, he concluded that people who want what they desire to be the truth will maintain intransigent devotion to their beliefs and doggedly resist facts to the contrary, regardless of any evidence. He stated 'They hate the truth for the sake of that very thing which they have loved instead of the truth (20).' To defend their position, they will frequently attack the messenger.

In fair debate, good ideas come forward. However, it is a well-known strategy in debate circles that when one is losing the argument and the position is endangered, attacking the opponent with ad hominem distractions diminishes the substance of their argument and stifles honest discussion. As Margaret Thatcher once said, 'If they attack one personally, it means they have not a single credible argument left (21).' Such a response has unfortunately characterized the adolescent sexual health issue. As a result of hostility and resistance, scientific progress or lack thereof is often not about science, but about interests and beliefs.

### SUGGESTED APPROACH

The religion versus science discourse has sometimes evoked hostilities by purveyors of competing dogma about what is right and what is truth. Science and religion, however, attempt to answer fundamentally different questions and are not mutually exclusive. The scientific method attempts to document and explain observations within the natural realm – science cannot and does not explain the 'why'. Religion, on the contrary, involves the supernatural and endeavours to answer questions of purpose and meaning. Accordingly, the polarizing situation between morality and science remains a false dichotomy in the STI and AIDS issue. Within the scientific community, the STI pandemic should be investigated and managed as a public health challenge based on evidence and observation of outcomes – it should not be reduced to an ideological issue.

The use of condoms to prevent AIDS strategy has been tried and tested repeatedly, and repeatedly it has failed as a primary strategy. Accordingly, the scientific mirage covering the safe-sex sanctuary needs to be lifted and evidence-based public health strategies should be instituted immediately.

Although factual information about barrier protection should be included in any discussion of HIV/AIDS, narrow condom-focused initiatives should be replaced with comprehensive programmes discussed in the medical literature that have evidence-based success at reducing rates of infection (6,22).

Evidence demonstrates that proactive interventions are able to change attitudes to sexuality and appreciably increase the number of adolescents delaying sexual debut and limiting partners. In association with the approach in Uganda, for example, sexual activity among 13- to 16-year olds in one district of Uganda declined from nearly 60% in 1994 to less than 5% by 2001 (23). Examples of interventions to effect partner reduction by educational initiatives have also met with significant success (22).

After serving as co-director of medical services in an African hospital and subsequently working in adolescent healthcare in a developed nation, the author can attest to the fact that sex, particularly in youth, is a complex matter – sometimes involving power, abuse, survival, loneliness, non-sexual needs, mental health issues, as well as social pressures and expectations (24). Physicians and public health officials may be able to diminish health risk and high-risk sexual behaviour through social and educational interventions (25,26).

### CONCLUDING THOUGHTS

The international community is currently at a crossroads with regard to addressing the STI issue. The United Nations is developing a global initiative for young people on 'sex, relationships and HIV education' to, once again, attempt to curb the HIV pandemic (27). To create the 'demonstrably effective programme for young people (27)' they aspire to achieve, it is important that they move away from unscientific condom-centric education campaigns and implement behavioural strategies that have demonstrated positive scientific outcomes. Paediatricians can do the same.

### References

1. Dehne KL, Riedner G. Sexually transmitted infections among adolescents: the need for adequate health services. *Reprod Health Matters* 2001; 17: 170–83.
2. Steiner MJ, Cates W Jr, Warner L. The real problem with male condoms is nonuse. *Sex Transm Dis* 1999; 26: 459–62.
3. Swaine J. Richard Dawkins says Pope is 'stupid'. April 1, 2009. Telegraph.co.uk. Accessed September 6. <http://www.telegraph.co.uk/news/newstoppers/religion/5088516/Richard-Dawkins-says-Pope-is-stupid.html>. 2009.
4. Condoms and the Vatican. *Lancet* 2006; 367: 1550.
5. Redemption for the Pope? *Lancet* 2009; 373: 1054. Doi: 10.1016/S0140-6736(1009)60627-60629.
6. Genuis SJ, Genuis SK. Managing the sexually transmitted disease pandemic: a time for re-evaluation. *Am J Obstet Gynecol* 2004; 191: 1103–12.
7. Genuis SJ, Genuis SK. Adolescent sexual involvement: time for primary prevention. *Lancet* 1995; 345: 240–1.
8. Stoneburner RL, Low-Beer D. Population-level HIV declines and behavioral risk avoidance in Uganda. *Science* 2004; 304: 714–8.
9. Genuis SJ, Genuis SK. HIV/AIDS prevention in Uganda: why has it worked? *Postgrad Med J* Oct 2005; 81: 615–7.
10. Centres for Disease C. The global HIV and AIDS epidemic, 2001. *MMWR Morb Mortal Wkly Rep* 2001; 50: 434–9.
11. Adetunji J, Meekers D. Consistency in condom use in the context of HIV/AIDS in Zimbabwe. *J Biosoc Sci* 2001; 33: 121–38.
12. Genuis SJ. Are condoms the answer to rising rates of non-HIV sexually transmitted infection? *BMJ* 2008; 336: 185.
13. Madhok R, McCallum AK, McEwan R, Bhopal RS. Students' knowledge and behavior concerning safer sex: a UK study. *J Am Coll Health* 1993; 42: 121–5.
14. de Vincenzi I. A longitudinal study of human immunodeficiency virus transmission by heterosexual partners. European Study Group on Heterosexual Transmission of HIV. *N Engl J Med* 1994; 331: 341–6.
15. Kaiza D. Condoms: why Museveni is no hero in anti-AIDS war. *The East African*. July 21, 2004.
16. de Burger R, McCuaig H. Adolescent sexuality: some questions for Dr. Genuis. *J Soc Obstet Gynecol Can* 1994; 16: 1443–5.
17. Spierer HF, Spierer L. Death and numbers: Semmelweis the statistician. *PSR Q* 1991; 1: 43–52.
18. Bartholomew M. James Lind's treatise of the scurvy (1753). *Postgrad Med J* 2002; 78: 695–6.
19. Marshall B. Helicobacter pioneers: firsthand accounts from the scientists who discovered helicobacters. Victoria, Australia: Blackwell, 2002.
20. Warner R. The confessions of St. Augustine. New York: Penguin Books. 1963.
21. Book of famous quotes. Famous quotes by Margaret Thatcher. Available at: <http://www.famous-quotes.com/author.php?aid=7192>. Accessed on August 25, 2009.
22. Shelton AJ, Halperin DT, Nantulya V, Potts M, Gayle HD, Holmes KK. Partner reduction is crucial for balanced "ABC" approach to HIV prevention. *BMJ* 2004; 328: 891–4.
23. Hogle J, Green EC, Nantulya V, Stoneburner R, Stover J. What happened in Uganda? Declining HIV prevalence, behavior change, and the national response. Washington, DC: U.S. Agency for International Development: Office of HIV/AIDS, Bureau of Global Health, 2002.
24. Cohen MW. Adolescent sexual activity as an expression of nonsexual needs. *Pediatr Ann* 1995; 24: 324–9.
25. Kay LE. Adolescent sexual intercourse. Strategies for promoting abstinence in teens. *Postgrad Med* 1995; 97: 121–7.
26. Genuis SJ, Genuis SK. Teen sex: reality check. Edmonton, Alberta: Winfield House Publishing, 2002.
27. Organization UNE, Scientific and Cultural. Sexuality education. Available at: [http://portal.unesco.org/en/ev.php-URL\\_ID=42114&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/en/ev.php-URL_ID=42114&URL_DO=DO_TOPIC&URL_SECTION=201.html). Accessed on September 3, 2009.