



A SYSTEMATIC REVIEW OF THE EFFECTIVENESS OF 'LIVE' PARTICIPATORY DRAMA IN CHANGING HIV/AIDS RELATED BEHAVIOURS IN DEVELOPING COUNTRIES

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Abstract

Although a huge sums of money and resources have been utilised in the fight against HIV/AIDS worldwide, the pandemic continues to pose a serious threat to the global population. The case is especially severe in developing countries that report a disproportionate burden of HIV incidence and prevalence. In recent years, Entertainment-Education (EE) strategies (the strategic placement of educational content within entertainment messages such as theatre or drama) have been used to promote HIV/AIDS prevention in many countries, including India, Philippines, Tanzania, Nepal, and Peru.

This review is aimed at assessing the effectiveness of HIV / AIDS themed 'live' participatory theatre (EE) in changing HIV - related behaviours in the developing world.

Electronic databases were searched; reference lists were checked; experts and organisations, government bodies and

charities were also contacted in a quest to locate relevant research.

Inclusion in the study was limited to randomised controlled designs, which satisfied all of the following criteria: (1) present a form of theatre in which the audience interact with the actors through dialogue or debate during the performance; (2) present an intervention where the beneficiaries are in 'control' of the construction and acting out of the play, and (3) present an HIV intervention which is face-to-face, rather than 'broadcast' (i.e. radio, TV, internet). Both published and unpublished studies were eligible for inclusion in this review. Studies had to present data from a developing country, and study participants had to be 13 years or older.

In summary, studies are urgently needed to evaluate the effectiveness of 'live', participatory drama in changing HIV-related behaviour(s).

BACKGROUND

Acquired Immune Deficiency Syndrome (AIDS) was first recognised in 1981. The causative virus, Human Immunodeficiency Virus (HIV) was isolated in 1983. There are two types of HIV: HIV-1 and HIV-2. Both types appear to cause clinically indistinguishable AIDS (UNAIDS 2010). HIV causes AIDS by infecting the CD4 cells of the immune system and either destroying or impairing their function. This most commonly occurs during unprotected sexual intercourse (vaginal, anal or oral), through the sharing of needles between injecting drug users (IDU), or from a pregnant mother to her unborn child (ibid).

Prevalence and incidence of HIV/AIDS

In 2007 alone, UNAIDS (2009) reports suggested that globally, there were 2.7 million new infections and an estimated 33 million [30 million – 36 million] people living with HIV. Globally, 2.0 million [1.8 million – 2.3 million] people died due to AIDS in 2007, compared to an estimated 1.7 million [1.5 million – 2.3 million] in 2001(ibid). In virtually all regions outside sub-Saharan Africa, evidence suggests that HIV disproportionately affects IDU, men who have sex with men (MSM), and commercial sex workers (ibid).

Overall, women account for half of all people living with HIV worldwide (at 50%), and nearly 60% of HIV infections in sub-Saharan Africa (ibid). While the global proportion of women among people living with HIV has remained stable in earlier years, recent evidence suggests that the opposite is now the case in many regions of the world (ibid).

Young people aged 15-24 accounted for an estimated 45% of new HIV infections worldwide in 2007 (ibid). Globally, the number of children younger than 15 years (<15) living

with HIV increased from 1.6 million [1.4 million–2.1 million] in 2001, to 2.0 million [1.9 million–2.3 million] in 2007(ibid). Of this number, an estimated 370 000 [330 000–410 000] became infected with HIV in 2007 alone (ibid).

The developing world bears a disproportionate share of the global burden of HIV; research reveals that since the beginning of the epidemic, Sub-Saharan Africa in particular, although representing nine percent of the global population, constitutes approximately 70% of the total HIV-infected cases worldwide and 84% of HIV/AIDS deaths (ibid). In recent years however, there have been disturbing increases in HIV incidence in populous countries in other regions, such as Indonesia, the Russian Federation, and other high-income countries (ibid). While HIV transmission in developing countries is largely through heterosexual sex, other modes of transmission such as IDU, and MSM seem to be the primary drivers of infection within these other regions (ibid).

Description of the intervention

The use of Entertainment-Education (EE) strategies, defined as the strategic placement of educational content within entertainment messages such as theatre or drama, has been described as “the Viagra of health communication” (Piotrow quoted in NEEF and JHU/CCP 2001:2). It has been used to promote HIV and AIDS prevention, family planning, and gender equity in many countries, including India, Mexico, Philippines, Tanzania, Gambia, Nepal and Peru (Singhal & Rogers, 1999, 2001, 2002). The first examples of EE can be traced to a radio show, *The Archers* (in 1951), and a television show, *Simplemente Maria* (in 1969). Although communication scholars were not involved in

the design or the evaluation of the effects of these shows, this soon followed (Singhal et al, 1994). Subsequent to the broadcast of *Simplemente Maria* in particular, Miguel Sabido attempted to deconstruct this telenovela in order to determine its theoretical basis (Singhal and Rogers, 2002). This led to the creation of a series of six EE television programs whose impacts were closely evaluated (Singhal and Rogers, 1999).

In recent years, critics of broadcast EE drama interventions have questioned its effectiveness and sustainability, pointing to its use of a traditional one-way flow model in which campaign beneficiaries are unable to participate (Dutta, 2006; Beltran, 1975, 1980). Participatory 'live' drama, defined in this paper as face-to-face themed community drama, in which the target community participates at each level of the production - i.e. from the acting out of the play to decision-making - has been used to address the above criticism (Storey and Jacobson, 2004). Its proponents argue that it is effective in (1) facilitating a horizontal, lateral communication between participants; (2) promulgating democratic participation, collective empowerment, and sustainability of particular initiatives, and (3) can be tailored to be community specific in terms of content, language and culture (Dagron, 2001, cited in Singhal, 2004:380; Uphoff, 1985; Tufte, 2001; Obregon and Mosquera, 2005:179).

How the intervention might work

Behaviour change interventions have been heralded as being able to successfully reduce HIV risk behaviour (Kelly et al, 1993; Choi and Coates, 1994). Although there are several theories and models which underpin it, e.g., health belief model (Janz & Becker, 1984; Rosenstock et al., 1994); theory of reasoned

action (Fishbein & Ajzen, 1975; Fishbein et al, 1994; Vanlandingham et al, 1995), to name but a few, word limit constraints mean that this study will concentrate on the two models which are most closely linked to Entertainment - Education strategies - Bandura's *Social learning theory* (1986), and Kincaid's *Drama theory* (2002).

Social Learning theory

It appears that contemporary theories of cognition can be used to explain the ability of HIV-themed drama, to increase awareness and facilitate behaviour change. Bandura's social cognitive theory states that most behaviour is learned through modelling or watching the actions of people considered to be role models (1986, 2002a). Within this context, the actors of the dramatic performances become role models, with their actions on stage facilitating behaviour change and providing 'primers' that provide the basis for audiences to discuss and diagnose their socio-cultural and health situations (Bandura, 1986 cited in Panford et al, 2001; 1560). This then enables them to take steps to find solutions to those problems (ibid). However, Bandura argues that modelling or behavioural change through imitation is insufficient on its own, in promulgating change. Rather, he argues that behaviour change through modelling hinges on personal efficacy (Bandura, 1997; 2000; 2006) - "belief in one's capabilities to organise and execute the course of action required to producing given attainments (Bandura, 1997: 3)". This emphasis on human agency is one noted by Smith et al (2007:135) who, citing Bandura (1986) argue that "at its core, social cognitive theory presumes human agency; that people intentionally plan, regulate, and examine their own functioning". More specifically, Bandura states "whatever factors serve as guides and motivators, they are rooted in the core belie

that one has the power to produce desired effects by one's actions, otherwise one has little incentive to act or to persevere" (2002b:270).

Drama Theory

Drama theory is postulated by Kincaid to explain the role of drama techniques in facilitating behavioural adoption. From this perspective, the drama which is successful in facilitating behavioural change, is one which "balances between two equally plausible outcomes: what the audience hopes will happen and what it fears might happen (2002: 138)". This inherent tension, he argues, acts as a catalyst for emotional involvement and identification with characters (Boal, 1979). In turn, this increases the likelihood that the actions promulgated by the character in the drama would be mimicked or adopted by the audience member (ibid). This point is reiterated by Smith et al who note that emotional involvement and identification means that the audience member "correspondingly reframes the problem depicted in the drama and resolves it in the same ways as the drama's characters (2007:136)". This process shares commonalities with the work of Boal (1979) who coined the term 'spect-actor' to describe the "activated spectator, the audience member who takes part in the action (Boal, 1979 cited Singhal, 2004:384)". Similarly, correlations can be made with the work of Green et al (2004 cited in Smith et al, 2007:136) on transportation, where "in a melding of attention, imagery, and feelings, people are transported into a narrative," losing track of time, ignoring their surroundings, exploring feelings and "even a vicarious sense of catharsis (ibid)".

Why it is important to do this review

Although a huge sums of money and resources have been utilised in the fight against HIV/AIDS worldwide, the pandemic

continues to outstrip the efforts being made to contain it – especially in the developed world setting. Citing the "success" of reductions in HIV incidence and prevalence in Uganda and Thailand (Hogle, 2002; Ainsworth et al, 2003), commentators have posited participatory communication paradigms, where 'teacher becomes learner' (Freire & Faundez, 1989), and vice versa, as the panacea to combating the pandemic. Similarly, citing behaviour theories such as social learning (cognitive) theory and drama theory (Kincaid, 2002), proponents of themed drama interventions have heralded it as an effective HIV prevention strategy which is able to permeate the cognitive mindset of publics who are primarily listeners and speakers rather than readers and writers (Ong, 1982). Yet, there have been no systematic reviews that evaluate the effectiveness of HIV-themed 'live' participatory drama – an intervention that combines both participatory paradigms and EE strategies.

In recent months, the adoption of new comprehensive HIV/AIDS strategies by WHO, Global Fund, UNAIDS and the United States of America, provide strong evidence that fighting the scourge of HIV/AIDS is still a huge global policy concern. However, prevention efforts are at greater risk than ever in the current climate of fiscal stringency. This calls for the effective use of finite resources to support interventions that are based on evidence of 'what works'. Thus, it is important to critically and systematically evaluate the effectiveness of participatory or 'bottom-up' HIV-themed drama interventions, which treat the targeted beneficiaries as "agents of change, rather than objects of change (Panos, 2003:19)".

OBJECTIVES

To assess the effectiveness of HIV/AIDS themed 'live' participatory theatre [EE] in

changing HIV related behaviours in the developing world.

METHODS

A systematic review's objective is to comprehensively identify and synthesise research on a particular question or topic, using procedures which are organised, transparent and replicable, at every step of the process (Littell et al, 2008:1). It does this by following a protocol (i.e. a detailed plan) in advance, that specifies (1) explicit objectives and eligibility criteria; (2) search methods which reduce bias; (3) data collection and analysis of quantitative data, where appropriate, from eligible studies, and (4) documents procedures and results (Littell et al, 2008; Moher et al, 1999; Sutton et al, 1998). In the sections below, criteria that were used in the selection of studies, search strategy, methods of data collection and synthesis will be discussed.

Inclusion and exclusion criteria

Types of studies

Certain designs are said to be superior to others depending on the particular question being asked or answered (Higgins and Green, 2006). Randomised controlled trials (RCTs) are considered to be the 'gold standard' for assessing the effects of interventions because they control most threats to internal validity (Shadish, Cook and Campbell, 2002). This explains their usage in most systematic reviews.

For this review, the following types of studies were deemed eligible for inclusion:

RCTs (including cluster randomised trials) that compared participatory theatre with a control were eligible for inclusion. This was imperative if groups were to be comparable

and if treatment effects were to be differentiated from other factors.

Controlled clinical trials (CCTs) that compared participatory theatre with a control were also eligible for inclusion, provided that the intervention and control group were matched on relevant characteristics.

Quasi - experimental designs, such as Interrupted time series (ITS) analysis (i.e. studies in which there are a minimum of three points of data collection before and after the intervention), were eligible for inclusion, provided that a control group was included. Although they are less robust and raise a plethora of validity issues not found in RCTs, ITS analysis allows the assessment of the long-term effects of an intervention, as well as its immediate impact (Cook and Campbell, 1979). This thesis is corroborated by Kalichman et al (1996) who found that intervention effects diminished across studies as time from intervention to follow up increased from 1 to 6 months.

Uncontrolled before-and-after studies will be excluded.

McLeod and Weiss (2004) write that published studies are not necessarily of higher quality than unpublished studies. Dickersin (2005) and Song et al (2000) reiterate this thesis arguing that published literature is often biased toward higher effect sizes. In an effort to reduce these publication and dissemination biases, both published and unpublished studies were eligible for inclusion in this review.

Additionally, only studies that presented data from a developing country (a country whose economy is designated as low income, lowe

middle income or upper middle income, by the World Bank), were eligible for inclusion (World Bank, 2010). Emphasis on these regions are necessary in terms of (1) the disproportionate burden of HIV/AIDS incidence and prevalence (UNAIDS 2009); (2) the significance of oral and storytelling tradition (Ong, 1982), and (3) the lack of access to healthcare information and services (WHO, 2009).

Types of participants

Evidence (on mean age at first sex) gleaned from demographic and health surveys, provided cogent evidence to include studies in which participants were 13 years or older (WHO, 2002; 2006).

Types of intervention

To be eligible for inclusion, the intervention had to satisfy all of the following criteria. It had to be participatory in approach, i.e. (1) present a form of theatre in which the audience interact with the actors or performers through dialogue or debate, during the performance (Boal, 1979); (2) present an intervention where the beneficiaries are in 'real control' of the construction and acting out of the play (Arnstein, 1969), and (3) present an HIV intervention which is face- to- face, rather than 'broadcast' (i.e. radio, TV, internet).

Studies in which 'participatory' theatre was implemented simultaneously with 'broadcast' interventions were not included in the review. This is because it would have made it virtually impossible to isolate the effects of either intervention.

Types of outcome measures

To be eligible for inclusion, studies had to measure some or all of the following outcomes:

Primary

- HIV-1 or HIV-2 infection (incidence), based on laboratory results.

Secondary

- perceived risk of contracting HIV/AIDS
- self-efficacy to negotiate condom use or protect oneself against infection
- reduction in high-risk sexual behaviour
- condom use
- delayed sexual debut

The outcomes were to be assessed at time points common to all trials.

Search

The inclusion and exclusion criteria were used to initiate a broad search of databases for published and unpublished literature. The following databases were searched: MEDLINE, ERIC, LILACS, PsychINFO, Sociological Abstract, Cochrane central Register of Controlled Trials (CENTRAL), EMBASE, Dissertation Abstracts International, Database of Abstracts of Reviews of Effect (DARE), Global Health.

All the searches were conducted with a language restriction (i.e. English) but without a time restriction.

Additionally, the reference sections of included papers were searched for additional citations. If new citations were acquired, they were subsequently appraised to determine whether they satisfied the inclusion criteria. If they were eligible for inclusion in the review, their reference sections were searched once again, for additional citations. This process was iterated until no new papers could be identified.

Hopewell et al (2006) and Higgins and Green (2006) advise hand searching in order to supplement computer database searches and find relevant studies that might not be properly indexed or included in electronic databases. To this end, a hand search of relevant journals was conducted, with the hope of discovering further eligible citations. In addition, experts in the field were contacted to identify ongoing research as well as previous research that had not been gleaned from the computer and hand searches.

ClinicalTrials.gov(<http://clinicaltrials.gov/>) and Current Controlled Trials (www.controlledtrials.com/) were also searched to identify any ongoing trials.

Other relevant websites, in particular, those concerned with HIV/AIDS prevention (UNAIDS, WHO, CDC) were also searched for eligible citations. The results from all searches were subsequently downloaded into a database system.

The following search terms were used to locate the relevant studies: 'live drama' or 'live theatre' or 'live theatre' or 'interactive drama' or 'interactive theatre' or 'interactive theatre' or 'participatory drama' or 'participatory theatre' or 'participatory theatre';entertainment-education; edutainment; enter-educate; or/1-5; HIV*; AIDS*; or/6-7;5 and 8.

Slight modifications of this strategy were used across all databases.

Data collection and analysis

The Project Principal Investigator (JA) independently reviewed the titles, abstracts, and descriptor terms of all studies. Subsequently, JA decided which trials, if any, satisfied the inclusion criteria. Irrelevant

reports and studies were discarded. Where there was uncertainty as to the relevance of a particular study, the full text was obtained. In the event that there was further uncertainty regarding an aspect of the data, the study's authors were contacted for further clarification.

Data extraction and management

No studies were identified for this review. Proposed methods of extraction and management have been archived for future reviews. See appendix 1.

Assessment of the risk of bias in included studies

See appendix 1.

Measures of treatment effect

See appendix 1.

Heterogeneity and subgroup analyses

See appendix 1.

Sensitivity analyses

See appendix 1.

RESULTS

Description of studies

Included studies

No eligible studies were found. If relevant studies are located in the future, the methods prescribed in appendix 1 will be used to analyse findings.

Subsequent to removing duplicates electronically, 73 citations were retrieved for this review. Based on their titles or abstracts JA eliminated most citations. Full texts were reviewed for 7 citations identified through electronic databases. Additionally, JA contacted by email in April 2010, DramAid (Drama in AIDS Education), a South Africa

based organisation that has achieved both national and international recognition for its work in the field of HIV/AIDS education, research and social development. Additionally, experts and practitioners in the field of drama and education were contacted (see appendix 3). No responses were received. A flowchart of the process of trial selection was made in accordance with the QUOROM statement (Moher, 1999). This is evident below.

Risk of bias in included studies

No studies were found that met the inclusion criteria of the review.

Effects of interventions

No studies were found that met the inclusion criteria of the review

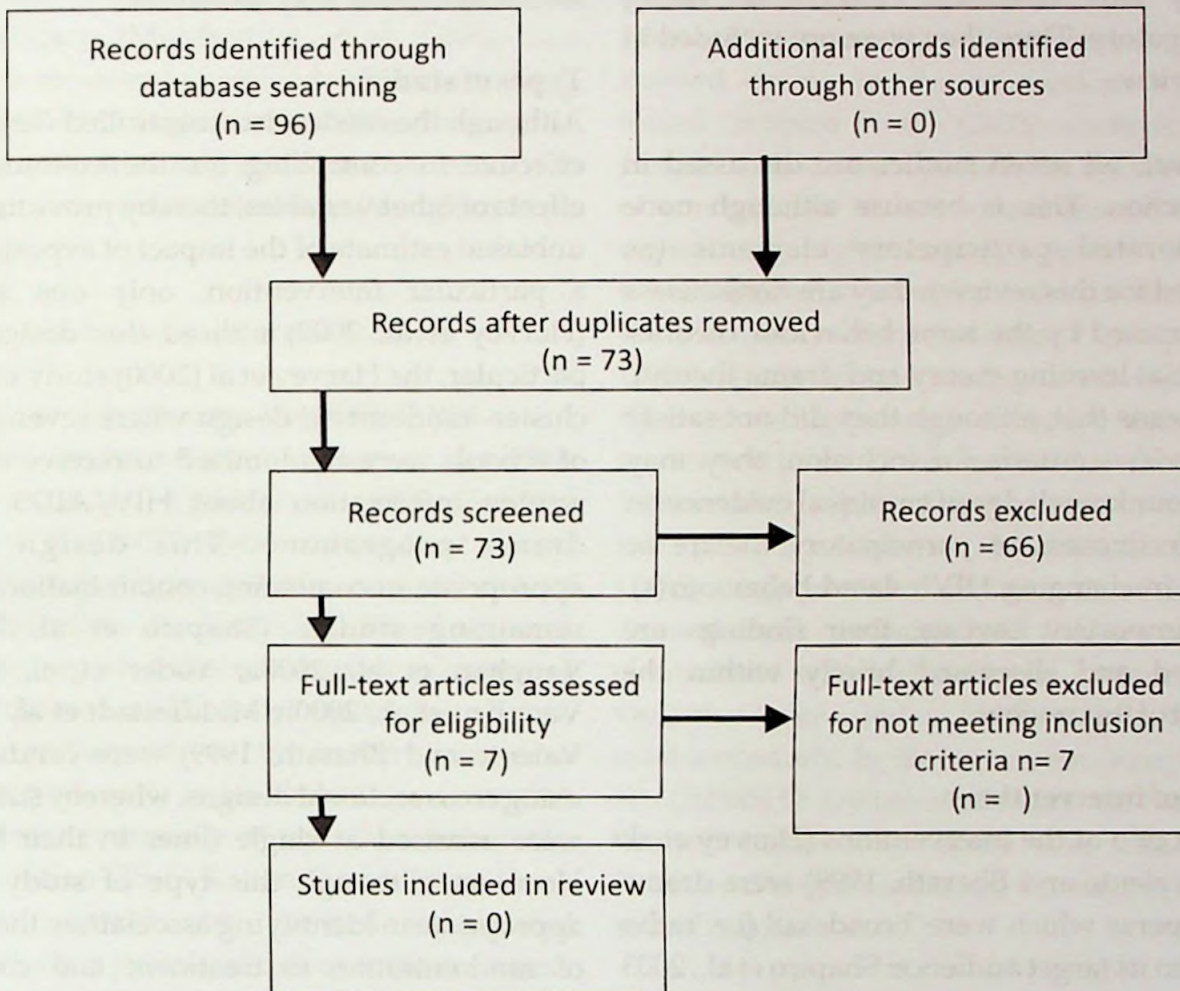


Figure 1: Flow chart of study selection

Excluded studies

Out of the seven full text articles assessed for eligibility, none met the inclusion criteria for the review. Two studies in particular (Harvey et al, 2000; Valente & Bharath, 1999) were initially deemed as includable because they described interventions which were 'live' or occurred face-to-face in the community. However, after making unsuccessful attempts at contacting the authors of the study, as well as reading the text carefully, it was concluded that the approaches utilised in these studies did not satisfy this review's criteria of being participatory. Thus, they were not included in this review.

However, all seven studies are discussed in this section. This is because although none incorporated participatory elements (as required for this review), they are nonetheless underpinned by the same behaviour theories (i.e. social learning theory and drama theory). This means that, although they did not satisfy this reviews criteria for inclusion, they may add to our knowledge of empirical evidence on the effectiveness of participatory theatre or drama in changing HIV related behaviour(s). With important caveats, their findings are reported and discussed briefly within the context of this review.

Types of interventions

All but two of the interventions (Harvey et al, 2000; Valente and Bharath, 1999) were drama soap operas which were 'broadcast' (i.e. radio or TV) to its target audience: Shapiro et al., 2003 (television); Vaughan et al., 2000a (radio); Yoder et al., 1996 (radio); Vaughan et al., 2000b (radio); Middlestadt et al., 1995 (radio). Four of the studies were conducted in Sub-Saharan Africa (Shapiro et al, 2003; Vaughan et al, 2000a; Yoder et al, 1996; Harvey et al, 2000); two in the Caribbean (Middlestadt et al, 1995;

Vaughan et al., 2000b), and one in Asia (Valente and Bharath, 1999). Duration of the interventions ranged from 2 months to 79 months. None of the studies met the review's criteria of being participatory, i.e: (1) it must present a form of theatre in which the audience interact with the actors or performers through dialogue or debate, during the performance; (2) it must present an intervention where the beneficiaries are in 'control' of the planning, construction and acting out of the play, and (3) it must present an HIV intervention which is face to face rather than broadcast.

Types of studies

Although the randomised controlled design is effective in controlling for the co-founding effects of other variables, thereby providing an unbiased estimate of the impact of exposure to a particular intervention, only one study (Harvey et al, 2000) utilised this design. In particular, the Harvey et al (2000) study used a cluster-randomised design where seven pairs of schools were randomised to receive either written information about HIV/AIDS or a drama programme. This design was appropriate in combating contamination. The remaining studies (Shapiro et al, 2003; Vaughan et al, 2000a; Yoder et al, 1996; Vaughan et al., 2000b; Middlestadt et al, 1995; Valente and Bharath, 1999) were conducted using cross sectional designs, whereby subjects were accessed at single times in their lives. However, although this type of study was appropriate in identifying association, the lack of randomisation to treatment and control groups meant that establishing cause and effect was more difficult. All but one of the studies (Harvey et al, 2000) used 'no treatment' rather than an alternative intervention as a control.

A detailed list of the excluded studies (detailing settings, target, duration and frequency, sample size and reasons for exclusion) can be found in appendix 2.

Types of outcome measures

Although none of the seven evaluations measured the primary outcome - HIV incidence - they included outcomes which are of interest to this review. Four studies measured condom use (Shapiro et al, 2003; Harvey et al, 2000; Middlestaat et al, 1995; Vaughan et al, 2000b); one study measured self-efficacy (Middlestaat et al, 1995); two studies measured perceived risk of contracting HIV/AIDS (Vaughan et al, 2000a; Yoder et al, 1996), and one study measured the reduction in high risk sexual behaviour (Vaughan et al, 2000a).

The results by outcome are as follows.

Perceived risk of contracting HIV/AIDS

Studies conducted by Vaughan et al., 2000a (Tanzania) and Yoder et al. 1996 (Zambia) suggest that HIV-themed broadcast drama interventions increase the perceived risk of HIV infection. In particular, Vaughan et al (2000a) reported that subsequent to 2 years of HIV themed radio soap opera broadcasts, study participants in the intervention arm were significantly more likely to perceive that they were personally at risk than before the intervention (55-61%). On the contrary, those in the control arm showed substantial reductions in perceived risk over the same time period (72-55%). Similarly, Yoder et al (1996) reported that those exposed to a radio drama displayed significantly higher perceived risk of contracting HIV/AIDS in comparison to those who were not exposed (30% versus 21%).

Self-efficacy

Middlestadt et al's (1995) study suggested that subsequent to being exposed to an HIV themed radio drama, there were increases in having the confidence to protect oneself from getting infected with HIV/AIDS. In particular, those who were exposed to the intervention were more likely to believe that they could protect themselves from HIV acquisition (97.7%), than those who were not exposed (86.2%), $2(1, N=297) = 13.54, p < 0.001$.

Condom use

The evidence on the effectiveness of HIV themed drama to change condom use was mixed. Shapiro et al's (2003) study in Ivory Coast, West Africa, reported that the likelihood of condom use at last sexual encounter was significantly higher amongst publics who had been exposed to more episodes of the 'SIDA dans la Cite' television drama. Harvey et al's (2000) South African study corroborated this thesis, showing that sexually active high school students who had been exposed to the drama intervention, reported an increase in condom use ($p < 0.001$). However, Middlestadt et al's (1995) study provided evidence that their HIV themed radio campaign in St Vincent and the Grenadines was ineffective in changing the variables 'ever used a condom' and 'always used a condom'. In the same vein, Vaughan et al's (2000b) St Lucian study showed that HIV themed radio soap opera was unable to facilitate changes in condom use among men in sexual unions.

Reduction in high-risk sexual behaviour

Vaughan et al's study (2000a) provided evidence that exposure to HIV themed radio soap opera was effective in producing small but significant reductions in the number of sexual partners by both men (0.7%) and women (0.7%) in the previous year.

Potential risk of bias

In summary, the results from related programs provide some evidence of the positive impacts of HIV themed drama in changing some of the secondary outcomes which are of interest to this review. Nonetheless, it is imperative that outcomes are interpreted cautiously. This can be attributed to (1) the low volume of studies available, and more importantly (2) the lack of rigorous research designs used within the studies. This means that there is a high likelihood that their results are likely to overestimate the treatment effect. With the exception of Harvey et al., 2000 (which used a randomised controlled design), all the other studies employed relatively weaker designs which may have introduced bias and affected the validity of the results. For example, Yoder et al's (1996) study in Bemba speaking Zambia found that a radio serial drama had positive impacts on knowledge, attitudes and behaviours. However, a serious contamination of the control group may have introduced bias which will have affected the validity of the results. Similarly, Middlestadt et al's (1995) St Vincent study found that radio advertising increased (1) self efficacy with respect to preventing the acquisition of HIV infection; (2) interpersonal communication regarding condom use, and (3) normative beliefs concerning condom use among peers. However, this retrospective study may have suffered a threat to validity because of its use of a small sample size. The lack of rigorous evaluations, such as RCTs within these studies can be attributed to the fact that the interventions were 'broadcast'. As such, it was not feasible to assign subjects randomly to treatment or control groups. On the contrary, Harvey et al's study (2000) was successful in utilising a strong research design (i.e. cluster randomised trial) because the intervention was 'live' or face - to - face, rather than broadcast.

However, the approach utilised was not deemed to be participatory (according to the criteria of this review). Also, this study suffered a few threats to its validity. For instance, as the questionnaires specifically excluded personal identifies which ensured anonymity (but probably facilitated the high response rates), it was impossible to link pre and post intervention data at the individual level. Also, bias may have been introduced to the study through the high attrition rate and use of outcome measures relying exclusively on self reporting.

Thus, caution is also necessary because all the outcomes of the studies relied exclusively on the indirect measures of self reporting. Evidence suggests that the sensitivity surrounding sexual acts and behaviour usually mean that there is a propensity (conscious or unconscious) to overstate or understate results (MAPC, 2000; NCHADS, 2002 cited in WHO, 2006). Although in recent years, techniques such as carefully designed questionnaires have been developed to optimise the validity of self-reports, questions still remain about the validity of results gleaned exclusively from self reported behaviours. To this end, biological measures such as HIV incidence (which was the primary outcome of this review) might seem more appropriate if a stronger evidence of the effect on behaviour is to be obtained. For example, a study in Tanzania found significant differences in behaviour, utilising different methods of evaluation (MAPC, 2000 cited in WHO, 2006). During structured interviews or on self-completed questionnaires, most women denied having engaged in any form of sexual activity. However, many displayed markers of sexual activity, such as pregnancy or a sexually transmitted infection (STI). In subsequent in depth interviews, most admitted to having being engaged in sexual

activity. None of the studies measured this HIV incidence as an outcome. However, measuring HIV incidence as a primary endpoint or as a complement to other outcomes is essential, if stronger evidence of the effect on behaviour is to be obtained.

Finally, outcomes must be interpreted with caveats because most of the behavioural outcomes were not measured consistently across the studies. For instance, condom use is measured as "ever, always, never used", "condom use at last sex with non-commercial partner", "condom use at last sex with commercial partner", "always used a condom over last 12 months", "likelihood of condom use at last encounter", to name but a few. In order to be certain that like outcomes have been pooled, behavioural outcomes have to be operationalised across studies (WHO, 2006).

CHAPTER 4: DISCUSSION

No RCT, CCT or quasi-randomised trials were found. Consequently, no studies could be included in this review. This means that there is no reliable evidence concerning the effectiveness of participatory drama to changing HIV related behaviour(s) in the developing world.

Strengths of the review

This is the first systematic review conducted which assesses the effectiveness of participatory drama in changing HIV related behaviour(s). A definite strength of this review can be attributed to its systematic nature, whereby the objective is to comprehensively identify and synthesise available research using procedures which are organised, transparent and replicable, at every step of the process (Littell et al, 2008:1). This means that there is transparency concerning how studies

are selected, assessed and integrated (*ibid*). Littell et al (2008) note that, systematic reviews appear at the apex of the hierarchy of evidence that informs evidence based practice. Thus, when well conducted, systematic reviews are able to provide the same rigour in secondary research as is expected from primary research (*ibid*). This means that it provides the best possible estimate of any true effect and/or elucidates areas of research where there is a paucity of evidence. This review also benefited from a highly sensitive literature search. This could be attributed to the spectrum of 'type of studies' which were made eligible for inclusion, ranging from RCTs to CCTs and quasi experimental designs. Furthermore, attempts were made to minimise or eliminate publication bias. This was achieved by employing a comprehensive search strategy which extended inclusion eligibility to relevant published and unpublished evidence.

Limitations of the review

An obvious limitation of this review can be attributed to the lack of studies found. However, this provides cogent evidence of a paucity of rigorous studies which assess the effectiveness of participatory drama to changing HIV related behaviours.

Recommendations for future research

The lack of eligible studies for inclusion in this review means that the recommendations for future research might be the most valuable aspect of this investigation. It is hoped that the following suggestions, based on reflections from this review, will help guide future research.

Short-term

A RCT is generally regarded as the strongest of all research designs when a cause and effect relationship needs to be established (Jadad and Enkin, 2007). However, they are generally

expensive and complex undertakings. Thus, although in this respect (i.e. internal validity or cause and effect assessment), a non experiment is generally perceived as the weakest of research designs, it is appropriate if (1) the objective is to gather evidence, and (2) there are monetary constraints. Thus, in the short - term, it might be advisable to conduct the simplest form of non-experiment, such as the one shot survey design. The survey instrument will measure personal characteristics, HIV/AIDS information sources, knowledge about HIV/AIDS, and the practice of HIV/AIDS preventative behaviours. Psychosocial factors such as self- efficacy in protecting oneself from HIV/AIDS and the perceived risk of HIV/AIDS acquisition will also be measured. Changes in these psychosocial factors are generally perceived to influence sexual behaviours such as abstinence, a reduction in sexual partners and condom use (Piotrow et al, 1997). Eligible respondents would be those who are sexually active.

However, although surveys might be appropriate - in terms of cost-effectiveness - making inferences at the cause and effect level is virtually impossible (Bryman, 2008). Thus, experimental or quasi- experimental research which transcends exploratory evidence is needed.

Long-term

Promote randomised controlled trials which evaluate the effects of HIV themed participatory drama in changing HIV related behaviours.

This review constitutes the most sensitive and extensive search to date which evaluates the effectiveness of HIV themed participatory drama to changing HIV related behaviour(s). Surprisingly however, not even one randomised trial was identified.

It is unclear as to whether this paucity of evidence reflects a broad assumption that HIV themed participatory drama is ineffective in changing HIV related behaviour and /or whether it is attributable to a scarcity of resources which are necessary for high quality evaluations. Whatever the reasons may be, there is a general consensus that RCTs are the 'gold standard' for assessing the causal relationships between interventions and their outcomes because they control most threats to internal validity (Shadish, Cook and Campbell, 2002). Thus, in the long-term, randomised designs (preferably) are needed to evaluate the impact of HIV themed participatory drama on HIV related behaviour(s). Similarly, the Cluster randomised trials (CRT) might be more appropriate in situations where the unit of randomisation is at the group or 'cluster' level. This would avoid contamination effects (Torgersen, 2001). In the absence of procuring funding to conduct RCTs, CCTs and/or quasi-experimental designs will suffice, in the short term.

Extend follow - up data collection

Many studies do not collect data beyond the immediate end of the intervention. This flawed practice may mean that trials are at the risk of committing a type II error, i.e. the program is deemed as being ineffective when in fact more time was needed to procure or ascertain certain effects. It is imperative that studies allow the assessment of the long-term effects of an intervention, as well as its immediate impact (Cook and Campbell, 1979). This idea is reiterated by Panos (2003:32) who state:

The most effective strategies against HIV/AIDS are often those where results only emerge over long periods of time. Funding in the past has generally focussed on those strategies where short-term impact can be

easily measured. Strategies where results can be measured in the short term are not those which will necessarily have the greatest long-term impact.

Alternatively, collecting data beyond the immediate end of a program is imperative if program effects which are not able to be sustained overtime are to be identified. This thesis is corroborated by Kalichman et al (1996) who found that intervention effects diminished across studies as time from intervention to follow up increased from 1 to 6 months.

Despite the obvious benefits (as stated above) of extending follow-up data, implementation is impeded by some challenges. The most common among them concerns wait list control groups. This is because once a control group enters an intervention, there is a loss of the counterfactual, meaning that the experimental evaluation is then discontinued. Although the appropriateness or need for wait-list control group can not be denied in many circumstances, it is imperative that when possible, they are avoided. If this is not possible or feasible, for whatever reason, then extending the time before the wait-list control group participates might be the best alternative.

Conduct implementation fidelity alongside HIV evaluations

Implementation fidelity is often referred to as adherence or integrity. Despite this diverse nomenclature, its meaning remains the same: the degree of fit between the developer-defined elements of an intervention and its actual implementation in a given community setting (CASP, 2001). The significant role in which fidelity plays in providing positive outcomes is acknowledged by many authors (Kumpfer et al, 2002; Elliot and Milhalic, 2004;

Backer, 2001; Tobler and Statton, 1997; Dane and Schneider, 1998). Elliot and Milhalic (2004:51) argue that "fidelity is related to effectiveness and bargaining away of fidelity will most likely decrease program effectiveness". Backer (citing Jason et al, 1984) echoes this sentiment, arguing:

The ultimate goal is to maintain the basic integrity of a program model while matching the innovation to the unique features of the setting and preferences /reactions of the relevant setting (2001:43)'.

This thesis is also reiterated in one of the largest meta-analyses of school based substance abuse prevention programs (Tobler and Stratton, 1997) where the authors write:

The large decreases in effectiveness experienced when delivered on a large scale suggests factors other than statistical levelling of effect sizesImplementation factors provide a more probable explanation and can be a crucial mediating factor in determining success (p114).

Conducting implementation fidelity studies alongside evaluations of HIV themed participatory are necessary if one is to ascertain whether an outcome is caused by an intervention or poor implementation of the intervention model (Dane and Schneider, 1998). This is more so in the case of HIV themed participatory drama where variability is easily possible in terms of **exposure** (i.e. number, length or frequency of sessions), **quality of program delivery** (i.e. the manner of delivery of program) and **participant responsiveness** (i.e. the extent to which participants are involved in the activities and content).

Avoid, identify and measure contamination effects

Contamination (i.e. 'spillover' or 'diffusion') effects occur when members of the control group are exposed to the treatment intervention and/or vice versa, either by direct exposure or indirect exposure (Hayes, 2009; Torgerson, 2001). Direct contamination occurs when the control group actually receives the treatment or intervention (ibid). On the contrary, indirect contamination generally occurs when control group participants are influenced by contact with the intervention group (ibid). Thus, interventions that are delivered at institutions or small geographic units where subjects of different arms are in close proximity and information is shared are more prone to contamination (ibid). For instance, in a RCT where secondary school students are randomly allocated to receive individual counselling to help them quit smoking or to a control group, students in the intervention group may talk to friends in the control group, thereby influencing the behaviour of the control group. This will likely dilute the difference between the different groups' outcome and bias the statistical estimates. (Hayes et al, 2009). Also in medical practice trials, contamination can occur during the delivery of the intervention. This occurs particularly when blinding is not feasible; health practitioners may have difficulty turning on and off the treatment intervention and this may dilute the study results.

Contamination of control participants may reduce the point estimate of an intervention's effectiveness (Torgerson, 2001:355). This apparent reduction may lead to a type II error, whereby an effective intervention is rejected as being ineffective because the observed size was neither statistically nor clinically significant (ibid).

Avoidance or circumvention of contamination effects, a problem in many individually-randomised trials, is achievable if randomisation is conducted at the 'group' or 'cluster' level (i.e. schools, classes, or neighbourhood committees). The caveat, however, is that because CRTs are designed and randomised at the group level, member of clusters cannot be treated as statistically independent (Torgerson, 2001). This violates the traditional assumption of RCTs - that all individuals are independent- and leads to a need to increase its sample size. This is because, for any given sample size, the intra-cluster correlation will reduce the overall power of the study (Torgerson, 2001; Hayes et al, 2009; Elley et al., 2004). Furthermore, cluster trials can often be susceptible to selection bias. This is because in CRT's the researchers often know the allocation of treatment and control groups prior to the recruitment of subjects. Knowledge about this allocation beforehand has a likelihood of influencing who is selected into the trial in each group. This may introduce selection bias, and can affect the internal and external validity of a study. (Elley et al, 2004).

Thus, it is imperative that investigators take the necessary steps to avoid contamination effects. If this cannot be achieved, it is essential that contamination effects which occur in trials are identified, measured, and reported.

Improve study reporting

Many authors were contacted to clarify missing methodological information (e.g. missing information concerning the randomization process, whether allocation concealment was achieved etc). Clarification was also needed where there was missing data (e.g. duration and /or frequency of intervention; whether the effects were negative or positive and/or significant or non significant). To aid comparability across

studies, it is imperative that future drama interventions include detailed descriptions of the intervention under study (e.g. story content), duration, reach, frequency and underlying theoretical principles. It is also essential that there is a convergence towards a common list of outcomes and behaviours.

Similarly, many study titles and abstracts did not index components of the trial (e.g. nature of intervention, target population, sample size or study design) correctly or accurately. This increases the likelihood that potentially relevant studies might be overlooked when conducting systematic reviews.

To rectify these flawed practices, investigators should be advised to consult resources such as the Critical Appraisal Skills Program tools (CASP, 2001) or the CONSORT statement for reporting experimental trials (Schulz et al, 2010).

Conduct interventions which are culturally or locally appropriate

Given the important role of oral tradition and storytelling in the developing world context, HIV themed community drama can be perceived as a culturally appropriate tool in changing HIV-related behaviour(s). Culture is defined by Hall as the general system of values, norms, practices, ways of life, and worldviews shared by a group of people, which is learned and transmitted through participation in group life (1980). The integral role it plays in the life of an individual is succinctly described by Bower (1984:36), who states:

the authority that culture exercises over us... are internalized in such a way that the person under its sway experiences it as part of the natural order of things.

Bronfenbrenner's (1979) ecological systems theory corroborates this thesis. From this

perspective, culturally appropriate interventions are those which are successful in moving beyond *surface structure* (changing the ethnicity or the appearance of role models), to *deep structure*, by addressing the core values, beliefs, norms, and other more significant aspects of the cultural group's world views and lifestyles (Resnikow *et al*, 2000). This results in higher recruitment and retention rates (Sue, 1998; Cunnigham *et al*, 2000) and improves engagement and understanding of intervention (Lau, 2006). Griner and Smith's (2006) meta-analytic review of 76 culturally adapted mental health interventions substantiates this thesis. It found that the random effects weighted average effect size was $d = 0.45$, indicating a moderately strong benefit of culturally adapted interventions.

Incorporate participatory strategies in HIV/AIDS prevention

No RCTs, CCTs or quasi-randomised trials which assessed the effectiveness of HIV themed drama/theatre in changing HIV limiting behaviour(s) were found. Consequently, no studies could be included in this review. However, a number of excluded studies which assessed the role of HIV themed drama to changing HIV limiting behaviour(s) were of particular relevance to this review. The caveat, however, was that the studies assessed HIV themed 'broadcast' drama (i.e. broadcast over radio, television or the internet), rather than participatory drama. The latter have the propensity to be face to face, interactive and community based. Furthermore, it involves the local beneficiaries.

Critics of the EE thesis attribute this relative abundance of 'broadcast' EE interventions (in comparison the dearth of participatory EE studies) to the covert objectives of most funding agencies (Dutta, 2006). In particular, critics posit that whilst the overt objectives (e.g.

reduction in HIV incidence and prevalence) of agencies such as USAID are well stated in the literature, their broader interests (i.e. to serve as channels which advertise or introduce the commercial logic in the developing world setting), are well hidden (ibid; Dutta-Bergman, 2004). Dutta reiterates this thesis stating:

EE programs serve as the tools of globalization and transnational capitalism that impose a monolithic set of core values on other parts of the world and that open up the doors of countries suffering from starvation and poverty to commercial products of the free market economy (2006:224).

Refutation of this thesis which is promulgated by EE critics, hinges on the ability of future EE programs to be 'bottom - up' or participatory, thereby challenging the elitist or expert led approaches which construct knowledge and praxis from the top. Participatory in this sense is the antithesis of Schein's (1961) concept of coercive control, whereby participation acts as a tool which changes rather than raises consciousness. Looking at Arnstein's ladder of participation (Figure 2) below, participation in this sense, also means more than manipulation or therapy (rungs 1&2) or informing, consultation or placation (rungs 3,4,5), which typify previous and existing expert-led HIV/AIDS campaigns (Panos, 2003). Rather, 'real' participation pertains to placing local stakeholders and beneficiaries inside the realm of universal knowledge production and control (rungs 6,7&8).

In summary, participatory approaches in HIV/AIDS prevention are needed. This is because they refrain from viewing local stakeholders as docile bodies without agency (Escobar, 1995; Seckinelgin, 2002:123). In this sense, participatory approaches allow local stakeholders to become 'agents of change

rather than objects of change (Panos, 2003)'. This approach offers an important portal for alternative conceptualizations for HIV/AIDS prevention. Storey and Jacobson echo this thesis noting:

Participatory communication is both a means to behaviour change as well as a desired end-state of its own... people are better able to make decisions that affect their lives (2004: 430).

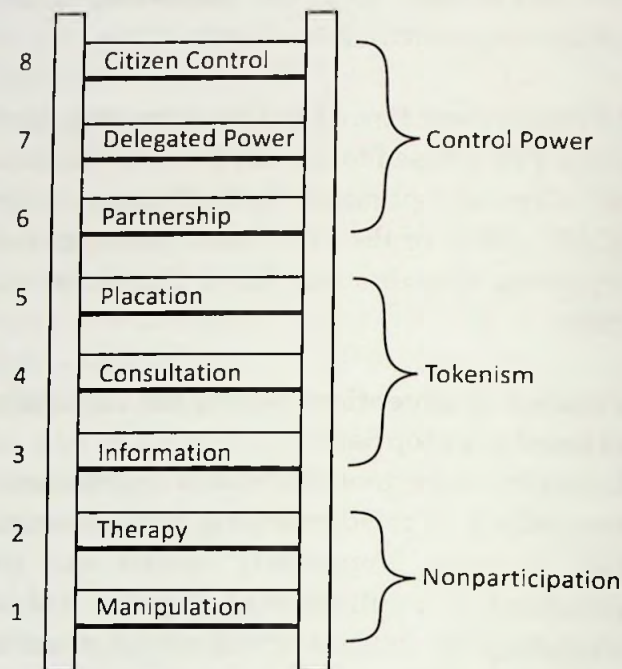


Figure 2: Arnstein's ladder of participation
Source: Arnstein 1969:217

AUTHORS CONCLUSIONS

Implications for practice

The primary objective of this study was to report the state of evidence on the effectiveness of HIV themed participatory drama or theatre to changing HIV related behaviour(s). However, no RCTs, CCTs or quasi-randomised trials which assessed the effects of HIV themed participatory drama or theatre to

changing HIV related behaviour(s) were found. Consequently, no studies could be included in this review. Thus, in so far as policy and practice is based on evidence of 'what works', this review finds no robust or causal evidence which supports or refutes the thesis that HIV themed participatory drama or theatre is successful in changing HIV related behaviour(s).

However, the fact remains that beside a few notable successes (e.g. Uganda and Thailand) the HIV/AIDS epidemic continues to be propagated across countries and continents at an alarmingly rapid rate (Ainsworth et al, 2003; Hogle, 2002). In 2007 alone, UNAIDS (2009) reports suggested that globally, there were 2.7 million new infections and an estimated 33 million [30 million – 36 million] people living with HIV. In light of these dismal figures, I believe there is a need to reassess current HIV/AIDS prevention strategies, especially in the developing world – an area which bears the brunt of the pandemic. In particular, it is important to acknowledge that the few “successes” in Uganda and Thailand were attributable to approaches which promulgated a sense of ownership by being participatory, and as such, rooted within local contexts (Ainsworth et al, 2003; Hogle, 2002; Panos, 2003). Thus, despite the dearth of evidence to support the participatory thesis in changing HIV-limiting behaviour, it is important to recognise that inclusion of beneficiaries at all levels of decision-making is a fundamental democratic right. In this sense, participatory approaches are an 'end in itself' (Hanchett, 1997). This means that policy needs to do more to allow the views of the beneficiaries to be articulated within policy discussions which shape their societies and its inherent problems. Hanchett echoes this need for participation and ownership, stating: “responsibility for

planning inspires personal commitment to the outcome....such commitment is often spoken of as ownership” (1997:278/79). The assumption here is that seeing a project from a perspective that is 'ours' rather than 'theirs' (Awa, 1994:3), then facilitates positive action (Hanchett, 1997; Kuper, 1997), and this might lead to the adoption of positive sexual behaviour, acquisition of HIV/AIDS knowledge or a reduction in behaviour which stigmatises HIV/AIDS infected persons. Similarly, Sarvaes and Malikhao note:

There is possibly a valid reason why we have two ears, but only one mouth. Communication between people thrives not on the ability to talk fast but the ability to listen well; participation, which necessitates listening and moreover trust, will help reduce the social distance between communicators and receivers, between teachers and learners, between leaders and followers as well as facilitate a more equitable exchange of ideas, knowledge, and experience (2005:91).

Furthermore, HIV themed 'live' or participatory drama as an educational medium in particular, has many advantages. This include: (1) its ability to retain the immediacy of interpersonal contact, (2) its ability to be understood by publics with high illiteracy rates or low levels of formal schooling; (3) its ability to be cost effective in terms of one performance reaching a group of people, and (4) its ability (unlike broadcast interventions) to reach populations without access to electricity or mediums of telecommunication. Also, given the significance of oral tradition within the developing world, with audiences who are mainly listeners and speakers, rather than readers and writers (Ong, 1982), the ability of drama to be culture and community specific and yet context sensitive cannot be

undervalued. In this sense, participatory drama interventions can be used alone, or as part of an armamentarium of prevention strategies which include condom distribution and voluntary counselling and testing programs.

Implications for research

In Panos (2003), the authors note:

there is a real fear that if the current mobilization against HIV/AIDS fails, then humanity will, as it has done in the past, turn its back on one of the gravest public health crises in humanity history (2003:1).

Before the horse bolts, however, it is imperative that the public health community gets back into the saddle. This review addresses an important question for HIV/AIDS program managers, donor agency staff, HIV/AIDS researchers and others: to what extent do participatory paradigms such as participatory drama impact HIV/AIDS

related behaviours? Rigorous and robust interventions are urgently needed to answer this question. However, it is imperative that the interventions which are conducted depart from previous models which place emphasis on simple indicators and short-term results. Rather, future studies should place emphasis on long-term results and long-term change (Panos, 2003). This is more so at a time of fiscal stringency where there is an urgent and practical imperative that as much "bang for the buck" (i.e lowest cost per person reached or outcome influenced) is procured, coupled with an ethical imperative that interventions are doing more good than harm (ibid). However, it is essential that this sense of urgency is not misconstrued as a need for emergency responses which will bring immediate results. This is because HIV/AIDS is a long-term and complex problem; its characteristics - caused by a virus which takes up to 10 years between infection and the presentation of symptoms - provide evidence of this fact.

REFERENCES

BIBLIOGRAPHY

- AINSWORTH, M., BEYRER, C. & SOUCAT, A. (2003) AIDS and public policy: lessons and challenges of 'success in Thailand', *Health Policy* 64(1).
- ARNSTEIN, S., R. (1969). *A ladder of citizen participation*, *Journal of the American Planning association*, 35:4, 216-224.
- AWA, N., E. (1994). *Participation of Beneficiaries in Rural Development as the Key to Sustainability*. Paper presented at the 19th IAMCR Scientific Conference and General Assembly, Seoul, Korea.
- AWASABO-ASARE, A. (1995). *Health Transition Review, Supplement to Volume 5, 1995, 229-236*.
- BACKER, T. E. (2001). *Finding the*

Balance – Program Fidelity and Adaptation in Substance Abuse Prevention: A State-of-the Art Review. Center for Substance Abuse Prevention, Rockville, MD.

BANDURA, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Upper Saddle River, NJ: Prentice Hall.

BANDURA, A. (1997). *Self-efficacy: The exercise of control.* New York: Freeman.

BANDURA, A. (2000). *Exercise of human agency through collective efficacy.* *Current Directions in Psychological Science*, 9, 75-78.

BANDURA, A. (2006). *Toward a psychology of human agency.* *Perspectives on Psychological Science*, 1, 164-180.

BELTRAN, L. (1975). *Research ideologies in conflict.* *Journal of Communication*, 25, 187-193.

BELTRAN, L. (1980). A farewell to Aristotle: "Horizontal" communication. *Communication*, 5, 5-41.

BOAL, A. (1979). *The theatre of the oppressed.* New York: Urizen Books.

BRONFENBRENNER, U. (1979). *The Ecology of Human Development: Experiments by Nature and Design.* Cambridge, MA: Harvard University Press.

BRYMAN, A. (2008). *Social research Methods.* (3rd ED) Oxford University Press.

CASP (2001). *Finding the balance.* Available at: www.phru.nhs.uk/doc_links/rct%20appraisal%20tool.pdf. (last accessed 22 / 6 / 2010).

CHOI, K.H & COATES, T.J. (1994). Prevention of HIV infection. *AIDS*, 8, 1371-1389.

CONANT, M. (2004) Losing the war on AIDS. *Journal of the American Academy of Dermatology* 51(1 Suppl):S47-48.

COOK, T.D. & CAMPBELL, D.T. (1979). *Quasi-Experimentation: Design and Analysis for Field Settings.* Rand McNally, Chicago, Illinois.

CRAWFORD, J., TURTLE, A. and KIPPAX, S. (1990) Student favoured strategies for AIDS avoidance, *Australian Journal of Psychology* 42, pp. 123-127.

DAGRON, G.A. (2001). *Making waves: Stories of participatory communication for social change.* New York: Rockefeller Foundation.

DANE, A.V. & SCHNEIDER, H.B. (1998). *Program integrity in primary and early secondary prevention: are implementation effects out of control?* *Clinical Psychology Review*, Volume 18, Issue 1, January 1998, Pages 23-45.

DUTTA, M. J. (2006). *Theoretical Approaches to Entertainment Education Campaigns: A Subaltern Critique,* *Health Communication*, 20: 3, 221 – 231

EISER, J.R and VAN DER PLIGT, J. (1988). *Attitudes and Decisions.* London: Routledge.

ELLEY, R., CHONDROS, P. & Kerse, N.M. (2004). *Randomised trials – cluster versus individual randomisation.* *Australian Family Physician*; 3; 17-24.

ELLIOT, D. S., and MIHALIC, S. (2004). Issues in disseminating and replicating effective prevention programs. *Prevention Science*, 5(1), 47-53.

EYSENBACH, G. (2000) *Recent advances: Consumer Health Informatics.* *BMJ* 320: 1713-16.

FINNEGAN, Jr., J.R., and VISWANATH, K. (1990) *Health and communication : Medical and public health influences on the research agenda.* In: E. B. Ray, and L. Donohew (eds) *Communication and Health: Systems and Applications.* Hillsdale, NJ: Lawrence Erlbaum Associates.

- FISHBEIN, M., & AJZEN, I. (1975). *Belief, attitude, intention, and behaviour: An introduction to theory and research*. Reading, MA: Addison-Wesley.
- FISHBEIN, M. and GUINAN, M. (1996). *Behavioural science and public health: A necessary partnership for HIV prevention*. Public Health Reports, 3 (Suppl.1), 5-10.
- FREIRE, P. and FAUNDEZ, A. (1989). *Learning to question: A pedagogy of liberation*. Geneva; World Council of Churches.
- GRINER, D. & SMITH, T.B. (2006). Culturally adapted mental health interventions: A meta-analytic review. Brigham Young University. Vol. 43, No. 4, 531-548.
- HANCHETT, S. (1997). *Participation and Policy Development: the Case of the Bangladesh Flood Action Plan*. Development Policy Review. 15, 277-296.
- HARVEY, B., STUART, J., & SWAN, T. (2000). Evaluation of a drama-in-education programme to increase AIDS awareness in South African high schools: a randomized community intervention trial. *International Journal of STD & AIDS*, 11:105-111.
- HAYES, R.J. & MOULTON, L.H. (2009). *Cluster Randomised Trials*. CRC Press.
- HOGLE, A. J. (ed.) (2002) *What Happened in Uganda: Declining HIV Prevalence, Behaviour Change and the National Response*, USAID Report.
- JADAD, A. R., & ENKIN, M. (2007). *Randomised controlled trials*. Oxford, Blackwell.
- JANZ, N. K., & BECKER, M. H. (1984). *The health belief model: A decade later*. *Health Education Quarterly*, 11, 1-47.
- JASON, L., A.; DURLAK, J., A., & HOLTON-WALKER, E. (1984). *Prevention of child problems in the schools*. In M.C Roberts and L Peterson (Eds), *Prevention of problems in Childhood*. New York; Wiley.
- KALICHMAN, S.C., CAREY, M.P., & JOHNSON, B.T. (1996). *Prevention of sexually transmitted HIV infection: a meta-analytic review of the behavioural outcome literature*. *Ann Behav Med*; 18:6-15.
- KELLY, J.A., MURPHY, D.A., SIKKEMA, K.J. & KALICHMAN, S.C. (1993). Psychological interventions to prevent HIV infection are urgently needed: new priorities for behavioural research in the second decade of AIDS. *American Psychologist*, 48(10), 1023-1034.
- KINCAID, D. L. (2002). *Drama, emotion, and cultural convergence*. *Communication Theory*, 12, 136-152.
- LITTELL, J., CORCORAN, J. & PILLAI, V. (2008). *Systematic reviews and Meta - Analysis*. Oxford University Press.
- MAPC, Myanmar AIDS Prevention and Control Project (2000). Department of Health. *Sentinel surveillance data for March-April 2000*, Yangon, AIDS Prevention and Control Project, 2000.
- MIDDLESTADT, S., FISHBEIN, M. & ALBARRACIN, D. (1995). Evaluating the impact of a national AIDS prevention radio campaign in St. Vincent and the Grenadines. *J Appl Soc Psychol* 1995 25:21-34.
- MOHER, D., COOK, D., EASTWOOD, S., OLKIN, I., RENNIE, D., STROUP, D. (1999). *Improving the quality of reports of meta-analyses of randomised controlled trials: the QUOROM statement*. *Lancet*; 354:1896-900.
- NCHADS, Cambodia, National Center for HIV/AIDS, Dermatology and STIs (2002) *HIV sentinel surveillance in Cambodia*. Phnom Pen.
- OBREGON, R. and MOSQUERE, M. (2005).

Participatory and cultural challenges for research and practice in health communication In O. Hemer and T. Tufte (Ed.) *Media and Glocal Change Rethinking Communication for Development* (P.233-246). Buenos Aires: Nordicom.

ONG W. (1982). *Orality and Literacy: The Technologising of the World*. London, England: Methuen;1982.

PANFORD, S., NYANEY, M.O., AMOAH S. and AIDOO G.A. (2001). *Using Folk Media in HIV/AIDS prevention in Rural Ghana*. American Journal of Public Health, Vol 91, No. 10.

PANOS (2003). *Missing the message? 20 years of learning from HIV/AIDS*. The Panos Institute, London.

PIOTROW, P.T.; KINCAID, D.L.; RIMON J.G and RINEHART, W (1997) *Family planning communication : lessons for public health*. New York: Praeger.

RESNIKOW, K., SOLER, R., BRAITHWAIT, R. L., AHLUWALIA, J. S., & BUTLER, J. (2000). Cultural sensitivity in substance abuse prevention. *Journal of Community Psychology*, 28, 271-290.

ROSENSTOCK, I.M., STRECHER, V.J and BECKER, M.H. (1994). *The health belief model and HIV risk behaviour change*: In R.J. DiClemente and J.L. Peterson (Eds), *Preventing AIDS: Theories and methods of behavioural interventions*. New York: Plenum.

SECKINELGIN, H. (2002) *Time to stop and think: HIV/AIDS, global civil society and people's politic*: In: *Global civil society*, Oxford; Oxford University Press (pp.109-136).

SCHULZ, K.F., ALTMAN, D.G., & MOHER, D. (2010) The CONSORT 2010 Statement: updated guidelines for reporting parallel group randomised trials. *Ann Intern Med* 11; 152.

SHAPIRO, D., MEEKERS, D. & TAMBASHE, B. (2003) Exposure to the 'SIDA dans la Cite' AIDS prevention television series in Cote d'Ivoire, sexual risk behaviour and condom use. *AIDS Care* 2003 15:303-14.

SINGHAL, A and ROGERS, E.M. (1999). *Entertainment-Education: A communication strategy for social change*. Mahwah, NJ: Erlbaum.

SINGHAL, A, ROGERS, E.M. (1999). Miguel Sabido and the entertainment-education strategy. In: *Entertainment-Education: A Communication Strategy for Social Change*. London, England: Lawrence Erlbaum Associates.

SINGHAL, A., & ROGERS, E. M. (2002). A theoretical agenda for entertainment-education. *Communication Theory*, 12(2), 117-135.

SINGHAL, A. (2004) *Entertainment -Education. Through participatory theatre ;Freirean Strategies for Empowering the Oppressed*: In :A. Singhal, M. J. Cody, E.M. Rogers, & M. Sabido (eds.) *Entertainment-Education and Social Change: History, Research, and Practice* (pp. 377-398). Mahwah, NJ: Lawrence Erlbaum Associates.

SMITH, R. A., DOWNS, E. and WITTE, K (2007) *Drama Theory and Entertainment Education: Exploring the Effects of a Radio Drama on Behavioral Intentions to Limit HIV Transmission in Ethiopia*, *Communication Monographs*, 74:2, 133 - 153.

SONG, F., EASTWOOD, A.J., GILBODY, S., DULEY, L. & SUTTON, A.J. (2000). Publication and related biases. *Health Technology Assessment*, 4(10).

STOREY, D., & JACOBSON, T. (2004). Entertainment-education and participation: Applying Habermas to a population program in Nepal. In A. Singhal, M. Cody, E. Rogers, & M. Sabido (Eds.), *Entertainment education and social change* (pp. 377-397). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

- SUE, S. (1998). In Search of Cultural Competence in Psychotherapy and Counseling. *The American Psychologist*, 53, 440.
- SUTTON, A.J., ABRAMS, K.R., JONES, D.R., SHELDON, T.A., & SONG, F.(1998). Systematic reviews of trials and other studies. *Health technology Assessment*,2(19).
- TOBLER, N., S & STRATTON, H., H. (1997). Effectiveness of school-based drug prevention programs: A meta analysis of the research. *Journal of Primary prevention*,18(1),71-128.
- TORGERSON, D.(2001) Contamination in trials: is cluster randomisation the answer?" *BMJ* ;322: 355-357.
- TUFTE, T. (2001) *Entertainment Education and Participation. Journal of International Communication*, 7 (2): 21-50.
- UNAIDS (2009) *Report on the global AIDS epidemic*. Available at: <http://www.unaids.org/en/CountryResponses/Regions/SubSaharanAfrica.asp>. Accessed 16/11/10.
- UPHOFF, N (1985) *Fitting projects to people* :In : M. M. Cernea,(ed) *Putting people first: sociological variables in rural development*(pp.369-378). Oxford, U.K :Oxford University Press.
- VALENTE ,T.W. AND BHARATH,U.(1999). *An evaluation of the use of drama to communicate HIV/AIDS information*. *AIDS Education and Prevention*,11(3),203-211.
- VANLANDINGHAM, M.J.,SUPRASERT, S. and GRANDJEAN,N.(1995). *Two views of risky sexual practices among northern Thai males: the health belief model and the theory of reasoned action*. *Journal of health and Social Behaviour*,36,195-212.
- VAUGHAN, P., ROGERS, E. and SINGHAL, A. (2000a) *Entertainment-Education and HIV/AIDS prevention: A Field Experiment in Tanzania*, *Journal of Health Communication*, Vol.5, pp.81-100. Taylor and Francis.
- WORLD BANK (2010) *Countries and Regions*. Available at: <http://www.worldbank.org/>. Accessed: 23/8/ 2010.
- WORLD HEALTH ORGANIZATION(2002). *Broadening the Horizon: Balancing Protection and Risk for Adolescents*. Geneva, Switzerland.
- WORLD HEALTH ORGANIZATION (2006) *Preventing HIV/AIDS in young people: a systematic review of the evidence from developing Countries: UNAIDS interagency task team on HIV and young people / editors: David Ross, Bruce Dick, and Jane Ferguson*. Available at: http://www.who.int/child_adolescent_health/documents/trs_938/en/index.html Accessed on 15/7/ 2010).
- YODER, P.S., HORNİK, R., CHIRWA, B.C.(1996) *Evaluating the program effects of a radio drama about AIDS in Zambia. Stud Fam Plann* 1996 27:188-203.

APPENDICES

APPENDIX 1. Data extraction and management

Data will be extracted by JA. A standardised data extraction form will be used to achieve this objective. The following characteristics will be extracted from each included study.

Details of study

- study design
- Method(s) of recruitment
- Number of participants assessed for eligibility (number excluded, enrolled, and analysed)
- Geographic location of the study
- background HIV prevalence in the general population
- number of participants

Characteristics of participants

- age
- education
- occupation
- socio-economic status
- marital status
- number of sexual partners
- condom use
- contact with sex workers

Details of the intervention

- duration of intervention
- type of performers (human or puppets)

Details of outcomes

- incidence of HIV infection: HIV-1, HIV-2, both, or unclear
- types of tests used to determine or confirm HIV status
- when data were collected: baseline, post-tx, or other
- whether data collected in same manner

for intervention and control groups

Details of analysis

- type of statistical analysis
- time intervals included in analysis
- type of effect measure with confidence interval (CI)

Details of study ethics

- informed consent procured for participation
- type of consent (i.e. oral or written)
- details of ethics approving institution

Administrative details

- author(s)
- year in which study was conducted
- year of publication
- details of other relevant papers cited

For ITS, if outcomes over time are only reported graphically in the original paper, data will be extracted by scanning the figures into a computer and measuring each data point. This approach was previously adopted in Cochrane reviews (Vidanapathirana et al, 2009; Grilli, 2002).

Assessment of the risk of bias

JA will examine the risk of bias within individual components in each included study using a standard form. The form will include information on blinding (i.e. participant or investigator), allocation concealment, sequence generation, incomplete outcome data, selective outcome reporting, and other sources of bias (e.g. performance, attrition etc). As per guidelines from the Cochrane Handbook of Systematic Reviews of Interventions (Higgins and Green, 2009), the methodological components of the included studies will be

appraised and categorised as *adequate*, *inadequate*, or *unclear*, as seen below:

Sequence generation

Adequate: Investigators explicitly describe a random component in the sequence generation process (e.g. shuffling of cards/envelopes, coin tossing, table of random numbers etc)

Inadequate: Investigators state the use of a non-random component in the sequence generation process (e.g. odd or even date of birth, clinic record number etc)

Unclear: Investigators provide insufficient information regarding the sequence generation process

Allocation concealment

Adequate: Study participants and investigators involved in their enrolment are unable to foresee assignment in respective groups (e.g. sequentially numbered, opaque, sealed envelopes etc)

Inadequate: Study participants and investigators involved in their enrolment can foresee prospective assignment (e.g. non-sequentially numbered, unsealed, non-opaque envelopes)

Unclear: Investigators provide insufficient information regarding allocation concealment process

Blinding

Adequate: secure blinding/masking of study participants, outcome assessor, investigators and other key personnel; a case or situation where a lack of blinding is unlikely to introduce bias.

Inadequate: no blinding, incomplete blinding or the likelihood that blinding could have been broken; likelihood that the outcome might be influenced by the lack of blinding.

Unclear: investigators provide insufficient information regarding the blinding process.

The nature of participatory drama interventions make it impossible to blind the personnel delivering the intervention (i.e. the performers) or the study participants. However, it will be possible to blind the assessors. As such, the categorisation of adequate, inadequate, or unclear will be confined to the blinding of assessors.

Selective reporting

Adequate: The availability of a protocol which explicitly describes the primary outcome as the same as in the final trial report.

Inadequate: The primary outcome in the protocol and final trial report is incongruent.

Unclear: Insufficient reporting to determine whether selective reporting is present or lack of trial protocol.

Incomplete outcome data

Adequate: No missing outcome data; number of missing outcome data balanced across groups; no correlation between reasons for missing data and true outcome.

Inadequate: Likely correlation between reasons for missing outcome data and true outcome; number or reasons for missing data imbalanced across groups.

Unclear: Insufficient reporting of attrition or exclusion.

Other forms of bias

Adequate: No evidence of bias from other sources.

Inadequate: There is potential bias present from other sources (e.g. excessive baseline imbalance, early stopping of trial etc).

Unclear: Insufficient reporting of whether other forms of bias exist.

Data analysis

Measures of treatment effect

The primary outcome, HIV incidence (i.e. HIV-1 or HIV-2), will be expressed using survival estimates that include the time until study participants were (1) diagnosed with HIV infection; (2) the time until they were lost to

follow up, or (3) the time they were free from infection. The incidence risk ratio (hazard ratio), calculated from the trial report data, will be used in determining the measure of treatment effects. An intention-to-treat analysis will be used.

For the secondary outcomes, a calculation of the relative risk as the effect measure for dichotomous data will be employed.

For ITS, the calculation of effect sizes will be achieved by extracting and reanalyzing data from original studies using a segmented time series regression analysis (Ramsay et al, 2001).

Heterogeneity and subgroup analyses

Homogeneity in the study results will be evaluated using the Chi-square test for heterogeneity, with a 10% level of significance being used as the endpoint. The I^2 statistic will be used to calculate the impact of statistical

heterogeneity (Higgins and Thompson, 2002; Higgins et al, 2003). Randomised trials and non-randomised trials will be analyzed separately. A meta-analysis will be conducted if the included studies are sufficiently homogenous. This will be achieved by combining the incidence risk ratios (hazard ratios), using RevMan's (Version 5.0. Copenhagen: The Nordic Cochrane Centre, The Cochrane Collaboration, 2008) generic inverse variance function. Relative risks will be combined by using a random effects inverse variance method.

Sensitivity analysis

Sensitivity analysis will be conducted to assess the impact of the quality of included studies on the synthesized outcomes. The quality of studies will be evaluated by allocation concealment, intention to treat etc.

APPENDIX 2. Excluded studies

	Shapiro et al, 2003
Settings/target	Abidjan Boudepe and N'Douci, Ivory Coast. General population with electricity
Overview	'SIDA dans la cite' is a weekly TV soap opera which describes the life of a family touched by HIV/ AIDS
Primary objectives	To educate public about HIV aetiology
Results	Women and men who had seen 10 or more episodes were significantly more likely, 1.4 x and 2.7 x respectively, to use condoms
Duration of campaign	Five months
Frequency	Once a week for 5 months
Reason for exclusion	Decisive: Broadcast intervention & non-participatory approach
Description of evaluation	Cross sectional study design comparing individuals exposed to intervention versus those not exposed to intervention
Sample characteristics	Size: 2150 Sex: 47.4% (male) 52.6% (female)

Vaughan et al, 2000b

Settings/target	St Lucia, Caribbean. General population.
Overview	Radio soap opera called 'Apwe Plezi' which contained positive, negative and transitional role models.
Primary objectives	Promote family planning; prevent HIV and other STI's; promote gender equity
Results	Reduced HIV/AIDS misconceptions; improved HIV/AIDS attitudes; no evidence of being effective in increasing condom use
Duration of campaign	Feb 1996 – May 97 <i>phase 1</i> July 1997 – Sept 1998 <i>phase 2</i> Sept. 1998 – Sept. 2000 <i>phase 3</i>
Frequency	260 15-minute episodes shown 5X a wk (<i>phase 1</i>) 105 15-minute episodes 3X a week (<i>phase 2</i>) 21 street theatre performances (<i>phase 3</i>)
Reason for exclusion	Decisive: Broadcast intervention & non-participatory approach
Description of evaluation	Pre=post interventional trial. Serial cross sectional assessment comparing before to after data with the two follow up surveys. Probability selection of study participants.
Sample characteristics	Baseline size: 753 First follow-up: 741 Second follow up: 497 Age: 15+ (mean age 29.3) Sex: 52% (female) 48% (male)

Vaughan et al, 2000a

Settings/target	Tanzania. General public
Overview	Radio soap opera which educates people about HIV/AIDS
Primary objectives	To promote interpersonal communication about HIV/AIDS using role models
Results	Reduced high-risk sexual behaviour; increased the perceived risk of HIV/AIDS acquisition
Duration of campaign	79 months
Frequency	30 minute shows 2 x per week
Reason for exclusion	Decisive: Broadcast intervention & non-participatory approach
Description of evaluation	Non- randomised pre/post intervention trial serial cross sectional assessment comparing : (I) intervention versus control (ii) intervention versus control controlling for eight independent variables and radio ownership
Sample characteristics	Sample size : Year ~ 1993 (I) 1793 (c) 859 ~ 1994 (follow up) (I) 1924 (c) 861 ~ 1995 (I) 1940 (c) 861

Yoder et al, 1996

Settings/target	Northern Zambia, Bemba speaking Zambians
Overview	Radio drama performed in Bemba language. Portrayed 2 families living in Lusaka and follows their everyday lives as they make and maintain friendships, work and learn about HIV/AIDS
Primary objectives	To create awareness about HIV risks, prevention and transmission
Results	Improved HIV/AIDS knowledge and perceived risk of HIV infection
Duration of campaign	9 months
Frequency	39 30-minute drama episodes broadcast weekly
Reason for exclusion	Decisive: Broadcast intervention & non-participatory approach
Description of evaluation	Pre/post intervention serial cross-sectional trial comparing (i) the sample before and after the intervention (ii) changes over time among study participants most likely to have listened to radio intervention (intervention arm was high access group; control arm was low access group)
Sample characteristics	Baseline: 1613 (949 low access; 664 high access) Follow up: 1682 (997 low access; 685 high access) Age: Mean age @ baseline: 25.9 yrs Mean age @ follow-up: 26.9 yrs Sex: 50% (male); 50% (female)

Valente and Bharath, 1999

Settings/target	Tamil Nadu State, India. Target group was people living in inner city slums.
Overview	Three drama performances on HIV/AIDS performed by community theatre group called Nalamdana (Are you well in Tamil)
Primary objectives	To create awareness about HIV prevention and transmission
Results	Decreased HIV/AIDS misconceptions; improved HIV/AIDS attitudes
Duration of campaign	24 months
Frequency	120 -1 to 2 hour shows performed with an average attendance of 1000 people
Reason for exclusion	Decisive: Non-participatory approach
Description of evaluation	Pre /post intervention randomised control trial comparing (i) intervention and control group before and after intervention, (ii) after intervention only.
Sample characteristics	Size (I) 93 (C) 99 Age: age reported by subgroups only Sex (I) 23.4 % (male) 76.3% (female) Sex (C) : 44.9% (male) 55.1% (female)

Harvey et al, 2000

Settings/target	KwaZulu Natal, South Africa. Targeted at standard (grade) 8
Overview	Community intervention trial where seven pairs of schools were randomised to receive either written information about HIV/AIDS or the drama programme
Primary objectives	To evaluate the effectiveness of high schools drama education programme
Results	Increased condom use ; HIV knowledge and attitudes
Duration of campaign	2years
Frequency	NR
Reason for exclusion	Decisive: Non-participatory approach
Description of evaluation	Cluster randomised controlled trial with 7 pairs of schools randomised to receive either written information about HIV/AIDS or a drama programme. Questionnaire surveys of knowledge, attitudes and behaviour compared before and 6 months after interventions.
Sample characteristics	Size: Pre/post: 1500Post only: 699 Age: 15-18 ~ 26.1 % 19-25 ~ 45.6% 26-35 ~ 13.0% 36-45 ~ 15.4% Sex : Male : 76.3%

About the Author

Mr. Apea holds a Master of Science degree in Social Policy from the University of Oxford (UK), together with a Bachelor of Arts degree in Social Political Sciences from the University of York (UK). He is an award-winning filmmaker and has held positions at the Commonwealth Office in the United Kingdom. Currently, Mr. Apea is working as a Senior Community Organiser with a Government Ministry in the United Kingdom, and was a Judge on the 2011 Commonwealth Film Competition.